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# Caribbean Marine Biodiversity Program

Cooperative Agreement AID-OAA-A-14-00064

## Consolidated Socio-economic Assessment

March 2017

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## Acronyms

AFVJ	Asosiyasyon Fanm Vanyan Jakzi (Association of Strong women of Jakzi)
ASME	Agency for the Protection of Mangrove and the Environment
APDK	Asosiyasyon Peyizan pou Developman Karacol (Association of Countryfolk for the Development of Caracol)
APJ	Asosiyasyon Pechè Jakzi (Jaquesyl Fishers association)
BBFFS	Bluefields Bay Fishermen's Friendly Society
BREDS	Treasure Beach Foundation
CCAM	Caribbean Coastal Area Management Foundation
CEBSE	Center for the Ecodevelopment of Samaná and its surroundings (Spanish acronym)
CMBP	Caribbean Marine Biodiversity Program
FoProBiM	Foundation for the Protection of the Marine Biodiversity (French acronym)
GOG	Government of Grenada
GPS	Global Positioning System
JCIF	Jamaica Social Investment Fund
MFI	Microfinance Financial Institution
MPAs	Marine Protected Areas
MFI	Micro-Finance Institution
NEPA	National Environment and Planning Agency of Jamaica
NGO's	Non-Government Organizations
OFVJ	Fishers Association of Jacquesyl
OPDK	Fishers Association for the Development of Caracol
OPDM	Fishers Organization for the Development of Madras
OPPBL	Fishers Organization for the Protection of the sea border of Limonade
SusGren	Sustainable Grenadines
SWCSFCA	Pedro Bank's South West Cay Special Fisheries Conservation Area
TNC	The Nature Conservancy
USAID	United States Agency for International Development
USG	United States Government

## Introduction

People and nature face interconnected challenges posed by economic challenges, higher consumption rates, development and degraded natural resources, to name a few. Therefore, with these issues in mind, the Caribbean Marine Biodiversity Program (CMBP) has been developed, with the objective of reducing *threats to marine-coastal biodiversity in priority areas in the Caribbean*— to achieve sustained biodiversity conservation, maintain critical ecosystem services, and realize tangible improvements in human wellbeing for communities adjacent to marine protected areas (MPAs/MMAs). To achieve this objective, the CMBP addresses direct and indirect threats to marine and coastal biodiversity at multiple geographic scales simultaneously. More specifically, the CMBP includes nested and inter-connected actions across four geographic scales: site, seascape, national and regional. Most of the funding and activities are centered on *four targeted seascapes*: (i) North Coast of Hispaniola (focus on Haiti); (ii) Samaná Bay (Dominican Republic); (iii) Pedro Bank and Southwest Coast of Jamaica (Jamaica); and (iv) Grenadine Bank (Grenada and St. Vincent and the Grenadines) (see Figure 1). This five-year initiative, funded by the United States Agency for International Development (USAID), is being implemented by The Nature Conservancy (TNC), with a consortium of four major non-governmental organizations. The Program includes four major Expected Results:

- Expected Result #1: Enabling environment created for long term Marine Managed Areas (MMAs) success
- Expected Result #2: Effective marine spatial plans and seascape governance mechanisms
- Expected Result #3: More sustainable fisheries sector by maximizing fishery benefits of MMAs, promoting innovative fishery management actions and promoting sustainable livelihoods
- Expected Result #4: Effective management and governance of MMAs

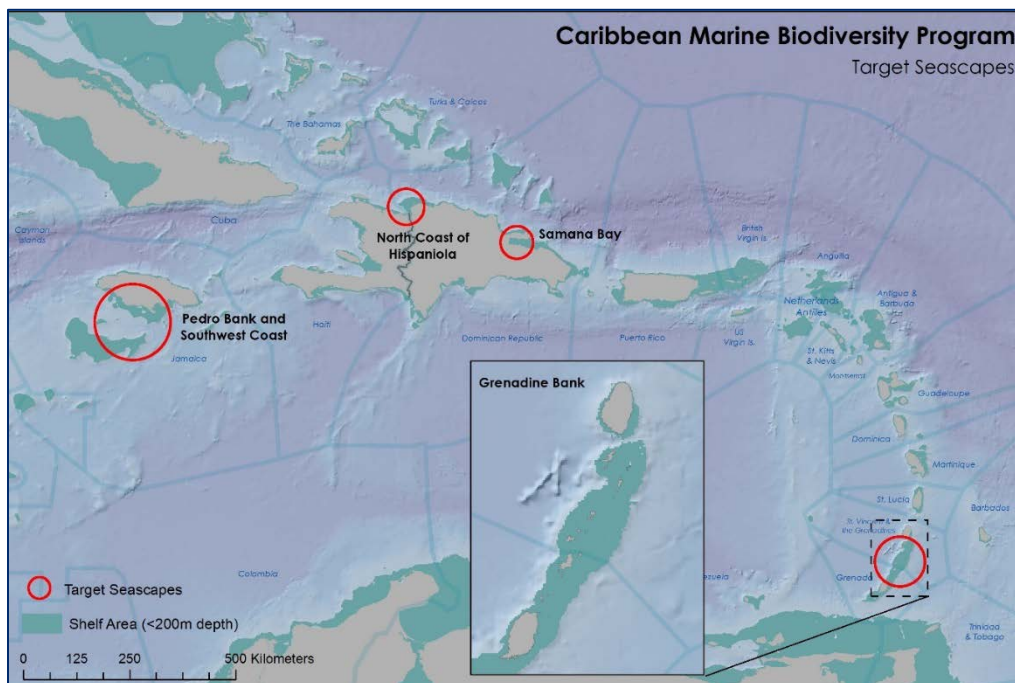


Figure 1: Target Seascapes of the Caribbean Marine Biodiversity Program

The surrounding communities have a strong social influence on all natural systems in which CMBP operates. Therefore, to increase chances of conservation success, CMBP initiatives under Expected

outcome #3 are geared towards promoting systemic change within the socio-ecological framework of the targeted seascapes, whereby people (direct beneficiaries) become aware of the value of marine and coastal resources and how their decisions impact the environment and the ability for it to sustain them as well.

*Direct beneficiaries of the project* are defined as people who have interfaced directly with Caribbean Marine Biodiversity Program activities, encouraging them to implement a change in fishing practices and/or adopt an alternative sustainable livelihood. Consequently, involvement in sustainable practices/alternative income generating activities will address some social and economic challenges within communities, thereby lessening their dependence on and usage of marine resources.

The aim of the study was to assess beneficiaries' current socio-economic situations, through a gender lens, while also investigating their knowledge of marine conservation issues. The study also explores possible alternative income activities that they would be open to engaging in, while evaluating the benefits that they have received from program activities carried out thus far. This assessment contributes to determine values for CMBP indicators pertaining to the number of fishers changing fishing practices and the number of people that report having changes in income resulting from participation in project activities.

#### **Methodology:**

Using a questionnaire and a moderator guide developed by The Nature Conservancy (TNC), a group of consultants (one in each seascape) conducted structured interviews and facilitated a series of focus group discussions with individuals and groups identified as beneficiaries and potential beneficiaries of Caribbean Marine Biodiversity Program activities. The questionnaire specifically addressed the following issues:

- Main income producing activities of the household and time spent on each;
- Fishing practices and gear used;
- Awareness about sustainable fishing practices;
- Fish catch/ consumption; and
- Tangible and perceived changes in economic well-being from alternative livelihoods activities.

The focus group discussions addressed the following topics:

- Gender roles
- Access to assets and resources
- Access to education
- Access to credit
- Interests in alternative livelihood options

A desk review of all activity reports of the project and lists of program participants for each activity was conducted; and a data collection strategy was developed following consultations with the implementing partners, The Nature Conservancy staff and the fisher folk associations. Data was collected between October and November of 2016, and data analysis was carried out between November and December 2016. The CMBP project management unit then consolidated all data collected and the corresponding reports in Y3Q2. The organizations and number of people included in the survey are detailed below:

Dominican Republic Seascape: 165 people

- Cooperative Bahía de San Lorenzo
- Association of Women Artisans of Los Corozos

- Cooperative Espiritu Santo
- Association of fishing workers of Sabana de la Mar (ASOTRAPESAMAR)

GB seascape: 47 people

- Carriacou Fisher Folk (CFF)
- Carriacou & Petite Martinique Water Taxi Association
- Union Island Fisher Folk Cooperative Society (UIFFCS)
- Mayreau Explorers

Haiti Seascape: 215 people

- Asosiyasyon Fanm Vanyan Jakzi (Association of Strong women of Jakzi)
- Agency for the Protection of Mangrove and the Environment
- Asosiyasyon Peyizan pou Devlopman Karacol (Association of Countryfolk for the Development of Caracol)
- Asosiyasyon Pechè Jakzi (Jaquesyl Fishers association)
- Fishers Association of Jacquesyl
- Fishers Association for the Development of Caracol
- Fishers Organization for the Development of Madras
- Fishers Organization for the Protection of the sea border of Limonade
- Other

Jamaica Seascape: 142 people

- Bluefields Bay Fishermen's Friendly Society (BBFFS)
- Reliable Adventures Tours Ltd
- Treasure Beach Women's Group
- BREDS: Treasure Beach Foundation
- Pedro Bank fishers

## Dominican Republic (Samaná Bay) Seascape findings

Beneficiaries of CMBP activities in the DR seascape all hail from 4 communities surrounding Samaná Bay: Sanchez, Los Corozos and Los Cacaos in Samaná province, and Sabana de la Mar in Hato Mayor Province. They are grouped as follows:

*Table 1: Community associations in the Samaná Bay region of the Dominican Republic benefiting from CMBP activities*

Community	Association / Entity
Sanchez	Cooperativa Bahía de San Lorenzo
Los Corozos	Association of Women Artisans of Los Corozos; Association Dios es Amor
Los Cacaos	Cooperativa Espiritu Santo
Sabana de la Mar	Association of fishing workers of Sabana de la Mar (ASOTRAPESAMAR)

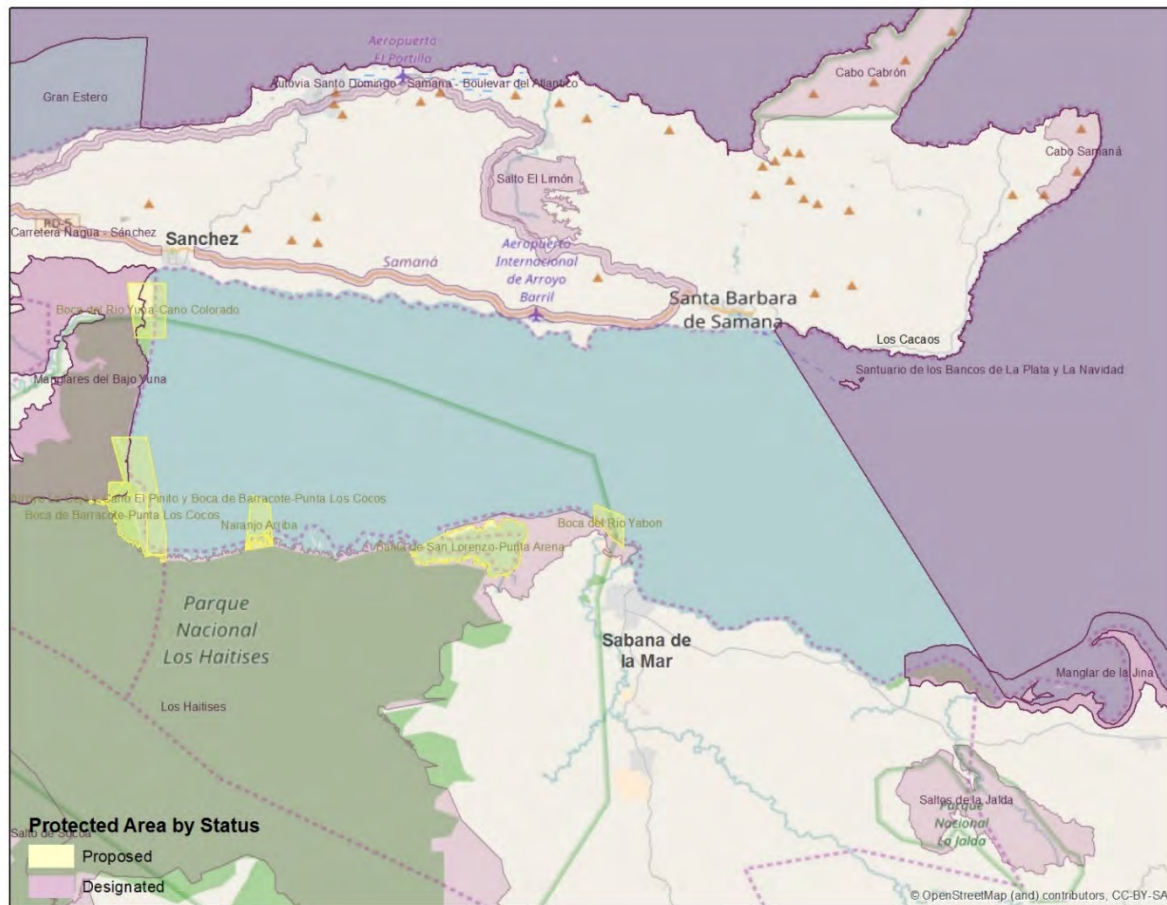


Figure 2: Map of Samaná Bay showing location of communities benefiting from the work of CMBP

### Respondents characteristics

The average age of all beneficiaries was 48 years. 82% of all respondents reported they were heads of their households, while only 65% of the members of the Association of Women Artisans of Los Corozos reported the same<sup>1</sup>. Fishing is the main occupation of Samaná Bay beneficiaries, with 67% of respondents

<sup>1</sup> The Rapid Fisheries Sector Assessment carried out by CIBIMA (2015) for the CMBP determined that although most (75%) fishers are young (40 years or less) 58% of them has at least 15 years fishing.



reporting this as their main economic activity. 68% report having more than one occupation to sustain themselves and their families; 34% had 2 activities and 34% were involved in three income generating activities. A disaggregated view of this information by entity reveals that 65% of the Association of Women Artisans of Los Corozos perform more than three economic activities, similar to the members of the Association Dios es Amor, where 58% have three occupations.

58.8% of beneficiaries have another member of the household that also contributes economically to the well-being of the household. In the case of the Women Artisans Association, 90% responded that others contributed to their households, mainly spouses (see Table 2).

Table 2: Percentage of people contributing to household income, split by community groups in the DR who benefit from CMBP activities (N=165)

Household composition	Cooperativa	Asociación	Asociación	Cooperativa	ASOTRAPESAMAR	Total
	Pescadores Bahía San Lorenzo	Pescadores Dios es Amor	Artesanas de Los Corozos	Pescadores Espiritu Santo		
n=	52	19	20	21	53	165
Head of Household	86.5	84.2	65.0	76.2	84.9	81.8
Spouse	3.8	5.3	25.0	0.0	3.8	6.1
Son / Daughter	7.7	10.5	5.0	19.0	7.5	9.1
Other relative	1.9	0.0	5.0	4.8	3.8	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

## Fishing practices

During interviews and focus groups it was noted that some fishers fish during the night; during the day, they sleep, work in orchards adjacent to their homes or work as day labourers in nearby commercial farms. Fishing is the overall main activity and is carried out using nets set at sea for 2-8 hours, cast nets (2 - 6 hours), hook and line (depending on the modality, from 4 to 12 hours) and longline (from 2 to 8 hours). Occasional use of artisanal traps (soaking time from 2 to 4 days) was reported in Sabana de la Mar<sup>2</sup>.

When questioned on sustainable fishing methods, most beneficiaries reported targeting adult fish followed using hook and line as their most common fishing practices (see Table 3).

Table 3: Fishing practices employed by different fishing associations in Samaná Bay n=145)

	Cooperativa Pescadores Bahía San Lorenzo (%)	Asociación Pescadores Dios es Amor (%)	Cooperativa Pescadores Espiritu Santo (%)	ASOTROPESAMAR (%)
# of valid answers	52	19	21	53
Adult fish targeting	61.5	47.4	28.6	28.3
Adult lobster targeting	3.8	0.0	4.8	11.3
Lobster fishing only during open season	1.9	0.0	0.0	11.3
Catch log-book	7.7	10.5	4.7	15.1
Fishing with hook and line	23.1	42.1	38.1	45.2
Manual harvesting of crabs	5.7	0.0	4.7	3.8

Shrimp (42%) is the species identified as the most captured in the study area. Members of the Cooperative Bahía de San Lorenzo show the highest peaks in the capture of shrimp (89%) well above the average,

<sup>2</sup> Specifications regarding the process and time for the use of each gear provided by Miguel Silva, pers. comm. March 2017.

almost doubling the partners of the other entities interviewed. 30% of ASOTRAPESAMAR's members report catching parrotfish.

During the data collection process, the fishing communities were going through a critical period due to the tropical storms affecting Samaná, Sánchez and Sabana de la Mar (November and December of 2016). The storms have been considered much more intense than in previous years. The fishers stated that it was a difficult time to go fishing because of the unexpected storms, and they were risking their lives to obtain income because they did not have other means to support their families.

During the focus group, the following perceptions were highlighted:

- Climatic conditions have reduced the possibility of traditional fishing, as the fish have moved farther into deeper waters
- According to fishers, populations of fish, shrimp and crabs have declined due to the bad weather and to the unsustainable practices that other fishers employ, such as using trawls and juvenile fishing.
- Conflicts exist among associations (and their leaders) that use trawling nets harmful to corals and shrimp;
- There is a high level of poverty that results in permanent economic instability. The main income earning activity is fishing with few sources of secondary economic alternatives;
- Subsistence farming is practiced in these communities, and surplus for sale is negligible. Occasionally coconuts, avocados and bananas are sold to neighbors or in nearby markets

Respondents report that other fishers use a trawling net called "licuadora" (literal translation from Spanish is blender), which destroys the bottom of the ocean, affecting shrimp fishing, damaging reefs, with significant by-catch. It is worth noting that since 2015 CEBSE (CMBP local partner in Samaná Bay) has carried out a systematic environmental educational program with most beneficiaries' groups, with ASOTRAPESAMAR as the most recent group.

CODOPESCA estimates that approximately 34% of all Dominican fishers, reside and fish in Samaná Bay (CODOPESCA, 2012). Fisheries in Samaná Bay are predominantly artisanal and small-scale and fishers mostly sell to middlemen / fish shops<sup>3</sup>. The Rapid Fisheries Assessment of Samaná Bay determined that fish shops own approximately 43% of all fishing gear and boats, which they lend to fishers, subsequently leading / determining the catch. CEBSE reports that conflicts reported bring about occasional violent confrontations. The project beneficiaries' groups have received environmental education training from CEBSE, and they now have a broader awareness about how unsustainable fishing practices can affect their livelihoods.

CMBP's objective in supporting the associations interviewed is to minimize the negative impacts of inadequate, unsustainable or low-efficiency fishing practices and to promote alternative means of generating income. As part of these initiatives, a training on the use of suriperas nets in shrimp fishing activity was highlighted by the beneficiaries; 46% of the population surveyed stated that they had used new fishing gear – the suripera net for shrimp fishing. This was particularly the case with members of the San Lorenzo Cooperative, where 71% of the respondents confirmed that they had used / tried this fishing gear.

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<sup>3</sup> CIBIMA / TNC: Evaluación Rápida del Sector Pesquero en la Bahía de Samaná, República Dominicana. Report prepared for the Caribbean Marine Biodiversity Program, March 2015.

Respondents' awareness levels of the importance of ecological services provided by habitats in Samaná Bay are generally high (see Table 4). Most participants agreed that coral reefs are important habitats for many species of marine life (78%), and that coral reefs helped create jobs for the community via ecotourism (57%).

Table 4: Respondents responses regarding coral conservation in Samaná Bay, Dominican Republic (N = 165)

	Agree (%)	Disagree (%)
Coral reefs are important habitats for many species of marine life, from which fishers depend for food and income	78.2	21.8
Protection of reefs will not protect the livelihoods of fishers	33.9	66.1
Coral reefs protect the coast from wave erosion	47.9	52.1
Healthy coral reefs attract eco-tourism and create jobs for the community	57.0	43.0

## CMBP impact on income and preferred alternative livelihoods

When asked how their incomes have been affected since the CMBP intervention, 25 respondents (47.2%) reported a perceived increase in income. The Cooperativa Bahía San Lorenzo and Cooperativa Espíritu Santo, which have already received CEBSE/CMBP support in income diversification activities, registered similar growth in which at least 4 out of 10 member-fishers reported increased income. 70% of the members of Women Artisans Association of Los Corozos that were interviewed reported increased income. Respondents were asked in which fishing alternatives they would like to participate. Their responses are varied, but suripera nets for shrimp fishing (38%), lobster traps (30%) and fine mesh over a large mesh size (33%) were the most popular fishing options among beneficiaries (see Table 5). Regarding alternative income generating activities, the two top choices were mangrove restoration and coral gardening (except from ASTROPESAMAR and the artisan group of Los Corozos).

Table 5: Interest in alternative fishing practices and alternative generating activities (N=165)

	Cooperativa Pescadores Bahía San Lorenzo (%)	Asociación Pescadores Dios es Amor (%)	Asociación Artesanas de Los Corozos (%)	Cooperativa Pescadores Espíritu Santo (%)	ASOTRAPESAMAR (%)	Total (%)
No. of valid answers	52	19	20	21	53	165
Lobster traps	34.6	21.1	55.0	28.6	18.9	29.7
Suripera nets	61.5	10.5	5.0	23.8	43.4	38.2
GPS	23.1	36.8	0.0	38.1	22.7	23.6
VHF Radio	15.3	0.0	5.0	23.8	5.7	10.3
Ice box	19.2	15.8	0.0	14.3	5.7	11.5
Fine mesh nets exchange for wider ones.	55.8	26.3	0.0	28.6	26.4	33.3
Training in new fishing practices	48.1	26.3	0.0	47.6	13.2	29.1
Oyster farming	30.8	10.5	0.0	28.6	7.6	17.6
Crab fishing	11.5	0.0	0.0	19.1	5.7	7.9
Tilapia fishing	19.2	0.0	5.0	9.5	1.89	8.5
Seamoss farming	7.7	5.3	5.0	4.76	1.89	4.85
Preparation of minuta	23.1	10.5	5.0	9.5	18.9	16.4
Lionfish catch and marketing	17.3	0.0	0.0	33.3	0.0	9.7
Fish reserves management	19.23	10.5	0.0	23.8	1.89	10.9
Beekeeping	15.4	10.5	0.0	33.3	1.89	10.9
Poultry	19.2	10.5	0.0	33.3	3.8	12.7
Water taxi	23.1	5.3	.0	28.6	1.89	12.12
Coral gardens	25	10.5	5.0	38.1	3.77	15.8
Mangrove restoration activities	40.4	26.3	0.0	52.4	1.89	23.0
Fishing nets knitting	34.6	10.5	5.0	14.3	7.6	16.9

## Community gender relations and perceptions

Most respondents from all associations agree with the statement that a woman has the same right as a man to earn a living, and that women are as capable as men (see Table 6). Most positive responses on these gender-related matters came from Cooperativa Pescadores Bahía San Lorenzo, ASOTRAPESAMAR and the Women Artisans of Los Corozos. Traditional perceptions related to gender differences, such as “A woman’s place is in the home” and “Men are more qualified than women to make important decisions for the community” were the least popular statements among all entities. While most respondents have some perception of gender equity, there are still some who hold traditional viewpoints regarding the role of women in the community.

*Table 6: Positive responses regarding gender relations and perceptions among association in Samaná Bay, (N=165)*

	Cooperativa Pescadores Bahía San Lorenzo (%)	Asociación Pescadores Dios es Amor (%)	Asociación Artesanas de Los Corozos (%)	Cooperativa Pescadores Espíritu Santo (%)	ASOTRAPESAMAR (%)
Women are as capable as men	71.2	47.4	80.0	61.9	45.3
A woman’s place is in the home	38.5	15.8	15.0	28.6	7.6
Men are more qualified than women to make important decisions for the community	38.5	52.6	15.0	19.05	28.3
A woman has the same right as a man to earn a living	61.5	47.4	35.0	66.7	73.6

The main perceptions identified from the qualitative data collection can be summarized as follows:

- Beneficiaries groups perceive that the high poverty level is causing a chronic state of economic instability. All income generated comes from fishing and a few secondary alternatives; however, total income earned remains quite low.
- Women seldom participate in fishing related activities; however, when they are involved, it is usually in post-harvest activities, netting low income.
- There is a clear gender-division of labor, in the home and in income-generating activities. Qualifications to pursue other endeavors besides fisheries are very deficient overall.
- Respondents complain about the lack of support from government entities such as the Dominican Navy, the National Fisheries Council or the Ministry of Environment and Natural Resources. Simultaneously they acknowledge the work of local NGOs in environmental education and training on alternative fishing techniques and the positive impact the activities have had on their overall behavior.

The women interviewed in Sabana de la Mar reported that they wait for the fishers to come ashore, and then clean and cut the fish, and clean the boats. When they finish their work on the beach, some fry fish or buy the small fish to make meatballs in their houses, for consumption, for sale in their small businesses or for sale to large wholesalers in their communities. Women always work when there is catch. In some communities -such as Los Corozos – they don’t participate in fish cleaning, but they are still involved in the marketing mix. Some other women participate in crab meat processing. The cleaning and processing activities are regularly performed by women on the beaches, with few exceptions in which they work as a pieceworker for fish shops.

### Labor division

Domestic activities are considered typically feminine in nature; however, some males admitted to aiding wives around the home by running errands or tending the stove. Working women also depended on older

children to assist with domestic tasks in the home once they were able. Some reported that housework can be done by men if women are formally employed.

Going to sea is primarily perceived as a male dominated activity. As mentioned earlier, women participate further along the marketing chain in post-harvest handling and sale of the fish, subsequently receiving marginal income or in-kind payments. Smaller and juvenile fishes are either for household consumption or for sale in their communities. Women also provide occasional labor in fish shops for post-harvest handling in Sabana de la Mar; however, this is not a steady source of income. Fishing is not perceived as a lucrative activity in general.

### **Ownership and access to resources**

Access and ownership of fishing is influenced by the type of association to which the men belong. Men associated in cooperatives in Sanchez and Los Corozos own some of the fishing gear, while the cooperative provides other essential tools of trade. Cooperatives own boats, overboard motors, some nets, and freezers, among other equipment. These resources are shared and maintained among active members and are part of the group inventory and capital. The fishers that do not belong to a cooperative rent gear and boats from fish shops using a portion of the catch for payment. Few fishers have purchased either boats or overboard motors. In Sabana de la Mar there have been reports that occasionally when the economic situation gets difficult, these fishers take the overboard motors to local pawnshops in exchange for quick cash, putting them at risk of losing their resources.

Women do not own fishing gear in general except for the utensils needed for fish cleaning and /or frying, whose comparative value is significantly lower<sup>4</sup>. The Women Artisans of Los Corozos jointly own the gear used to produce their craft items, plus a portable tent used for sales. With their own resources, they have also managed to build a small venue / space used as workshop in their community. A portion of the revenues from sales is kept for the association to capitalize and eventually expand production. They presently are working with CEBSE to build their productive and marketing skills further, with a view to increase and stabilize their sales and income.

### **Access to educational programs**

Vocational training is available in Samaná through the Dominican Institute for Technical and Professional Training (INFOTEP, Spanish Acronym). INFOTEP has a location in Sanchez also providing specific courses in Santa Barbara. Training is provided for free, however, participants are responsible for costs related to the issuance of certificates (approximately USD2). It is reported that free vocational training is also provided through a program of the First Lady of the Republic in association with NGO, Banco Esperanza, mainly related to the production of handicrafts.

Most recently, beneficiary groups from Samaná Province have received training mainly from CEBSE through different projects including CMBP. Banco Esperanza provided the initial training and start-up gear to the Women Artisans of Los Corozos, and the subsequent support came from CMBP through CEBSE, mainly to expand their production and marketing capacities and skills. At the time of the survey, the most popular training was one provided by CMBP on the use of suripera nets for shrimp fishing – carried out mainly by fishers in Sanchez and Sabana de la Mar. The suriperas are a more sustainable alternative to

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<sup>4</sup> It has been reported that there are a couple of women who own fish shops in Sabana de la Mar, who are considered rich as they own fishing gear and boats.

common practices since they minimize by-catch and save fuel. Fishers have shown good levels of acceptance of the new fishing nets.

### **Access to loans and credits**

Two microcredit entities are reportedly present in the area: Banco ADEMI and Banco Esperanza. The study found differences in access to credit between men and women. Men said they had taken more loans than women. The loans were requested to buy fishing tackle and finance the work (purchase of gasoline, etc.). The men pointed out that they access credit mainly through the cooperatives (those who are members) and solidarity banks. These banking institutions are those that mostly provide loans to fishers. According to the respondents, the bank ADEMI is the one that gives more credit in the area. ADEMI usually loans between 30,000 and 50,000 pesos (640 to 1,060 US dollars). CEBSE reports that the 2 Cooperatives have also requested and received credit from the Banco Agrícola, a public bank that grants loans for agricultural and livestock productive purposes.

In the Samaná area, it was reported that the artisan women of Los Corozos applied for group loans for their craft work, and that Banco La Esperanza, (through the Vice-Presidency) offered the money and helped the women by training them. Bank La Esperanza is considered a favorable option by the respondents since interest rates are around 1.5%. In the Sabana de La Mar cooperative it was reported that women applied for loans at Banco La Esperanza as well. The amount loaned was 5,000 pesos (a little over 100 US dollars) to help with one small business for the preparation of juvenile fish called “minuta” which is popular in Sabana de la Mar. They have not requested additional credit, recently due to the low returns from fishing.

## **Grenadine Bank findings**

The Grenadine Bank seascape beneficiaries are based in the three communities surrounding two MPAs, Grenadian MPA (Sandy Island Oyster Bed Marine Protected Area) and the Saint-Vincentian MPA (Tobago Cays Marine Park). The data collection and sample size of the beneficiaries were affected by several factors, including the time of data collection (during the tourist and Christmas seasons), the transitory and migratory nature of the target population (more than 30 percent of the persons listed as beneficiaries were outside of the communities at the time of the survey), and consultation fatigue by the target population. The final sample size was small (32% of identified beneficiaries / potential beneficiaries) but yielded valuable and rich data.

### **Respondents characteristics:**

The Grenadine Bank’s beneficiaries are grouped in associations based on Union Island and Mayreau (Saint Vincent and the Grenadines) and Carriacou (Grenada). Forty-seven (47) persons were surveyed using the structured questionnaire.



Figure 3: Map of target CMBP seascapes in the Grenadine Bank

Surveys in the Grenadine Bank were carried out in Union Island and Mayreau (SVG) and Carriacou, in which the beneficiary communities are based. Males were the dominant head of households in all the communities surveyed in the Grenadine Bank seascape. Females comprised 21% of the total participants surveyed. Potential female beneficiaries were, on average, approximately one year older than males, with an average of 42.6 years compared to males at 41.4 years. The average number of dependents per respondent was 2.9 per main provider, which corresponds with the national average of 3 persons per household for both countries (Grenada and Saint Vincent and the Grenadines) (SVG Ministry of Finance and Government of Grenada 2011).

42% of participants reported fishing as their main productive activity; with an average of 39 hours per week dedicated to this activity. Sailors spent the longest hours working per week, reporting an average of 50hrs per week on the job. The average number of hours spent on respondents' main productive activities is highlighted below in Figure 4.

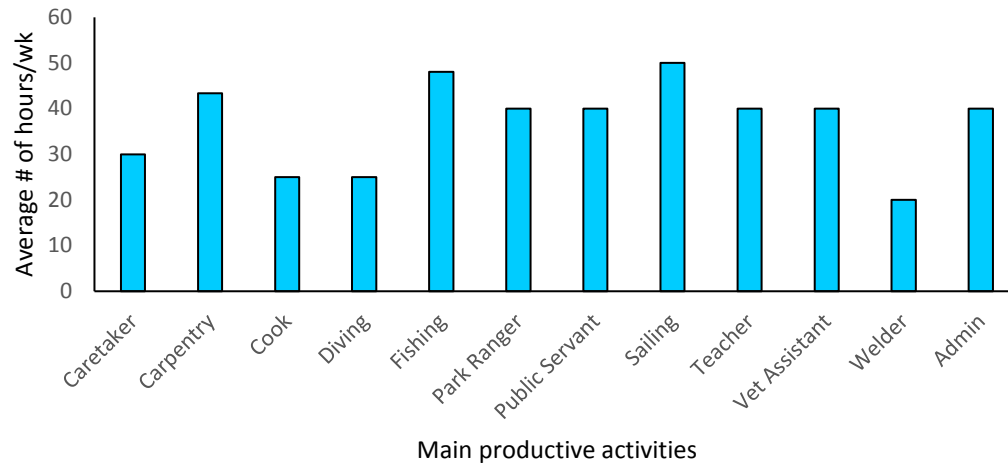


Figure 4: Average number of hours respondents in the Grenadine Bank spend on the main productive activities (weekly)

Fishing also dominated in the average number of hours spent on respondents’ second productive activity with an average of 27.5 hours working in this category. Fishing was the most popular occupation in all islands, especially in Carriacou, then Mayreau. None of the respondents from Union Island reported fishing as their main productive activity, instead, salaried jobs such as construction workers, coaches and teachers were recorded.

## Fishing practices

Fishing in the Grenadines remains largely artisanal. Almost 100% of respondents reported the use of lines and hooks as their main fishing gear. There was also mention of using diving tanks, spears and seine nets. There was also one mention of Fishing Aggregation Devices (FAD) fishing. Few respondents mentioned practicing sustainable fish harvesting methods, except for hook and line fishing and targeting adult fish specifically.

The use of fine mesh in fishing and the purchase of undersized lobster and fish were recognized as unsustainable practices by most respondents. Most persons (84%) across all communities were aware of the importance of the levels of marine resource consumption (see Table 7). They all identified ecological reasons for doing this, (“So that we can know how much fish is taken out”) and (“how to ease the pressure on some fish, sometimes”), as well as implications for their livelihood.

Table 7: Participants views on different conservation issues in the Grenadine Bank (n= 39)

Statement	Agree	Disagree
Catching female lobster with eggs will not lead affect catch the following year	37%	63%
Fine meshes are bad for fishing populations	79%	21%
Dive compressors are safe and will not harm the reef	39%	61%
It is important to have laws to protect fish / lobster / conch so that these animals are still here when our children grow up	84%	16%
It is important to know how much fish / lobster / conch is being caught	89%	11%

Awareness on the importance of conservation across all communities was high. Of the persons who responded to the question on the relevance of coral reefs, 100% of respondents agreed that they were essential for marine life (see Table 8). Similarly, more than 90 percent recognized the relationship



between healthy coral reefs, ecotourism and jobs in the community. However, there was some divergence in responses as only 50% of respondents thought that protecting reef environments was imperative to sustaining the longevity of their livelihoods. This may signify a knowledge gap on the part of the respondents' ability to link the importance of current conservation strategies to their economic benefit in the long term.

*Table 8: Participants views on conservation issues regarding coral reef ecosystems (n=41)*

Statement	Agree	Disagree
Coral reefs are important habitats for many species of marine life which fishers depend on for food and income	100%	0%
Protecting the reefs will not protect fishers' livelihood	50%	50%
Coral reefs protect shorelines from erosion by waves	97%	3%
Healthy coral reefs attract ecotourism and bring jobs to the community	89%	11%

89% of respondents agreed that having laws to protect fish was important. However, while respondents in Mayreau and Union Island accepted this statement, many in Carriacou were quick to clarify their "yes" response. They continuously pointed out while they agree that there must be laws, they are against laws that limit their ability to fish that had been made without their input and by foreigners pushing a conservationist agenda. More than one respondent cited the "natural law of a balance" between marine resource use and allowing the resource to regenerate which they claimed they already practiced. The respondents' opinion of a conservationist agenda at the expense of their livelihood was again mentioned in their responses to the question about resource depletion. Thirty-three (33) persons responded to the question whether "the fish can done"<sup>5</sup>, with 42% of them stating that fish stocks will never be depleted despite varying levels of resource use (see Table 9). The number of respondents answering "No" was highest in Carriacou. The "No" responses readily offered their knowledge of the resources of the area and careful use of resources as reasons for their answer. Most participants were aware of the closed season for lobster, with most disagreeing that one could fish lobster year-round. Respondents of Mayreau were most knowledgeable of the fishing regulations surrounding lobster harvesting, with 63% of respondents agreeing that extraction of a female with eggs would affect their catch the following year.

*Table 9: Participants views on fishing practices and seafood purchase/ consumption in the Grenadine Bank (N=47)*

Statement	Agree	Disagree
"It no matter how much fish / lobster / conch is being caught. It can't be done."	42%	58%
It is important not to eat lionfish because they keep the reef healthy	13%	87%
It is important not to eat parrotfish because they keep the reef healthy	58%	42%
It is irresponsible to buy undersized fish/lobster	87%	13%
There is nothing wrong with eating shark	87%	13%
Catching female lobster with eggs will not lead affect catch the following year	37%	63%
Fine meshes are bad for fishing populations	79%	21%
Dive compressors are safe and will not harm the reef	39%	61%
It is important to have laws to protect fish / lobster / conch so that these animals are still here when our children grow up	84%	16%
It is important to know how much fish / lobster / conch is being caught	89%	11%

The questions on parrotfish and lionfish were also met with some apprehension from respondents. 87% of respondents disagreed with the statement "it is important not to eat lionfish because they keep the reef healthy" (see Table 9) In Carriacou, all the respondents pointed out that they would not eat lionfish.

<sup>5</sup> Caribbean expression that means the fish supply can never be exhausted

There seems to be a community consensus on an aversion to the consumption of lionfish. When questioned further on their perception of lionfish consumption, many of the males remarked that it was an attempt to divert them from eating “good” fish. There was no recognition of the ecological significance of consuming lionfish. Many of the fishers remarked that prior to the present year they had not caught many lionfish from their regular harvesting grounds. Thirty-four (34) persons answered the question on the ecological role of the parrotfish, with 58% agreeing, “It is important not to eat parrotfish because they keep the reef healthy.” Again, many of the respondents from Carriacou stated that this was a leading question with a hidden agenda of getting them to stop consuming parrotfish in favor of lionfish. Many were passionate that despite recognizing the ecological roles of parrotfish, they would continue to consume it. They thought that parrotfish was a “good” fish for consumption. Shark consumption is high in all communities (87% saw nothing wrong with eating shark). Most respondents who were opposed to eating shark cited religious reasons (being Seventh-Day-Adventists) rather than recognizing the ecological significance of the family.

Twenty-four (24) persons responded to the question about the impact of diving compressors on reef health, with 61% of the respondents stating they were indeed harmful to the environment (see Table 9). Most respondents were also aware of the importance of regulations for the fishing industry, as 89% of respondents agreed that laws to protect marine species were integral in ensuring resource continuity for their children.

The consumption of doctor fish (56%), parrotfish (54%) and shark (54%) was high among surveyed respondents (Figure 6)). Members of the Carriacou community were passionate about eating parrotfish and sharks; stating that they would not stop consuming these two fish. The consumption of conch and lobster was tied at 59 %. In Mayreau, the consumption of sharks, lobster, parrotfish and sea turtle was less than Carriacou. Respondents seemed aware of some unsustainable practices; however, they remained unaffected. In Carriacou, many were quick to point out that they believe they can continue to use any resource of the sea “within reason” and that the resource would replenish itself.

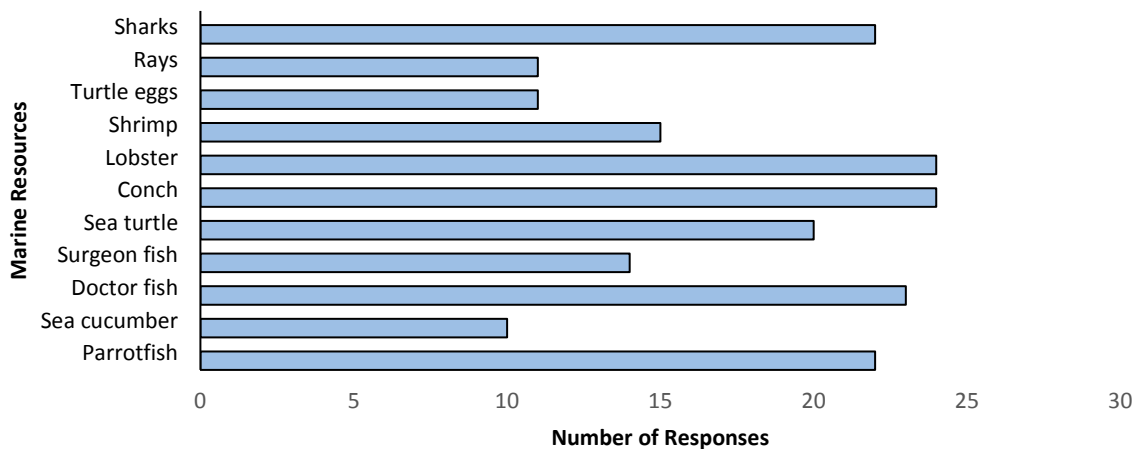


Figure 5: Main consumption of harvested seafood in the Grenadine Bank (N = 47)

## CMBP impact on income and preferred alternative livelihoods

In all communities, participants expressed interest in the possibility of alternative livelihoods, as they viewed this as a second source of income. “Water taxi” scored the highest interest for training in alternative livelihood options (Figure 7). This was most beneficial as it is an easy transition from fishing and very lucrative in the peak tourist season. A water taxi is a fishing vessel used to transport tourists and respondents between islands for snorkel tours, kayaking or scuba dive tours. Turtle monitoring also scored high among respondents, possibly indicating their interest in conservation and combating the high levels of reported consumption of respondents in the communities. Under the category of “access to new fishing gear,” training in GPS, Very High Frequency radio, and training in new fishing techniques scored highest. This is an indication of the participants’ interest in modernizing their operations. This augers well for the future of fisheries in the community. Women outnumber men only in their interest in craft production as an alternative occupation.

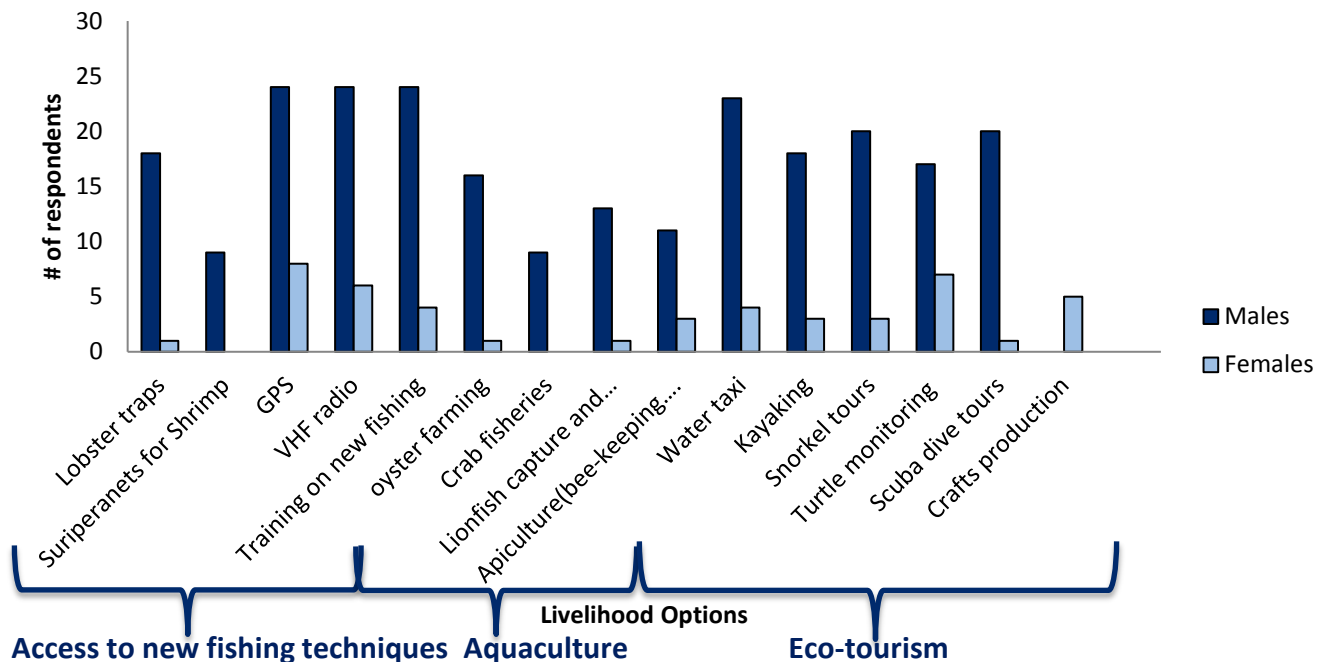


Figure 6: Responses to alternative livelihood option by gender from survey participants in the Grenadines (N=41)

The respondents in Carriacou were most interested in options that improved their fishing techniques (i.e., lobster traps, GPS, Very High Frequency radio and training on new fishing practices) or in ecotourism activities. Since Carriacou has a strong fishing and tourism economy, these options complement each other. Respondents of Mayreau were more inclined to adopt new fishing practices, access to technologies and aquaculture as alternative or secondary livelihoods. While Mayreau serves as a local stop for yachts, facilitating opportunities for eco-tourism and periodically a larger market for sale of fish. However, it also seems to be developing its local natural resource-based enterprises. For example, the community has a sea-moss project. They presently sell cultivated sea moss to the local market in Saint Vincent and regionally to the British Virgin Islands. They are also exploring processing of the sea moss into products, such as a sea moss beverage which is very popular in SVG and the Caribbean. Respondents of Union Island

were more inclined towards eco-tourism options (water taxis and lionfish capture and marketing) as alternative occupations due to a well-developed tourism industry.

Of the 47 people surveyed, 17 reported taking part in Caribbean Marine Biodiversity Program project activities, all from Carriacou. 53% of respondents perceived these activities as positive. None of the surveyed respondents expressed any negative perceptions of the project. The relatively low number of beneficiaries reporting taking part in the CMBP project may be the result of the high number of projects from various national and international funding bodies and initiatives occurring simultaneously, often being implemented by the same organizations and individuals. Some beneficiaries surveyed were unable to distinguish differences between projects by name; rather, they distinguished them by activities carried out.

### Community gender relations and perceptions

87% of persons agreed that “women are just as capable as men”, 89% replied positively to women having equal rights to men to earn a living, while 67% of participants responded negatively to “men are better qualified than women to take important decisions in the community” (see Figure 8)). These trends indicate that the societies in these different areas may be making a progressive move towards viewing women as equal to men, despite the relatively lower proportion of people thinking that women are less qualified than men as community decision makers. These views were also supported by participants in the focus groups, who expressed that there is now a high number of females involved in community organizations and Non-Governmental Organizations.

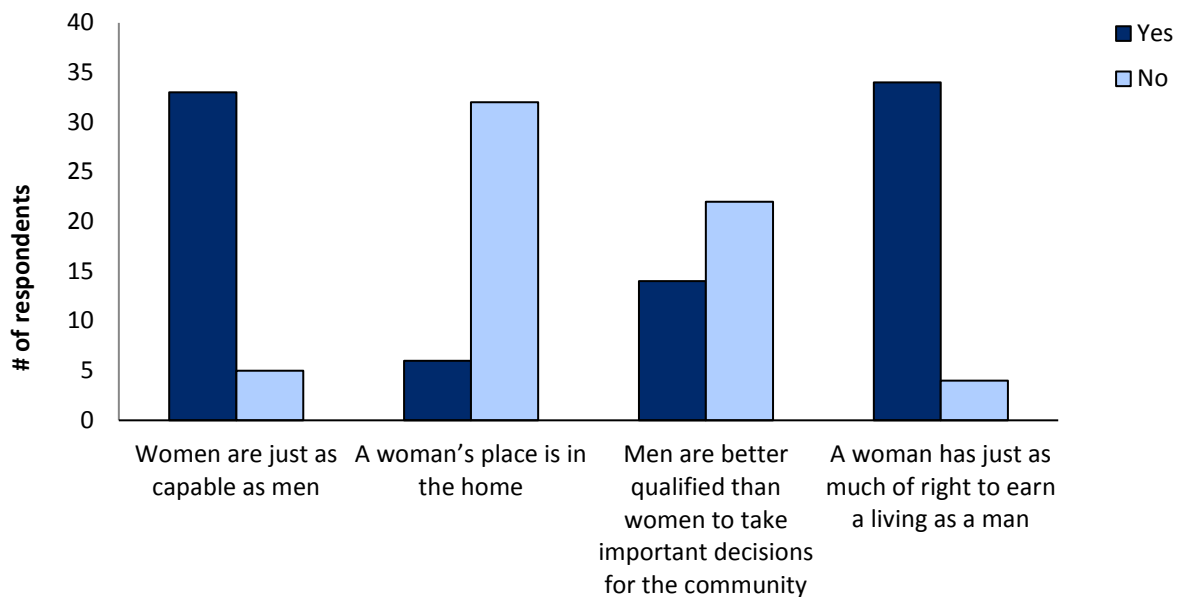


Figure 7: Statements on respondents' perception on gender in the Grenadine Bank (N=47)

A breakdown of the survey respondents by sex will show that fishing continues to be a male-dominated activity, with women playing marginal roles. Men continue to fish, market the catch and make the decisions as to how to spend profits. The few women who do fish are mainly from fishing families, who

are not discriminatory based on gender. The researcher was only able to conduct one focus group, as the scheduling of the community visits coincided with the winter or busy season. During this season, many men engage in tourist-related activities instead of fishing, such as operating water taxis or working as cooks on yachts to earn extra income. In addition, the women were busy with household tasks in preparation for the end of year celebrations; there was a wedding in Carriacou, which was attended by both men and women. In addition, stakeholder consultation fatigue was expressed by some people in Mayreau and Carriacou.

Although the focus group in Union Island included only male participants, the discussions yielded some useful information. This information was supplemented by individual interviews with women in the communities. In Mayreau, the head teacher and another school teacher were consulted. In Carriacou, the interviewees included the female warden in the Marine Protected Area (MPA), the wife of a 72-year-old fisherman, and the President of the Water Taxi Association.

When asked about labor division, it was evident men control all stages of the fisheries value chain with negligible inputs from women. Men go to sea on average approximately 6 hours per day beginning early in the morning. They return by mid-morning or noon. They then begin to market the fish caught. In the case of Carriacou, the fish is sold to the local fish market or taken to Grenada depending on the prices. The men then return to their respective homes with the money earned from the sale of the fish. All the fishers surveyed sold their catch themselves in Grenada. There is no indication of any established cooperation in this area.

Income earned from fishing is then distributed between the male and his spouse *“as the male sees fit”*. As one member of the focus group in Union Island commented: *“Long ago men would go out and fish, go drink rum and come home and beat their wives. The same thing still happens to a certain extent. The community is limited and you don't see that step outside of the norm.”* There are women who *“hang around”* fishers because they are in a relationship with a fisherman. However, their roles are mainly to assist with whatever activities the men are engaged, such as the cleaning of fish.

Spouses of fishers are usually at home taking care of the children and completing household tasks. If they are employed outside of the home, as many increasingly are, their productive activities are often completely unrelated to fishing or the fisheries sector. Common unrelated fishing activities include prepared food sales, catering on yachts and fresh market sales. In Carriacou, two (2) of the women surveyed were fishers. However, they both were from the same large traditional fishing family.

Most members of the focus group believed the fishing industry is still traditional and has not undergone much change in gender roles or technology. When this question was posed to the women interviewed, they said most of the women did not consider roles in fishing for many reasons. While the traditional gender roles played a part, they did not see it as a progressive industry that will become modernized soon. They also questioned the economics of the industry since many fishers are not necessarily financially stable, though this may be because of personal financial choices. The women said they prefer economic choices that were less risky. When questioned about supporting the men in, for example, the marketing of fish, they pointed out that the men are territorial and there is a stigma attached to *“fish market women”*<sup>6</sup>. It should be noted that women showed high interest in the alternative livelihood options and were more amenable to taking part in those. Therefore, the state of the fishing industry (lack of modernization and lack of post-harvest processing) and the stigma attached to women in the industry are

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<sup>6</sup> Female fishers in the Eastern Caribbean are stereotyped as being loud and obnoxious. The opposite of behaving in a lady-like manner.

major deterrents to women participation. As the wife of a 72-year-old fisherman pointed out, they perform mostly supportive roles in the home.

The gender relations in the Grenadines fisheries sector is not the norm in some other Caribbean countries. For example, Peña et al (2007) noted that women are involved in all stages of the value chain in Barbados. Women also dominate the post-harvesting processing in other countries. The low female participation in the Grenadines may be due to the lack of extensive post harvesting processing in the communities. Similar to other countries, women in the Grenadines are significant consumers of fish both in and outside the home.

### **Ownership / access to resources and decision making**

The male dominance in fishing operations translates to male dominance in the ownership of assets and access to resources and decision making. Men have ownership of boats, fishing gear and fisher technologies such as radios and GPSs. These assets are considered the men's assets, though in a few rare cases they may be considered as family assets. The economic activity is approached as an activity that the male takes part in, and that the family unit benefits from. As one of the participants noted: *"Ladies seldom have shared assets with fishers"*. Many of the assets that men have were acquired outside of, and in many cases, prior to their relationships with women. Many of the fishers claimed to have started fishing and water taxi operations at a very early age and therefore considered these assets to be theirs.

Women seldom have ownership of fishing-related assets, as they are minimally involved in the production process at any stage and seem to have scant interest in the harvesting and marketing activities. However, women have other assets in the economic activities in which they are more directly involved, such as small cook shops, market stalls and/or other micro-enterprises. Women surveyed did not express an interest in obtaining fishing-related assets. Men and women may have shared assets of house, land and other properties. These are usually considered family assets. Men and women, even as married couples, seldom have joint bank accounts.

The almost total separation of assets and the functioning of adults as separate economic entities has implications for alternative livelihood activities. Research indicates that small and micro-enterprises perform better when women are involved and performing a leading role (K'nife 2016). Women often identify these businesses as being "family-owned". Also, family-owned enterprises tend to perform better (Knife 2016).

Financial decisions tend to be jointly made, with all the interviewees suggesting that men and women divide the financial costs of the home either equally, or by ability to pay. This is becoming increasingly common as more women are working outside of the home. As noted by one focus group member: *"Financial decisions in the home is a discussion between both partners and the responsibilities just but across the board. Women will take responsibility of internet, telephone and men take responsibility for the food. The responsibility is shared across the board."* Another pointed out: *"A man will bring some of his income and give his wife for food for example, saying pay bills and hold this for yourself."*

Women, because of higher levels of education, are now more dominant in the service, sectors such as banks, tourism-related activities and the education sector. These jobs offer steady, stable monthly income as against the uncertainties and high risk of fishing. Some women are therefore gaining financial dominance in the home and are responsible for the larger part of the financial responsibility. They have also become the primary financial decision maker in many homes.

## Access to educational programs

In all communities, there are several educational programs in which men and women have equal access to. Participants in the Union Island focus group could identify environmental workshops and training conducted by agencies and non-governmental organizations such as CERMES of the UWI, Sustainable Grenadines, and The Nature Conservancy project activities.

In addition, there are educational programs conducted by the respective line ministries in both countries. In the case of SVG, it is the Ministry of Agriculture, Forestry, Fisheries, and Rural Transformation, and in the case of Grenada, Ministry of Agriculture, Lands, Forestry & Fisheries. Projects implemented by the government, international agencies and international Non-Governmental Organizations are a source of educational programs as well on various topics. These activities are accessed equally by men and women.

## Access to loans and credit

While there is limited access to credit in the communities, both men and women have access to formal banking institutions, namely credit unions and banks (international or local). However, fishers complain they do not qualify for actual loans without the required collateral. Credit unions are thought to be more accessible than banks.

Women in the Grenadines, contrary to the general trend of having lower access to credit (World Bank 2013), have reported having easier access to credit than men overall. This is because women are more likely to be in salaried jobs and are deemed to be more credit worthy by traditional financial institutions. However, in Grenada only men are the recipients of a government financial assistance facility to the fisheries sector (Baksh 2014), which explains the absence of women accessing credit in the fisheries sector.

None of the respondents were aware of any formal micro-financing institutions in Carriacou. In Union Island, one of the focus group members pointed out that micro-finance opportunities occasionally occurred when there were programs funded by international agencies for specific activities. There are micro-finance institutions, such as Caribbean Micofin and Axcel in Grenada and Micro-Finance Co-operative (COMFI) in Saint Vincent and the Grenadines<sup>7</sup>. The reasons for their lack of knowledge on formal local micro-financing institutions are not clear.

However, there is some informal access to credit through “sous” groups. These groups comprise 10-15 persons in the community who contribute the same amount of money monthly, weekly or fortnightly over a pre-determined time. One member takes the entire weekly or monthly sum and continues to contribute until each member has taken his or her turn. It is a means of small credit for some. There are several “sous” in Union Island. In nearly all the *“institutions that have workers you will find some sous running”* remarked one focus group member. The participants of the focus group were unable to say if there are any “sous” consisting of fisherfolk on that island.

Another possible source of finance and credit is international remittances. As one focal group member pointed out: *“Remittances are always part of us. A good part of our population has migrated to Canada, Europe. Remittances are always prevalent and present.”* However, this financing appears to be used more for consumption rather than asset building. As the member further noted: *“Remittances goes into*

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<sup>7</sup> <http://www.caribank.org/uploads/2014/11/2014-St.-Vincent-and-the-Grenadines-PSAR.pdf>

*consumable goods rather than asset building. A cousin may send 50 dollars; you don't get the quantity to go into asset building."*

### **Community participation and governance**

Women's decision making in the community seems to be on the rise. Both the focus group participants and informal interviewees commented that this was the case. While the focal group participants could not identify how this trend started, the women were quick to point out its genesis in women having greater access to education and other resources. As one member of the focal group stated: *"Women in churches, schools, NGOs, sports, culture, you name it, it just seems like women are all leaders and you wonder where did this transition start?"* Another pointed out: *"Women make most of the decisions in the community..."*.

Women are members of churches, non-governmental organizations including environmental NGOs, Lions Clubs and other service organizations. In Carriacou there is an arm of the Grenada National Women's Organization. There are also sports clubs and associations, netball and cricket being the two popular ones. In both countries, there are also local offices of the two major political parties in each island. Women are active in both political parties but are not visible at the leadership level.

Women's participation seems to be motivated by wanting to improve their communities as well as the quality of life for their families. This is especially the case with the non-governmental organizations. Their participation in churches and sports seems to be motivated by the need for spiritual and social interactions outside of the home. The churches also conduct welfare activities and general training as well.

Men participate in all the organizations in which women participate except for those that are gender-specific. Their participation is higher than women in sports organizations such as dominoes, cricket and football. Men's participation in sports and recreational organizations seems to be motivated by a need for socialization outside of the home. However, men are still the "community leaders" as they continue to dominate local formal politics and occupy those positions. According to the respondents, men make most of the decisions that have an impact on the distribution and the use of community resources as they are the local politicians.

Men seem to benefit more from the CMBP project activities. Men generally received training in the use of fishing equipment and fishing-related technology. It can be safely concluded that women will benefit indirectly as the impacts of the training reach the households. In addition, though few women were surveyed, their interest in alternative livelihood activities is high. If the alternative activities were to be implemented, the number of women benefiting from the project activities will increase.



## Haiti Seascape

Surveys were carried out in the communities of Caracol, Derac, Phaeton, Fort Liberte and Derac.

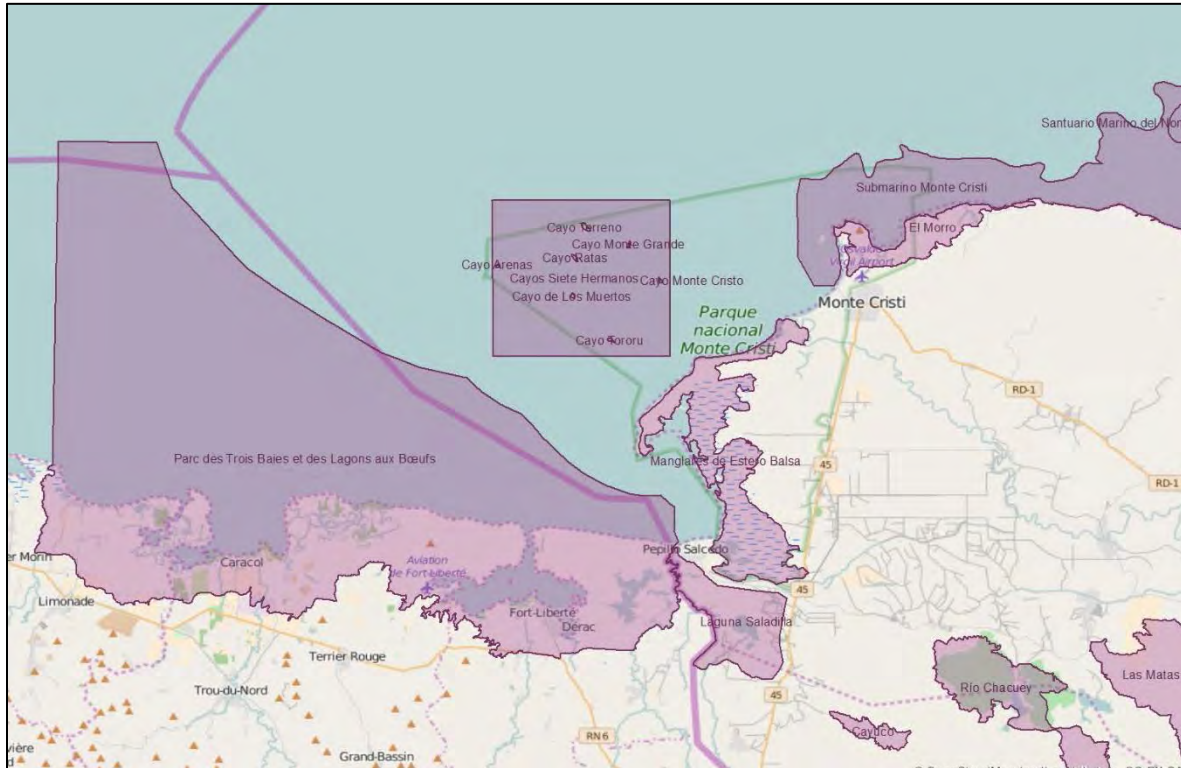


Figure 8: Map of northern Haiti showing target seascape and corresponding communities in which CMBP activities are being implemented

### Respondents characteristics

Of the 215-people interviewed, 120 (55.8%) were male and 95 were female (44.2%). Table 11 shows the distribution of the respondents by community. Jacquesyl and Caracol are the coastal areas where most of the respondents live.

Table 10: Number of respondents per location in Haiti (N=215)

Location/Seascape	Number of respondents		
	Total	Male	Female
Caracol	55	35	20
Derac	29	15	14
Jacquesyl	64	24	40
Limonade	31	22	9
Madras	36	24	12
<b>Total</b>	<b>215</b>	<b>120</b>	<b>95</b>

More than half of the main providers of household income are between 25 and 44 years old. The main productive activities of respondents are: fishing (46.9%), small trade (34.8%), agriculture (5.4%) and others (14.2%) (see Table 12).

On average, people spend 43.4 hours per week on their main productive activity. While women also supplement the household income, men still tend to be the main income providers (80.7%) for their family’s livelihood. In addition, only 21% respondents answered to having a secondary productive activity. People mentioned engaging in small-scale agriculture and farming, small trade, and other manual jobs and liberal professions such as teaching, and masonry.

*Table 11: Distribution of respondents by main productive activity in northern Haiti (N=215)*

Main productive activity	%	Average number of hour spent per week
Fishing	46.9	43.48
Agriculture	5.3	
Apiculture	1.4	
Commerce	34.8	
None	1.0	
Other	11.6	
NR (in number)	8	

80.7% of the heads of households are men, compared to only 19.3% for women.

## Fishing practices

Although a high proportion of respondents (70.8%) believe it is important to protect Haiti’s fish stocks, there are many (81.8%) (see Table 13) who think local stocks are inexhaustible. In addition, 58% believe the use of dive compressors will not have any negative impacts on the reefs. However, they believe certain regulations are necessary, such as protecting the lobster and fishes for motherhood needs, and agree there is a need to produce reports on the rate of exploitation of marine species such as the lobster and certain species of fish.

*Table 12: Participants' knowledge about fishing gear usage and management in the Grenadine Bank*

Statements	#	% of “agree”	Total resp.
Very fine meshes are not good for the fishing population	136	70.8	<b>192</b>
Using dive compressors will not lead to harm to the reef	105	58.0	<b>181</b>
It’s important to have laws to protect the lobster/fish so that they are still alive to feed their juveniles	195	98.0	<b>199</b>
It’s important that the number of harvested lobster/fishes be known	189	95.5	<b>198</b>
Fishes will not be over no matter how many fishes are caught	162	81.8	<b>198</b>

A significant percentage of fishers reported using gear identified as “unsustainable”. The bottom trawl net (55.4%) and the small mesh gillnet (45.9%) were the most commonly used gears. Responses to statements on fish consumption were incongruent to responses regarding sustainable fishing practices and management. A high percentage of respondents seem to understand the importance of protecting juvenile fishes. For the lionfish and parrotfish, more than a half of the respondents agreed that the consumption of such species should be avoided. From this, it can be inferred that respondents were generally unaware of the threat that the lionfish poses to the Caribbean reef ecosystem. Additionally, most respondents (86%) had agreed that shark consumption was not bad, indicating their lack of knowledge on the state of the predator population.

<sup>8</sup> This data is calculated on a total of 159 respondents who provide accurate information for this question.

When asked about conservation, most respondents associated coral conservation with maintaining vital ecosystem services, such as protecting habitats and shorelines and attracting ecotourism. However, more than half of respondents (54%) agreed with the statement that protecting the reefs will not protect fishers' livelihoods at all (see Table 14).

*Table 13: Participants' knowledge on coral conservation in Haiti (n=200)*

<b>Participants' knowledge about coral conservation</b>	<b>#</b>	<b>% of "agree"</b>	<b>Total resp.</b>
Coral reefs protect our shorelines and are important habitats for many species of marine lives that fishers depend on for food and income.	195	98.0	<b>199</b>
Protecting the reefs will not protect fishers' livelihood at all	108	54.0	<b>200</b>
Coral protecting shorelines against wave activities	195	97.5	<b>200</b>
Healthy coral reefs attract ecotourism and bring jobs to the community	194	97.0	<b>200</b>

The importance of mangroves seems to be well known among members of fishing associations. Almost all the respondents agreed that the mangroves protect the shoreline, act as nursery for juvenile fishes and help secure fishing as a sustainable livelihood opportunity. The environmental advantages that the mangroves provide in terms of preventing storm surges and hurricane as well as their capacity to prevent land erosion, are well recognized by all the respondents. However, a low percentage of respondents (15.5%) believes that cutting mangroves for charcoal will not have any long-term impact on the forest and/or the fishing yields (see Table 15).

*Table 14: Participants' knowledge on mangrove conservation in Haiti (n=207)*

<b>Participants' knowledge about mangrove conservation</b>	<b>#</b>	<b>% of "agree"</b>	<b>Total resp.</b>
Mangroves protect the shoreline, act as nursery for juvenile fishes and help to secure fishing as a sustainable livelihood opportunity.	206	99.5	<b>207</b>
Maintaining healthy mangroves will protect our coastal communities against storm surges and hurricanes	207	100.0	<b>207</b>
Mangroves prevent land erosion from degrading the reefs	191	94.1	<b>203</b>
Cutting mangroves for charcoal will not have any long-term impact on the forest / fishing yields	32	15.5	<b>206</b>

## CMBP impact on income and preferred alternative livelihoods

74.4% of respondents report they have participated or are currently participating in the CMBP activities (65.6% males and 34.4% females). Participants were almost unanimous in their feedback on CMBP activities being positive for themselves and their families regardless of sex and type of activities in which they were engaged. Explanatory factors regarding the perceived importance of these activities cover a wide range of reasons, including environmental awareness and protection, institutional strengthening, and alternative livelihoods options.

A high percentage (82.5%) of participants in overall CMBP activities report a positive change in their income as a result of the program, and this percentage was even higher (90%) for participants in mangrove reforestation activities. However, what respondents may have considered as an "increase in income" may be related to the stipend they received each time they participated in a CMBP activity. This allowance was provided to participants to facilitate their transportation to training sites. Activities such as mangrove reforestation were not planned to generate alternative income. There is a strong likelihood that the high percentage of people reporting an increase in income may be related to how respondents perceived the purpose of the transportation allowance. Additionally, people living in such vulnerable areas tend to

respond to research sponsored by humanitarian organizations (e.g. NGOs) in a way they think may correspond to the organization’s interests/higher level outcomes so their chances of gaining possible upcoming benefits are increased.

Men and women welcome all type of income generating activities that may come from FoProBiM initiatives. Women show interest in starting small businesses, such as selling basic commodities and foods. Men, on the other hand, request financial and material support for their current productive activities such as fishing. Women in fishing also express the need for modern and sustainable fish conservation tools. While women are willing to use alternative sources of energy for cooking, they consider these options as unaffordable. *“We know that those improved stoves exist and we want to use them. If we have to buy them, we cannot because we don’t have money.”* (women, Limonade)

All the survey respondents were asked whether they would be interested in the proposed income - generating activities below (see Table 16), with most participants being partial to accessing new fishing gear, apiculture and mangrove restoration as alternative livelihood options. Men were more interested than women in alternative livelihood options. The top four activities for males were gear exchange, fish sanctuary management and eco-tourism activities (kayaking and scuba dive tours). The top three activities for females were training on new fishing practices, craft production and plastic collection and recycling.

*Table 15: Preference for alternative livelihood options among respondents of communities in Northern Haiti (N=215)*

Alternative Livelihoods Options Preferences	% of respondents who say “yes”		
	Total	Male	Female
<b>Access to new fishing gear / fishing gear exchange</b>			
Suripera net for shrimp fishing	169	56%	44%
GPS	187	56%	44%
VHF radio	170	57%	43%
Exchange small mesh with large mesh size	182	60%	40%
Training on new fishing practices	164	55%	45%
<b>Aquaculture</b>			
Oyster farming	161	57%	43%
Tilapia	144	57%	43%
Seamoss farming	163	58%	42%
Fish sanctuary management	166	60%	40%
Apiculture (bee-keeping and honey production) X	180	56%	44%
<b>Eco-tourism</b>			
Kayaking	149	60%	40%
Scuba dive tours	156	61%	39%
Crafts production	173	55%	45%
Green charcoal manufacturing	171	57%	43%
Plastic collection and recycling	173	55%	45%
Mangrove restoration (nursery and mangrove planting)	200	57%	43%

## Community gender relations and perceptions

Men and women in these communities do not always see eye-to-eye when it comes to gender roles in society. Fifty percent of females vs. 35.6% of males agree that men and women can perform the same type of job (see Table 17). Only 20% of both males and females agree that women should stay at home. A high percentage of female respondents agree that men are better decision makers than women for their communities. While most respondents agreed that both men and women have equal rights to work (87%), more females (91%) believed this statement to be true compared to males (84%).

Table 16: Participants' perceptions towards gender roles in society, Northern Haiti (N=215)

Participants' Perception towards women	#	% of "agree"	% of "agree" by sex		Total resp.
			Male	Female	
Women can do the same type of work as men	85	40.7	35.6	50.0	209
Women should stay at home	42	20.1	23.9	13.3	209
Men are more qualified than women to make decision that can affect the people's lives in their communities.	145	69.7	72.4	64.9	208
Women and men have equal right to work	181	86.6	84.3	90.7	209

## Gender roles in fishing and access to assets

Men and women play different roles in the fishing value chain in the targeted coastal areas. While men are involved at different stages of the fishing process, women only participate at specific stages, based on a traditional perspective of the feminine gender role. Capturing fish in coastal areas and deep-sea waters is almost always the male's domain. Men use different fishing practices such as diving, spearfishing<sup>9</sup> and fishing nets. Men also make fishing instruments using a wide range of traditional materials, such as nets, boats, compressors, Z traps, lamps, coral necklaces, ropes, plumb lines, underwater fishing harpoon gun and small mesh beach seines. Women's most prominent roles in this industry is in the post-harvest processing and marketing stages. A few women practice shrimping in shallow, mangrove areas. They occasionally also contribute to the acquisition of some fishing materials such as the seine in the fishing household: *"women buy seine and give it to the men to go fishing"* (Women, Caracol).

Fishing is practiced year-round and, in some communities, mainly at night. Fishers avoid fishing under bad weather conditions such as heavy rains and hurricanes. Both males and females also engaged in secondary livelihood activities such as the production of charcoal, salt, agriculture and farming. Women participated essentially in what were considered the lighter duties, such harvesting and trading crops and charcoal.

*"We, men, we are at all the different stages in the fishing process"*

*"In fishing sector, women intervene mostly in fish trading"*

*"It's obligatory for the men to do the fishing, the women sell the fishes"* (Women, Caracol)

## Access to credit

In the targeted coastal areas, there is low access to formal credit. While a few microfinance institutions (MFIs) exist, financial services such as loans are difficult to obtain and sometimes very costly, as reported by both sexes. Men and women stated that they have obtained loans from MFIs such as Fonkoze, Finca, Esperance, under very inflexible conditions. Respondents objected to penalties whenever they were late in the repayment of loans. However, men report that women are more likely to obtain loans from MFIs because women usually comply with the loan's terms of conditions, meaning they pay it on time and in full. Thus, to increase their chances to obtain loans from MFIs, men sometimes are grouped into women's associations. Due to the number of constraints from the formal credit institutions, people have developed other strategies to finance their income generating activities. Forming a consortium<sup>10</sup> is a very widespread

<sup>9</sup> Fishers also use a sort of traditional fishing gun, which looks like an arrow, with which they capture some species of fishes, according to the focus group participants

<sup>10</sup> A group of people bring the same amount of money and lend it to one of the group members on regular basis (usually monthly) until all participants have their share. It is practiced between friends based on mutual trust.

practice, especially among women. They are also grouped into a "Savings and Internal Lending" community structure which is an alternative option to burdensome institutional loans.

*"They don't give loan to all category of people, when they do, it's like breathtaking..." -- "We usually do consortium between us, (women, Jacquesyl)*

*"To obtain loan, men need to have ownership title, patent, house...we don't have all that (Men, Jacquesyl)*

### **Association membership**

It is a widespread practice that men and women participate in associations. However, men seem to be more active in the associations than women, who tend not to attend or participate in meetings as regularly as men due to their role as housekeepers; they also work to supplement the household income. In the coastal areas, associations are mostly fishing groups that meet on a weekly or fortnightly basis.

*"Women also participated sometimes in the association...this is for the good cause" (Derac, women)*

### **Decision making**

Some traditional views still characterize the role each gender plays in the household and their community regarding decision making. Women are more likely to take on nurturing roles while men occupy the leadership roles. Women are delegated to the housekeeper role making sure that the house is well maintained, cooking and taking care of children. They do not only play significant domestic roles but also take initiative in their community when it comes to cleaning tasks. *"Women execute the cleaning campaign especially for the community patron feast" (personal communication, men, Derac)*. Men, on the other hand, seem to continue to make important family decisions as they are financially responsible for the family survival. In their community, men ensure, among others, security and the protection of natural resources. *Men organize community watch groups to prevent people from cutting the mangroves."*

### *Access to Education*

Both men and women benefit from education and training programs in some of these coastal, targeted communities. Both men and women participate in a variety of trainings on different themes of marine biodiversity such as mangrove restoration, protection of reefs and sustainable fishing practices. In addition, women stated that they had participated in trainings on family planning and small business management. *"When there's training on the protection of the environment, we also participated."* (Madras, women)

## Jamaica Seascape

The Jamaica seascape is composed of Bluefields Bay in the southwest coast of mainland Jamaica, and the South West Cay Special Fishery Conservation Area in Pedro Bank. In Pedro Bank, there aren't formal communities, but a settlement in Middle Cay, in which fishers live while fishing at Pedro for several days on a row. The figure below shows the southwest coast of mainland Jamaica and communities surrounding Bluefields Bay Special Fishery Conservation Area.

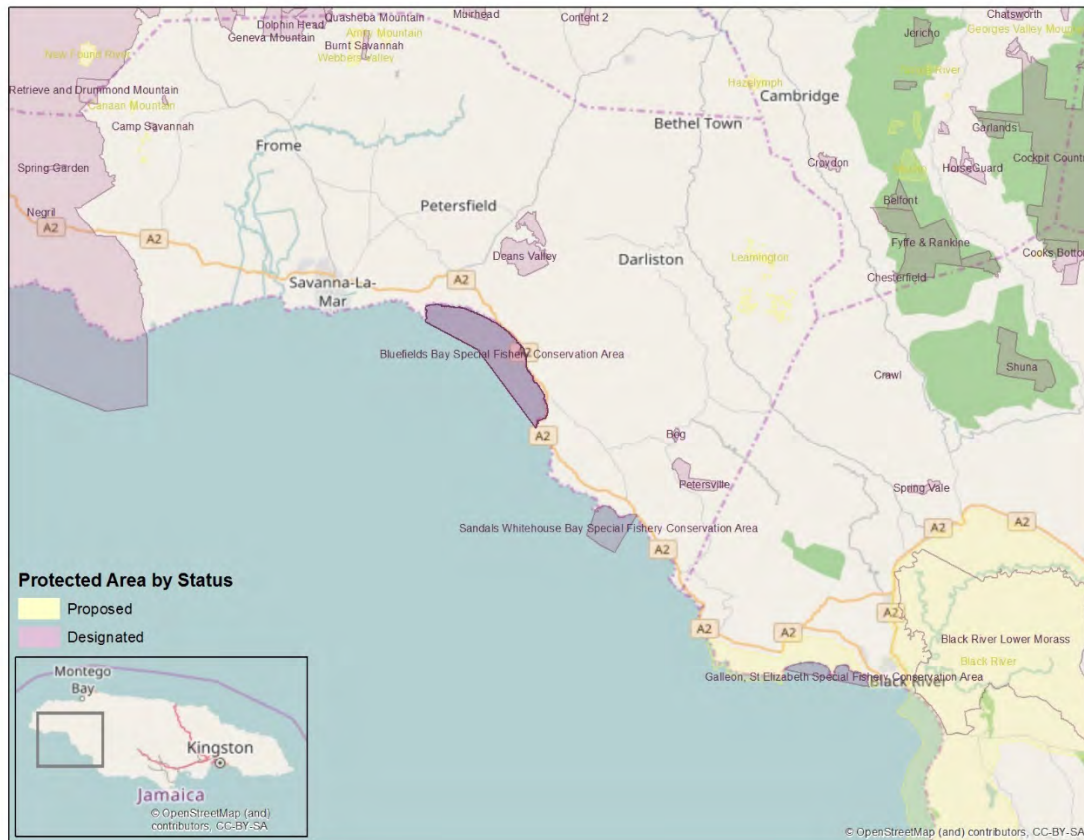


Figure 9: Map of Bluefields Bay Special Fishery Conservation Area in southwest coast of mainland Jamaica.

## Respondents characteristics

Approximately half of all survey participants (142 people) were from the coastal communities of 'Pedro Cays' (52%), followed by 'Bluefields' (32%), 'Galleon' (9%) and 'Treasure Beach' (8%). Across communities, most participants were male (sample comprised of 80% males versus 20% females), except in Treasure Beach, where all respondents were women. The participants in the survey for Treasure Beach do not reflect the population composition of the area; rather, only members of the Treasure Beach Women's Association were interviewed. The disparity in proportion of males to females was especially prevalent in Pedro Cays, where only 4% of surveyed participants were females (see Figure 11). This reflects the reality of the transient population in Pedro (Middle Cay) where fishers go to fish for a certain period and then return to mainland Jamaica. Most females on the Pedro Cays operate as proprietors of small retail outlets.



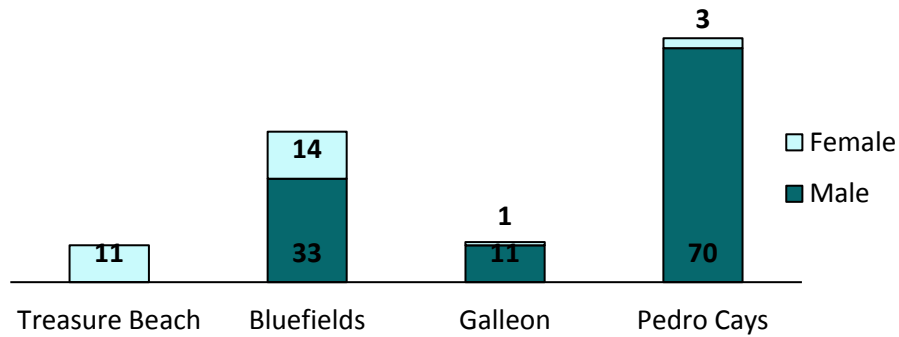


Figure 11: Gender distribution of participants across 4 locations surveyed in the southwest region of Jamaica and Pedro Cays, Jamaica (N=142)

Most respondents were not members of any community groups/ associations. The ‘Bluefields Bay Fishermen’s Friendly Society’ (12%), ‘Pedro Bank Fishers Group’<sup>11</sup> (12%) and ‘Treasure Beach Women’s Group’ (7%) were among the most frequently identified. Additionally, most unattached respondents were primarily from Pedro Cays.

The average age of participants was forty-three (43), while participants ranged from 19-74 years old. The main income generating activities reported by participants revolved around fishing across all age groups (except >65years). A total of 84 people were involved in fishing-related activities, most of whom were males. 32% of them fell within the 45-54 age group. Various specific activities included harvesting or the sale of seafood and fish sanctuary management, with an average of 45 hours per week spent on these activities. The second most popular category of main productive activity was farming, with an average of 34 hours per week spent on this activity. Overall, most persons reported spending approximately forty hours per week on their primary productive activity. Jobs classified as “Other” included shop keeping, teaching and boat repairs.

Men were the primary providers of income in 81% of the households. However, within the subset of females interviewed, 23 of 28 (82%) women were their households’ primary providers, with occupations varying from domestic helpers, tour guides and craft production.

Most respondents spent approximately twelve hours per week on their second productive activity. Additionally, approximately 27% of respondents were found to have two or more productive activities. The top ranked activities identified by participants for their second productive activities were Fish Sanctuary Management (8), Fishing (7), Farming (5) and Bee Farming (5). Approximately eight hours per week were spent on participants’ third productive activities. Only 5 respondents reported having a third means of income. The top three activities identified by participants for their third productive activities were Farming (2), Bee keeping (2) and Chef (1). On average, respondents typically had approximately two dependents per household, while one dependent was the most frequent response.

## Fishing practices

Among the main sustainable fishing practices identified, ‘targeting adult fish’ and the use of ‘hook and line fishing’ were the most popular across regions (see Table 18). Approximately one third of fishers from

<sup>11</sup> Many fisherfolk complained about contributing monies to join the Pedro Bank Fishers Group. However, the association is now dormant, with fishers requesting refunds of their contributions.



Pedro Cays (26%) and the Southwest coast (31%) indicated that they practice ‘hook and line fishing’. However, more fisherfolk from Pedro Cays (30%) indicated that they practice ‘targeting adult fish’ compared to their counterparts from Southwest coast (17%). It is likely that more fishers in Pedro Cays report targeting adult fish due to the significantly higher abundance of adults existing on Pedro Banks compared to the population composition of mainland reefs of Jamaica (Fisheries Officer, *pers. comm.*)

Table 17: Sustainable fishing practices employed by participants in the Southwest Coast and Pedro Cays, Jamaica (n=131)

#	Sustainable practices	Southwest Coast		Pedro	
		N	%	N	%
1	Targeting adult fish	10	17%	22	30%
2	Targeting large lobster	4	7%	14	19%
3	Fishing for lobster only during open season	2	3%	4	5%
4	Keeping a log book (of fish catch)	1	2%	1	1%
5	Hook and line fishing	18	31%	19	26%
6	Hand picking crab	1	2%	2	3%
Total Sample Size		58		73	

Only 25% of respondents mentioned primarily using sustainable fishing gear. The most popular gear used were Z-traps with large mesh and diving without compressor (see Table 19). The responses for the two gear types varied per locality, with participants from the Southwest Coast reporting ‘diving without a compressor’ (9%) as the most commonly used gear and fishers in the Pedro Bank reporting ‘traps with large mesh’ (21%) as the most common gear<sup>12</sup>. Diving without a compressor is commonly practiced in the Southwest Coast due to the lack of access to compressors and other essential fishing equipment (boats, traps). Using a mesh with a large size for traps was more commonly practiced in the Pedro Bank due to compliance with local fishing regulations and the larger fish size compared to the size of fishes on mainland reefs (Fisheries Officer, *pers comm.*).

Table 18: Sustainable fishing gear used by fisherfolk on the Southwest Coast and Pedro Bank, Jamaica (n=33)

#	Sustainable gear	# of respondents
1	Large mesh gill or trammel nets	5
2	Large mesh cast nets	3
3	Traps with large mesh	17
4	Diving without compressor	11

Most participants from both regions were cognizant of the importance of corals and mangroves both for ecosystem services, tourism and their livelihoods in the long term. Respondents also agreed on the importance of these systems for the development of different ontogenetic stages of marine species and consequently regeneration of local fish stocks (see Table 20).

Table 19: Participants’ knowledge of statements regarding coral reef conservation from the Southwest Coast and Pedro Bank (N=142)

Statements regarding coral reef conservation	Southwest Coast			Pedro Bank		
	n	% agree	Agree	n	%	Agree
Coral reefs are important habitats for many species of marine life which fishers depend on for food and income.	68	100%	68	72	100%	72
Protecting the reefs will not protect fishers’ livelihood	66	45%	30	69	38%	26
Coral reefs protect shorelines from erosion by waves	102	65%	66	113	62%	70
Healthy coral reefs attract ecotourism and bring jobs to the community	103	65%	67	101	57%	58

Statements regarding mangrove conservation	Southwest Coast			Pedro Bank		
	n	% agree	Agree	n	%	Agree
Mangroves protect the shoreline, act as nursery for juvenile fishes and help to secure fishing as a sustainable livelihood opportunity.	67	100%	67	64	100%	64
Maintaining healthy mangroves will protect our coastal communities against storm surges and hurricanes	68	100%	68	53	98%	52
Mangroves prevent land erosion from degrading the reefs	68	96%	65	57	93%	53
Cutting mangroves for charcoal will not have a long-term impact on fishing catches	67	30%	20	48	25%	12

Many respondents were also aware of common unsustainable fishing practices and agreed that these methods were not suitable to foster a healthy marine ecosystem in the long term (see Table 21). On average, in both regions, approximately 87% of participants disagreed with those unsustainable practices regarding lobsters, i.e. fishing lobster year-round and harvesting females with eggs. This high level of awareness could be attributed to the ongoing awareness campaigns run by relevant organizations specifically for the Jamaican lobster fishery both on the mainland and with fishers at Pedro Bank.

Table 20: Participants' knowledge of key local fishing practices from Southwest Coast and Pedro Cays (n=141)

Statements regarding local fishing practices	Southwest Coast			Pedro Bank		
	n	% agree	Agree	n	%	Agree
You can fish lobster year-round	68	10%	7	69	12%	8
Harvesting sea turtles can harm tourism activities to the area	64	78%	50	53	74%	39
Catching female lobster with eggs will not affect catch the following year	67	10%	7	74	19%	14

Participants' opinions regarding conservation of marine environments and local practices were underscored by their general responses to statements regarding local fishing gears and management. Most were aware of the dangers of using unsustainable fishing gear, such as fine mesh, and admitted to the importance of having and upholding regulations on the fishing industry. Many mentioned the reason for valuing marine resources was "so that they are here when our children grow up". Responses differ, however, on the safety of 'dive compressors'. Almost twice as many people from Pedro Cays agreed that 'dive compressors are safe and will not harm the reef', compared to their counterparts from the Southwest Coast. This is possibly due to wider use of compressors on Pedro Bank compared to the Southwest Coast.

Despite the high percentage of respondents with some level of awareness of marine conservation issues and solutions (70%), responses regarding harvesting and fish stock stability varied somewhat from these general trends, indicating a gap in knowledge of respondents on the possibility of a collapsed fishery. Slightly over a third of respondents (38%) believed fish/conch/lobster stocks were inexhaustible, despite the rate of harvesting.

Most respondents from both regions believed that it was important to 'eat lion fish' (to help keep the reef healthy) and that 'It is irresponsible to buy undersized fish / lobster' (see Table 22). Responses, however, diverged between regions regarding parrotfish consumption and its impact on coral reefs. Over twice as many respondents in the Southwest Coast (45 or 67%) agreed that it is 'important not to eat parrot fish' compared to respondents from Pedro Cays (19 or 53%). Respondents in the Southwest Coast were likely to have had more exposure to various educational and awareness raising activities sponsored by local NGOs, community associations (e.g. BBFFS) and groups from University of the West Indies (UWI) regarding the role and importance of parrotfish to reef fisheries, compared to fishers at Pedro Bank (Bluefields respondents, pers. comm.). In view of their remote location and distance from the mainland, respondents on Pedro Bank have less access to the amenities and resources than people on the Southwest Coast.

Table 21: Respondents' knowledge of key conservation issues in the Southwest Coast and Pedro Bank, Jamaica (N=142)

Statement	Southwest Coast			Pedro Bank		
	n	% agree	Agree	n	%	Agree
It is important not to eat lionfish because they keep the reef healthy.	62	32%	20	55	24%	13
It is important not to eat parrotfish because they keep the reef healthy.	62	73%	45	36	53%	19
It is irresponsible to buy undersized fish / lobster.	65	86%	56	55	84%	46
There is nothing wrong with eating shark.	63	44%	28	91	62%	56

## CMBP impact on income and preferred alternative livelihoods

Approximately one in every ten respondents participated in CMBP activities (8%). Further, all respondents who participated in CMBP perceived their participation as being positive for themselves and/or their families, either because of financial or educational benefits. The low number of participants in CMBP activities is due to the delay in starting up activities in Pedro Bay and Southwest Coast.

Participants in CMBP activities indicated that they benefitted from them. However, only three persons were deemed direct beneficiaries of the project. They were Craft Producers who had received skills development and support, which directly contributed to their increased income (i.e., those involved in craft production). Wardens/Fish sanctuary managers were classified as partners in the project, as their work was compensated by CMBP.

Table 22: Number of respondents from the Seascope having participated in CMBP activities (n=11)

Activity	# of people
Craft Production & Printing	3
Warden / Fish Sanctuary Management	8

Men's interest was highest in activities that would modernize and enhance their fishing operations, such as receiving a 'GPS' and an 'Ice chest' (see Table 24). With these activities, participants would see economic benefits in the short term, as these activities help improve navigational skills and reduce spoilage and waste of the catch. Women were least interested in fishing gears, and more interested in eco-tourism activities. Predictably, far more men were interested in 'training on new fishing practices'. Men are typically the ones fishing, as stated earlier, compared to women.

As it relates to aquaculture, 'oyster farming' was the least popular option among males and females, whereas only males indicated some level of interest in this activity. Although a larger proportion of males indicated an interest in 'fish sanctuary management', this was the second most prominent alternative livelihood option among females overall.

In relation to alternative income generating activities, in Treasure Beach most of the participants were retirees and volunteer their time to the organization. As such, they indicated that more training opportunities to improve their craft production skills would be beneficial. They also highlighted the need for assistance with marketing their products. In Bluefields women were mostly interested in animal rearing, bee farming training, agriculture, protection of marine resources and the establishment of a day care/ homework center to help support mothers. As mentioned above, men were interested in modernizing their fishing operations along with starting up eco-tourism activities, such as scuba diving and snorkeling as possible alternative or supplemental occupations.

Table 23: Possible preferred alternative livelihoods or sustainable fishing options preferred by participants in the Southwest Coast and Pedro Bank (N=142)

Future activities / livelihood options	Male		Female	
	%	n	%	n
Access to new fishing gear / fishing gear exchange				
GPS	54%	62	11%	3
Ice Chest	40%	46	4%	1
Training on new fishing practices	27%	31	11%	3
Aquaculture				
Oyster Farming	18%	20	0%	0
Lionfish capture and marketing	27%	31	11%	3
Fish sanctuary management	32%	36	18%	5
Eco-tourism				
Snorkel tours	24%	27	7%	2
Turtle monitoring	20%	23	18%	5
Scuba dive tours	28%	32	4%	1
Crafts production	4%	5	32%	9
Recreational fishing	10%	11	11%	9
Coral gardening	18%	21	7%	2
Other	12%	14	4%	1

Significantly more females were interested in eco-tourism activities, compared to other options. ‘Craft production’ was chosen as the preferred alternative means of income for females compared to males. Males tended to show far more interest snorkel and scuba dive tours. Of note, equal proportions of males and females expressed interest in ‘turtle monitoring’ and ‘recreational fishing’.

## Community gender relations and perceptions

As it relates to gender relations, most respondents agreed that women were just as capable as men (76.6%) and had an equal right to earn a living (95.6%) (see Table 25). About one-third of participants believed that a ‘woman’s place is in the home’ and that men were ‘better qualified than women to make important decisions for the community’.

Table 24: Participants' knowledge regarding gender relations within two regions, the Southwest Coast and Pedro Bank, Jamaica (n=141)

Statements	Southwest Coast			Pedro Bank		
	n	% agree	Agree	n	%	Agree
Women are just as capable as men.	68	84%	57	62	82%	51
A woman’s place is in the home.	67	39%	26	66	38%	25
Men are better qualified than women to take important decisions for the community.	67	27%	18	78	37%	29
A woman has just as much of right to earn a living as a man.	68	96%	65	71	96%	68

In Bluefields, both women and men were members of the Bluefields Bay Fishermen Friendly Society. However, it was highlighted that members joined the Society primarily for access to gainful employment, and many of them do not regularly attend general meetings. While the chairman of the organization is a man; females hold seats on the executive board. The Westmoreland Organic Farmers Society assists both male and female farmers in Bluefields with grant funding and training. The women in this group sell the fruits and make jam which is sold in the local market or at community events.

The Bluefields Peoples Community Association also consists of both men and women. Under this Association, “Cotta Craft” provides income and opportunities for women in the community. There are currently four women actively involved in craft production. Men in the community also have leading roles in the church as deacons and pastors. The Treasure Beach Women’s Group meetings are regularly attended by its members. Community fundraising activities are planned by the group such as annual Bingo parties, breast cancer walkathons, medical programs and beach clean-ups<sup>13</sup>. Women in Treasure Beach are active members of their church, and some are members of the Treasure Beach Cluster which assists business owners in the community.

### **Regular labor division and responsibilities among men and women**

Women from all survey sites reported that household chores were among their main responsibilities, while most men spent most of their productive hours fishing at sea - their primary source of income. Further, some men were involved in other business activities such as mechanics, tour operation and shop ownership. In Bluefields and Pedro Cays, some women frequently accompanied their male counterparts to sea on fishing trips, aiding primarily with weighing the amount of fish caught. However, most women were directly involved with the general distribution (buying & selling) of the catch than fishing for themselves. Participants from Pedro Cays, Bluefields and Galleon explained that women were integral in the sale of the fish in the market. This is particularly the case on the mainland where women would purchase from fishers upon arrival to shore and transport the fish to be sold in the market. The spouses of the fishers are also the persons responsible for getting the fishers ready for work in the morning by preparing their meals.

Men were typically the ones who prepared the boats for sea, ‘set the fish pots/ traps’, ‘diving’ and transporting the fish back to land for sale. In Pedro Cays, the men sell their catch mostly to ‘Packerboats’. These are boats that stay at sea for days or weeks, purchase from fishers daily and transport the fish to Kingston and other ports.

### **Ownership of /access to resources and decision making**

A few women played important roles as investors in the fishing business. These women would buy the boats and gears required in the fishing process and employ capable men for them to do the actual fishing at sea. Additionally, women were also important in the distribution of fish (as vendors) and some owned vehicles for this purpose – to transport fish to be sold in the market. Most men owned their fishing vessels and gears or had access to boats owned by others.

Men were more likely to be the proprietors of vehicles and land compared to their female counterparts. Participants in the Bluefields focus group indicated that men made most of the financial decisions in the home as they were the breadwinners of the family in many instances. The role of women in decision-making tended to be more domestic in nature, for example, by raising their children and attending to their education. Women would ensure that the children attend school and that money is saved for educational purposes. Additionally, women typically play an integral role in community development as seen in the Treasure Beach Women’s Society. Women are normally the organizers for the various community activities such as fundraising activities, beach clean-up, health and wellness awareness.

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<sup>13</sup> Funds are used for general administrative operations of the organization.

### **Access to educational programs**

Women in Treasure Beach and Bluefields indicated that they had participated in training workshops/seminars from National Environment and Planning Agency (NEPA), Jamaica Social Investment Fund (JSIF) and Tourism Product Development Corporation (TPDCo) in being 'tour guides', 'life guards', 'scuba diving' and 'coral gardening'. There were also literacy classes held in both regions that were attended by women. In Treasure Beach women also had access to computer classes.

Men in both Bluefields and Galleon stated that they have participated in short courses in 'fishing', 'tourism' and 'environmental preservation'. Most men highlighted a lack of time as a major constraint for greater involvement in longer-term educational programs – all day training would prevent them from fishing.

In contrast to Treasure Beach and Bluefields, women on Pedro Cays indicated that there were no educational programs available for them. The same was true for men on Pedro Cays, who strongly bemoaned the lack of educational opportunities available to fisherfolk to improve literacy. The suggestion was made to implement short (in the evenings after work) literacy classes for fishers who are unable to read and write. Participants mentioned that the levels of illiteracy among fishers is very high, and these classes would go a long way in ameliorating this problem. The lack of access to educational resources to participants from Pedro Bank is directly linked to its distance from the mainland and its associated resources as well as the fact that fisherfolk travel there periodically to harvest stock and market the fish. They then return to their communities on the mainland for the remainder of the year. As such, there are no permanent formal institutions that have been established on the Pedro Bank.

### **Access to credit**

Participants had reasonable access to financial support from formal institutions. Those who had the wherewithal and discipline to develop long-term relationships with banks and credit unions (through regular and consistent contributions), indicated that these were viable options available to them for loans when necessary. Nevertheless, there are many challenges regarding finance in these communities. Fishers from the various regions were perplexed as to why loan agencies failed to recognize their boats and engines as assets that can be used as collateral for business loans. Some went on to criticize the insurance companies for their unwillingness to insure their boats and engines, which further compound the difficulties they continue to face in terms of accessing finance for their main occupation.

In Bluefields, the Bluefields Bay Fishermen Friendly Society has a small loan scheme available for men and women. A few members can access it if they are setting up a business or using funds for fishing purposes. Loans are available at a single digit interest rate. Both in Bluefields and Pedro Cays, women described being active in 'partner draws', which is an informal form of saving. Under this scheme groups of people pool funds together through regular contributions. Each member will receive a 'draw' (analogous to a loan in the amount of ten times the initial contribution) on a rotational basis until all members are reimbursed for their total contributions – normally the life of the arrangement, unless a second round of rotation is agreed upon.

## **Decision making**

There is a clear division in the decision-making roles of men and women in Bluefields. As previously mentioned, women took on more domestic decisions, while males were regarded as the ones to make decisions on the finances of the household. These patterns are also observed in other communities. While men tend to chair many of the associations or hold the primary leadership positions, women are deemed integral in the in the decision-making and implementation processes. Women function as organizers for various events and training workshops and take the lead in addressing social issues in the community, such as teenage pregnancy and child abuse. The division of these roles of responsibilities are complementary and are important in the Bluefields community.

The social environment is slightly different in Treasure Beach, as the women reported they made all the decisions regarding their households and communities. They indicated that the society has evolved into them taking on greater leadership roles as men have not been living-up to their responsibilities.

## General Conclusions

Fishing is the main economic activity in all the CMBP seascapes, with beneficiaries operating in primarily small-scale artisanal fisheries followed by tourism and subsistence agriculture. There is the potential for modernizing fishing operations by accessing new gear and learning about more sustainable methods of fishing. Many people are also interested in participating in alternative livelihood activities, such as those related to tourism and agriculture.

Fishing is a male-dominated activity although women occasionally participate in post-harvest, preparation and marketing activities. In general, women are not interested in expanding their participation in fishing related activities, but they have expressed interest in alternative income generating endeavors. Women prefer jobs related to care/service economics or free trade zones, i.e., small scale business activities. Some aspire to successfully participate in the local tourism economies with their craft activities.

In most communities, the structure of the household is based on the differentiated roles of men and women. Men tended to be the main income earners and decision makers in three of the four seascapes, with Jamaica being the exception. Women's roles revolved around tending to the household and children. Men have the dominant financial role in the household even when women supplement their family's income. While both males and females participate in community social groups and activities, the involvement of women in the community is based on the traditional view of the feminine role.

The overall positive gender perception of women across communities is a plus, as this potentially contributes to empowerment of young females and their development and/or possible transition into leadership roles in future. However, the perception of women as leaders needs to be reinforced through capacity-building activities. Trainings that engage women in all the seascapes must consider their preferred schedules and reproductive roles (mothers, wives, caretakers) to ensure participation. The same goes for the development of income generating activities.

Credit appears to be more accessible in the Dominican Republic and Jamaica than in Haiti and the Grenadine Bank. Regardless, there are limitations across all the seascapes to accessing credit that could be used to expand alternative livelihood activities. For example, boats and engines (or other assets considered valuable) cannot be used as collateral. Those organized in cooperatives have a greater chance of accessing and repaying loans, and assistance would be helpful in developing innovative credit schemes involving partners in both the private and public sectors. Since women in the community are deemed more credit-worthy than men in general, a household/family approach to the fishing enterprise should be encouraged. In any case, the regular commercial banks do not seem to be a viable option in any of the seascapes.

Beneficiaries of CMBP show high levels of awareness of key conservation issues and are interested in decreasing their impact on their marine environment, while earning income via alternative livelihoods or improved/sustainable fishing practices. However, there are many key points to be systematically addressed in each community before they can sustain alternative livelihoods themselves. Activities aimed at organizing respondents and providing capacity strengthening are particularly important. The importance of gender equity in community-based, small-scale fisheries management is also a point to be incorporated into planning programs for seascapes, as it is clear that women play key supportive roles in the Caribbean society. While including women into community management may be challenging in some seascapes, appropriate steps should be taken to ensure that everyone feels a sense of ownership and gain equal benefits from CMBP activities.



## Seascape Conclusions

### Grenadines Bank

Awareness on conservation issues is generally high, as most respondents understand the ecological role of coral reefs and mangroves. However, the reported high consumption of parrotfish, turtles, turtle eggs and sharks in the Carriacou community is a concern for the future of the reefs. Turtle consumption should be studied further as there are different views on recent trends. In the Grenadines Bank, community members were resistant to what they perceive as outsiders forcing a conservationist approach on them. They complained about the lack of consultations regarding the establishment of the Marine Protected Areas. Any attempt to address fisheries issues should address these concerns.

Few respondents mentioned practicing sustainable fish harvesting methods, except for hook and line fishing and targeting adult fish specifically. The use of fine mesh in fishing and the purchase of undersized lobster and fish were recognized as unsustainable practices by most respondents. Most persons (84%) across all communities were aware of the importance of the levels of marine resource consumption. In view of their high interest in GIS and Very High Frequency radio training, the fisherfolk appear willing to modernize fishing practices and expand their operations to off-shore fisheries.

There was also interest in activities that enhance local livelihoods. In general, most preferred alternative livelihoods related to the tourism sector. Water taxi operations were identified as the number one alternative livelihood option. Safety, health and other standards will need to be considered in this area. Kayaking, scuba diving tours and turtle monitoring were also mentioned as attractive livelihood options for men. Women indicated interest in crafts production.

### Jamaica

In Jamaica, most respondents were aware of the importance of corals and mangroves for ecosystem services, tourism and their livelihoods in the long term. While most respondents were also aware of the impact of unsustainable fishing practices, only about 25% reported primarily using sustainable fish gear.

Responses, however, diverged between regions regarding parrotfish consumption and its impact on coral reefs. Over twice as many respondents in the Southwest Coast (45 or 67%) agreed that it is 'important not to eat parrotfish' compared to respondents from Pedro Cays (19 or 53%). Respondents in the Southwest Coast were likely to have had more exposure to various educational and awareness raising activities. Many fisherfolk (especially from Pedro Cays) indicated they understood why the authorities might be considering limiting parrotfish capture, but they advised against such action. More consultations with fisherfolk are necessary before any decision is taken to limit parrotfish catch/consumption.

Fisherfolk from the South West region (Bluefields & Galleon) have a much greater interest in alternative livelihood activities compared to fisherfolk from Pedro Cays. Pedro fisherfolk seem content with their current occupation (fishing). Overall, men's interest was highest in activities that would modernize and enhance their fishing operations, such as receiving a 'GPS' and an 'Ice chest'. With these activities, participants would see economic benefits in the short term, as these activities help improve navigational skills and reduce spoilage and waste of the catch. Women were least interested in fishing operations, and more interested in eco-tourism activities.

## Haiti

Most respondents associated coral conservation with maintaining vital ecosystem services, such as protecting habitats and shorelines and attracting ecotourism. However, more than half of respondents (54%) agreed with the statement that protecting the reefs will not protect fishers' livelihoods at all. The importance of mangroves seems to be well known among members of fishing associations. Almost all the respondents agreed that the mangroves protect the shoreline, act as nursery for juvenile fishes and help secure fishing as a sustainable livelihood opportunity.

Although a high proportion of respondents (70.8%) believe it is important to protect Haiti's fish stocks, many of them (81.8%) believe local stocks are inexhaustible. The use of unsustainable fishing practices, gear and consumption still characterize the fishing sector in the targeted coastal areas. The bottom trawl net (55.4%) and the small mesh gillnet (45.9%) are the most commonly used gears. A high percentage of respondents seem to understand the importance of protecting juvenile fishes, though most respondents (86%) agreed that shark consumption was not bad, indicating their lack of knowledge on the state of the predator population.

Most survey respondents were interested in accessing new fishing gear, apiculture and mangrove restoration as alternative livelihood options. Similar to other seascapes, men are interested in strengthening their fishing operations while women are interested in venturing into small-scale businesses, particularly related to fisheries marketing and processing. The top four activities for males were gear exchange, fish sanctuary management and eco-tourism activities (kayaking and scuba dive tours). The top three activities for females were training on new fishing practices, craft production and plastic collection and recycling.

## Dominican Republic – Samaná Bay Seascape

Respondents reported a high awareness level of the importance of ecological services provided by habitats in Samaná Bay. Most participants agreed that coral reefs are important habitats for many species of marine life (78%), and that coral reefs helped create jobs for the community via ecotourism (57%). Fishers' associations and fishery partners are very concerned about the deterioration of the ecosystem of Samaná Bay in the Dominican Republic.

Fishing practices in Samaná Bay are influenced by fish shops, who own a significant portion of the boats and fishing gear in the region. While 46% of the respondents stated that they had used new sustainable fishing gear, the suripera net for shrimp fishing, many of them also noted other fishers used more destructive practices. When asked in which fishing alternatives they would like to participate, respondents indicated suripera nets for shrimp fishing (38%), lobster traps (30%) and fine mesh over a large mesh size (33%) were the most popular fishing options among beneficiaries.

The top alternative livelihoods chosen were mangrove restoration, coral gardening, crafts production and sales, and snorkeling tours. In moving forward with some of these initiatives, participants will need training in English as a second language, sales and marketing skills as well as basic hospitality skills.

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