

## VALUE CHAIN APPROACHES IN FISHERIES PLANNING AND MANAGEMENT

### Executive Summary

The Value Chain approach can be a useful tool in the management of natural resources such as fisheries and aquaculture. It provides an analytical framework for crafting cohesive and inclusive strategies to guide the orderly development of the industry such that it benefits the environment and local business development.

Value Chain refers to the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to final consumers” (Kaplinsky and Morris, 2001). The concept of Value Chain when applied to fisheries and aquaculture simply refers to all the activities and services—from input supply to production (capture fisheries and aquaculture farming), processing, wholesale and finally, retail. It is so called because value is being added to the product or service at each step. Taking a Value Chain approach to the development of the sector means addressing the major constraints and opportunities faced by stakeholders and businesses at multiple levels of the Value Chain.

A Value Chain analysis assesses whether the Value Chain is effective at maximising the opportunities for adding value in the eyes of the consumer; and efficient in adding value, producing, processing and distributing at the least cost. With respect to fisheries and aquaculture, the analysis should focus on those areas that can lead to improvements in Value Chain performance in terms of: (i) improving the planning, legal and regulatory framework for sustainable management of the resources; (ii) increasing the quantity and improving the regularity and continuity of production; (iii) improving the quality and safety of products; (iii) improving the mechanisms for cooperation among the Value Chain actors; (iv) reducing the time needed to reach

the customer; (v) minimizing transactional costs; and (vi) improving the capacity of chain actors to follow and assimilate technology and market developments.



The process of Value Chain analysis is done in accordance with a number of sequential steps as follows:

1. Selecting and prioritizing Value Chains
2. Mapping the Value Chain
3. Analysing the Value Chain
  - Technical Capacities
  - Economic performance and competitiveness
4. Formulating an upgrading strategy for the selected Value Chain
5. Implementing the upgrading strategy; and
6. Monitoring and impact assessment

For fishers, managers and policy makers, the Value Chain approach provides a useful and practical tool for assessing the development status of the fisheries and

aquaculture sector and in analysing the opportunities and constraints for its future development.

Some common mistakes in Value Chain development include:

1. Insufficient understanding of market opportunities or dynamics
2. Focusing on sectors without growing demand (e.g. organic)
3. Focusing on too many issues at once
4. Addressing symptoms, not root causes

The suggested next steps in implementing the Value Chain approach in fisheries include a Value Chain mapping exercise, stakeholder mapping and positioning and the detailed strategies for addressing the challenges and constraints.

## Introduction

The objective of this presentation is to build support for use of the Value Chain approach in fisheries and aquaculture with the aim of advancing towards development of resilient and inclusive Value Chain market and skills for men, women and youth in the fisheries and aquaculture sector.

Although the concept of Value Chain is not new, its application to enhancing policy, development strategies and action plans for improving agro-industry Value Chains is well known and documented. It provides an analytical framework for crafting cohesive and inclusive strategies to guide the orderly development of the industry such that it benefits the environment and local business development

Value Chain refers to the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to final consumers” (Kaplinsky and Morris, 2001). The concept when applied to fisheries and aquaculture simply refers to all the activities and services —from input supply to production (capture fisheries and aquaculture farming), processing, imports, wholesale and finally, retail. In reality, the total Value Chain takes into account the input suppliers support services providers including regulatory, financial, technology transfer and all the other actors who comprise the enabling business environment in which the industry operates. It is so called because value is being added to the product or service at each step.

Taking a Value Chain approach to the development of the sector means addressing the major constraints and opportunities faced by stakeholders and businesses at multiple levels of the Value Chain.

As opposed to the traditional exclusive focus on production, the concept stresses the importance of value addition at each stage, thereby treating production as just one of several value-adding components of the chain. Typically, in traditional development and management frameworks for industries such as fishery and aquaculture, focus is placed on mass supply of a product and taking receipt of what the market offers. Today, the dimensions have changed as consumers are becoming more educated and discriminating and willing to pay more for quality. They are also more concerned about social issues, the origin of products and conditions of production, harvest and returns to primary producers. This has resulted in greater consideration being given to all actors along the chain: input suppliers, producers (fisher folks and farmers), processors, importers and buyers as well as support from regulatory, planning, research and extension, technical, business and financial service providers.

The Value Chain approach can be useful in developing the strategies to address the main factors which constrain the development and management of the fisheries sector in island States. These include a lack of institutional and human capacity in both the public and private sectors, complexities of inshore fisheries management, post-harvest losses, poorly developed safety regulations for fishing vessels and fledging and under-developed national fishing industries for the harvesting and processing of offshore resources as well as the expansion of aquaculture production.

## What is the Value Chain approach?

The Value Chain concept was initially proposed by Porter (1985) as a major way to create more customer value and gain competitive advantage. It provides a systematic approach to evaluating activities along the Value Chain and for designing interventions to improve efficiency and competitiveness thereby creating better value for all participants.

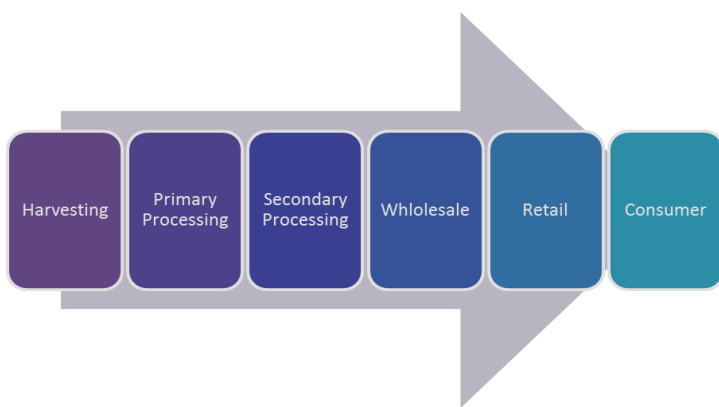
As opposed to the traditional exclusive focus on production, the concept stresses the importance of value addition at each stage, thereby treating production as just one of several value-adding components of the chain. In

its simplest form, a typical seafood Value Chain consists of harvesting (either through fishing or aquaculture, or a combination of both), primary processing, secondary processing, distribution and marketing and finally consumption. Figure 1 below shows a schematic presentation for a typical seafood Value Chain.

In reality, the total Value Chain embraces the input suppliers, the support services providers and all the other actors who comprise the enabling business environment in which the industry operates. The macroeconomic landscape, policies, laws, regulations, standards and institutional elements such as research and innovation, human resource development and other support services form the environment in which all activities take place are also important actors and activities in the Value Chain.

The usefulness of the Value Chain approach lies in the fact that it goes beyond looking at capture fishery and aquaculture production in isolation to analyze interactions and synergies among actors and between them and the business and policy environment. It enables an understanding of the power relationships between the various actors and highlights the external factors impacting the Value Chain. By revealing strengths and weaknesses,

Figure 1: Schematic presentation for a typical seafood Value Chain.

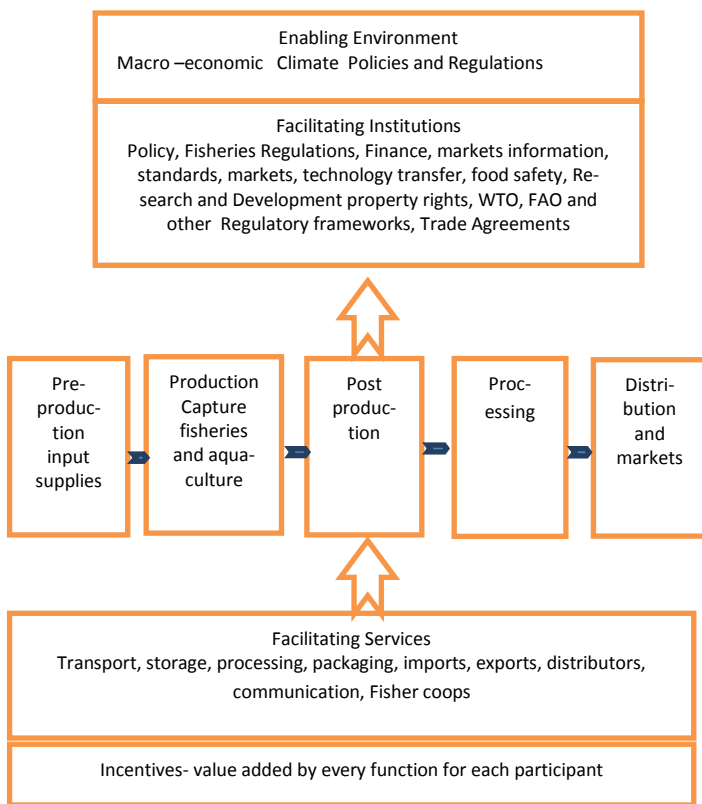


Value Chain analysis helps participating actors to develop a shared vision of how the chain should perform and to identify collaborative relationships which can lead to improvements in chain performance. For policy-makers, Value Chain analysis is a means of identifying corrective measures, investment priorities and development opportunities. The Fishery and Aquaculture is more aptly represented in Figure 2.

## How is Value Chain analysis done?

A Value Chain analysis assesses whether the Value Chain is effective at maximising the opportunities for adding value in the eyes of the consumer; and efficient in adding value, producing, processing and distributing at the least cost. With respect to fisheries and aquaculture the analysis should focus on those areas that can lead to improvements in Value Chain performance in terms of: (i) improving the planning, legal and regulatory frameworks for sustainable management of the resources; (ii) increasing the quantity and improving the regularity and continuity of production; (iii) improving the quality and safety of products; (iii) improving the mechanisms for cooperation among the Value Chain actors); (iv) minimizing transactional costs; and (v) improving the capacity of chain actors to follow and assimilate technology and market developments.

Figure 2: Composite Value Chain for Fishery and Aquaculture



UNIDO in its approach to Value Chain analysis of agro-food chains proposes six (6) sequential steps as follows:

## **1. Selecting and prioritizing Value Chains for promotion**

This process is carried-out to identify the Value Chains that offer the most promising prospects for economic growth and poverty reduction. In this regard a review of key issues that have an impact on fisheries and aquaculture development and the capacity of the CARICOM region to produce and sustain adequate supplies to meet regional food security requirements and for exports of fishery products competitively would be a prime determinant for selection. Fisheries and aquaculture and the products they produce meet several criteria for selection and are relevant to the region and individual country's reality, long term economic outlook, development goals and strategy. Consequently, the following criteria would have factored in the selection as they relate to economic growth and reflect a pragmatic approach to a sustained development of the fisheries and aquaculture Value Chain:

- How does the sector fit within the regions' overall strategy for economic growth, export development, food security and poverty reduction?
- What is the Value Chain potential for employment generation?
- To what extent higher environmental and social standards may affect costs and competitiveness and thereby raise entry barriers for fishers?
- What would be the impact of the Value Chain on the rural coastal communities where many fishers operate as well as the overall economy of the member states?
- What is the potential domestic and/or international demand for a particular product?
- What are the production costs in comparison to those of competitors – benchmarking and competitiveness factors?
- What are the prospects for attracting public and/or private investments?
- Are the available resources in line with the number of operators involved in the Value Chain?
- What is the potential for local SMEs (including informal suppliers) to be integrated in regional/international markets?
- What is the situation with regard to existing infrastructure such as landing sites, financial and non-financial business services, availability and accessibility of inputs?
- What is the level of skills of the labour force and management in the sector?
- How may the selected chain affect/promote policy

changes – creating an enabling environment for private sector development?

- Are there complementarities with other projects in the region/country and is there potential for scaling-up increasing the quantity and improving the regularity and continuity of production?

## **2. Mapping the Value Chain**

This step enables an understanding of the characteristics of the chain actors and the relationships among them, including the study of all actors in the chain, of the flow of goods through the chain, of employment features, and of the destination and volumes of domestic and foreign sales. This exercise is carried out in qualitative and quantitative terms through graphics presenting the various actors of the chain, their linkages and all operations of the chain from pre-production (supply of inputs) to industrial processing and marketing. Depending on the level of detail needed, this exercise may focus also on factors such as the size and scale of main actors; production volume; number of jobs; sales and export destinations and concentration.

## **3. Analyzing the Value Chain technological capacities**

This analysis is made in order to assess the Value Chain production system and tools; evaluate their technical performance; and determine the principal technical actions that need to be carried out to upgrade individual enterprises within the chain and to enhance their competitiveness. Among the elements that are assessed are the utilization of inputs, human resources and technical capacities; the technology and processes used; the production management methods; and the environmental aspects.

## **4. Analyzing the Value Chain economic performance and competitiveness.**

This analysis entails the measuring of economic factors (production costs, margins, added-value, etc.) as well as benchmarking in order to position the chain vis-à-vis alternatives or competitors. It is an effective means of identifying strategic and non-strategic activities and of raising awareness among chain actors concerning cost drivers, margins for price negotiation and value addition possibilities. It also reveals leverage points for action at policy, institutional and enterprise level.

## 5. Formulating an upgrading strategy for the selected Value Chain.

At this stage, upgrading plans are drawn up which describe the interventions required in the agro-Value Chain, including policy and institutional recommendations. Specific interventions at enterprise level are also outlined, and so is the advocacy necessary to implement them. Roles and responsibilities are assigned to all actors and agencies involved.

## 6. Implementing the upgrading strategy, monitoring and impact assessment

It is anticipated that the analysis for fisheries and Aquaculture will identify a large number of interventions for Value Chain development (policy issues, infrastructure improvements, compliance and certification systems, technology and knowledge transfer, training and institutional development etc.) These will need to be factored in the strategic plans for fisheries and aquaculture development in the region. They will also provide a useful framework for requesting and coordinating technical assistance that may be available, for example, under the EPA and other bilateral trade and cooperation frameworks. This process is depicted in Figure 3.

## Example of Value Chain analysis

The use of Value Chain analysis in fisheries and Aquaculture is quite widespread and is widely applied in both developed and developing country settings, especially where export of fishery products is a dominant activity. With regard to fishery and aquaculture, the Value Chain assessment is the first step to understand and to identify opportunities and constraints in the sector.

This assessment provides amongst other benefits, a basis to evaluate needs and capacity to respond to market demands. The steps are as follows:

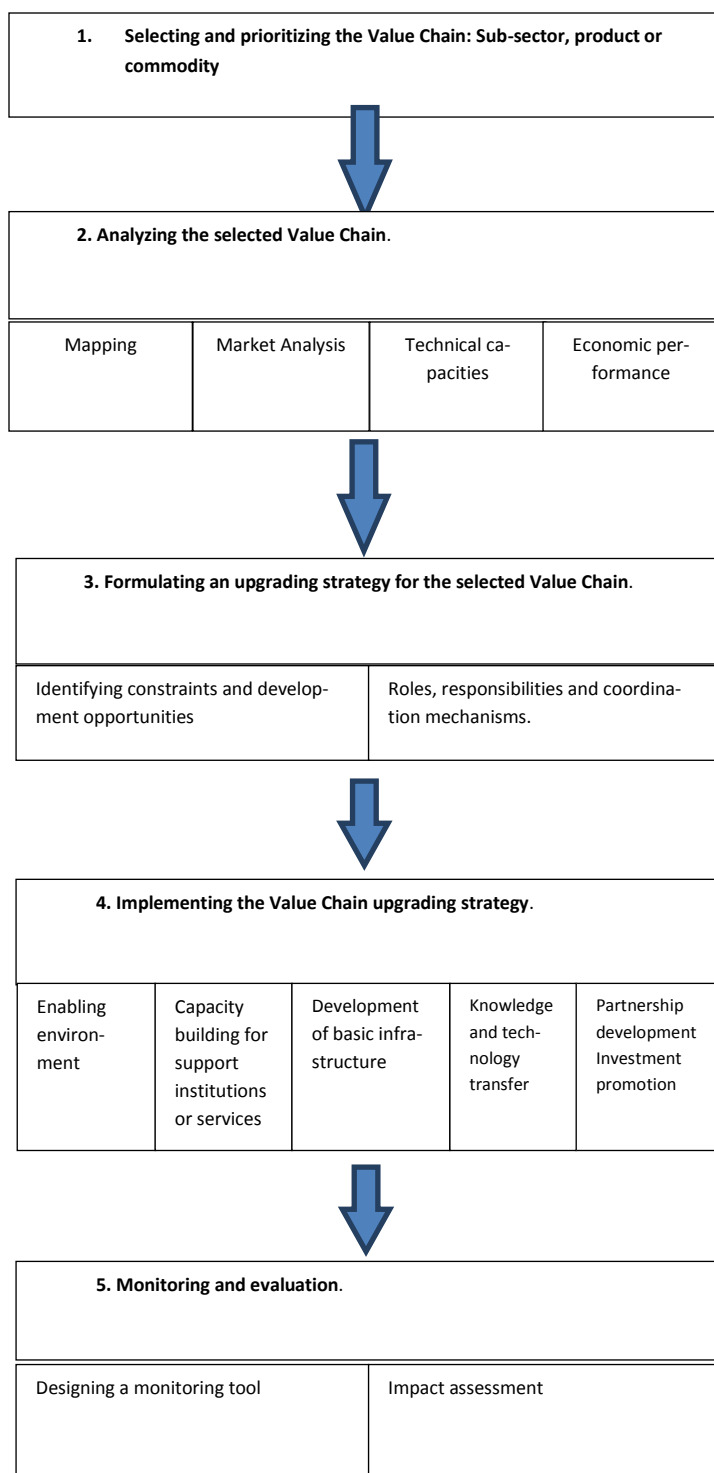
### 1. Establishing overall objective and analysis of critical points

The Value Chain analysis starts by establishing the overall objective of the analysis and identify the critical points to be evaluated. Sources of information for this analysis may include secondary data, published or unpublished literature, surveys, focus groups, and rapid appraisal. The

following are some critical points that are often evaluated:

- Current production levels (species captured, farmed, factors limiting yield and/or quality). This will include information on whether it is capture fishery or aquaculture, freshwater or marine, production quantity, price and technology / technologies used in the harvest process. How many people are directly employed in the production sector? What information is available on relative incomes of fishermen / fish farmers and the non-fishing sector and how has this changed overtime? Are there fishermen's associations to support fishermen/fish farmers in discussions with government, regulators and buyers? What is the structure of fisheries management? Is it open access, licenses, net size regulations, etc.? How are regulations enforced? For capture fisheries, stock information must be included;
- Policy and regulatory Issues (local, regional, international Quarantine issues, rules on food safety standards etc.; trade agreements). This would also include fisheries management regulations for capture fisheries, entry /environmental regulations for fish farms, sanitary/health regulations, tariffs and non-tariff barriers to trade etc. Also what regulations are imposed on sale of fish? Are there restrictions on who can buy and sell fish;
- Market channels through which product flows.
- The characteristics of the market segments for the main products;
- Level of technology (methods of capture fishery; semi-intensive through intensive aquaculture practices, hatchery grown seed stock or wild caught, feeding system, etc.);
- Post-harvest handling/processing practices, including cold units available at fish landing sites, packing house and packaging materials used, food safety practices (Hazard analysis critical control points or HACCP) or Best Fish and meat hygiene Practices, processing for added value, labor requirements. This will also include information about products produced (e.g. fresh, salted, dried, canned, refrigerated or frozen), technology/technologies used, major inputs and costs. How many people work in the processing sector? What proportion of catch is processed in the region and what proportion is sold out of the region or exported for processing?

**Figure 3: UNIDO framework for Agro- Value Chain analysis and development**



- Technical assistance availability (public or private advisory services available);
- Financial assistance availability (access to credit, export and local financial plans/services available);
- Distribution and logistics issues (mode of product delivery, role of brokers and/or wholesalers, retailers,

status of cold chain system to final delivery, use public and/or private warehouses)

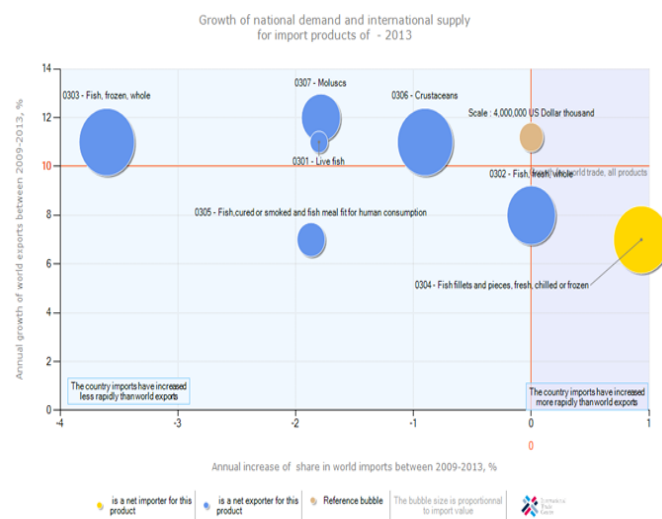
- In relation to exported products the sales/marketing practices and conditions (Selling Freight-on-Board (FOB) or Cost, Insurance, and Freight (CIF), terms of sale - cash or credit, use of contracts, export and/or local sales). What portion of the product is sold domestically versus exported? This includes information about what kind of products are sold in the different markets;
- Level of imports quantity and type of products;
- Data availability at the different stages of the Value Chain.

### 2. Identifying the key factors that affect competitiveness of fisheries and aquaculture

A decision is taken as to the key competitiveness issues and constraints that must be addressed as a matter of priority.

### 3. Designing the intervention strategies

An intervention strategy must start with an understanding of the threats and opportunities for participants in a market. The Value Chain Approach assesses the constraints and opportunities for enhancing an industry's competitiveness through a diagnostic framework that



includes five elements:

- End market opportunities
- Enabling environment (international and national)
- Industry and inter-firm cooperation: Vertical linkages and Horizontal linkages
- Supporting markets (sector-specific and non-sector specific services, including financial services).

- Firm-level upgrading (product and process upgrading).

The intervention strategies are designed to address the key constraints identified and prioritized and are typically outlined in a matrix which identifies the Key Constraints, Solutions, Facilitators and Providers and Illustrative Intervention.

## What are the benefits to fishers, managers and policy makers?

A Value Chain analysis will provide both qualitative and quantitative background information to allow an overarching assessment of the entire fishery and aquaculture sector, its varied activities, actors and stakeholders (Value Chain) and the constraints that must be addressed to increase the competitiveness and sustainability of the sector.

For fishers, managers and policy makers the Value Chain approach provides a useful and practical tool for assessing the development status of the fisheries and aquaculture sector and in analyzing the opportunities and constraints for its future development.

Value Chain analysis helps to identify critical issues and facilitates the design of interventions to maximize revenue flow in the fisheries sector through judicious utilization of scarce resources, processing, value addition, efficient marketing and distribution.

Through the participatory approach envisaged in Value Chain analysis, it affords an opportunity for all stakeholders to be actively considered and involved; to take ownership of the strategies and plans for sector development thereby resulting in an equitable approach to the development of the sector.

The Value Chain approach enhances governance of the sector and the embracing of international best practices to enhance sustainable development.

### Data to support intervention in the Caribbean fishery Value Chain

Trade data shows growing trends in HS 0304 Fish fillets and pieces, fresh, chilled or frozen while other sectors were growing slower; where country imports have grown

more rapidly than world exports. This trend justifies intervention at the Regional level to capture greater levels of benefits to Caribbean Value Chain actors.

## What are the next steps in implementing the Value Chain approach in fisheries?

The suggested next steps in implementing the Value Chain approach in fisheries include a Value Chain mapping exercise, stakeholder mapping and positioning and the detailed strategies for addressing the challenges and constraints. The mapping exercise will include:

1. A comprehensive mapping of the global Value Chain for the fisheries and aquaculture sector and including actors (i.e. fishers, producers, service providers, exporters); enablers (business support organizations, etc.); drivers (public institutions and ministries); and factors (buyers, consumers, quality/standards, trade agreements, transportation/logistics, trends, etc.)
2. Stakeholder mapping and positioning of the different stakeholders within the fisheries sector with a view to determining their engagement, supply capacity, relevance, and position in the fisheries and aquaculture Value Chain;
3. Detailed strategies for addressing the challenges and constraints CARICOM fisheries in order to improve competitiveness and sustainability.

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#### CRFM

The CRFM is an inter-governmental organisation whose mission is to “Promote and facilitate the responsible utilisation of the region’s fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region”. The CRFM consists of three bodies – the Ministerial Council, the Caribbean Fisheries Forum and the CRFM Secretariat.

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Prepared for the CRFM Secretariat and the  
Caribbean Network of Fisher folk Organisation (CNFO)

By

Aaron Parke, Consultant

CRFM Secretariat  
Princess Margaret Drive  
P.O. Box 642  
Belize City  
Belize

Tel.: (501) 223 4443

Fax. (501) 223 4446

Email: [Secretariat@crfm.int](mailto:Secretariat@crfm.int)

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