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**TRAINING NEEDS ASSESSMENT OF THE FISHERIES  
DIVISIONS OF THE CARIBBEAN REGIONAL  
FISHERIES MECHANISM (CRFM) MEMBER STATES**



# **CRFM Technical & Advisory Document - Number 2014 / 2**

## **Training Needs Assessment of the Fisheries Divisions of the Caribbean Regional Fisheries Mechanism (CRFM) Member States**

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CRFM Secretariat,  
Belize 2014

## CRFM TECHNICAL & ADVISORY DOCUMENT – Number 2014 / 2

### Training Needs Assessment of the Fisheries Divisions of the Caribbean Regional Fisheries Mechanism (CRFM) Member States

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## LIST OF ACRONYMS AND ABBREVIATIONS

ACP	African, Caribbean and Pacific states
ANCORS	Australia National Center for Ocean Resources and Security
CCCFP	Caribbean Community Common Fisheries Policy
CERMES	Centre for Resource Management and Environmental Studies
CIDA	Canadian International Development Agency
CFO	Chief Fisheries Officer
CFTDI	Caribbean Fisheries Training and Development Institute
CRFM	Caribbean Regional Fisheries Mechanism
FAD	Fish Aggregating Device
FD	Fisheries Division
FO	Fisheries Officer
IOI	International Ocean Institute
JICA	Japan International Cooperation Agency
MoU	Memorandum of Understanding
NGO	Non-Governmental Organizations
OS	Office Staff
SFO	Senior Fisheries Officer
SGP	Sea Grant Program
SKN	St. Kitts and Nevis
SVG	St. Vincent and the Grenadines
TNA	Training Needs Assessment
UB	University of Belize
UK	United Kingdom
UNU-FTP	United Nations University – Fisheries Training Programme
UWI	University of the West Indies

## **1. INTRODUCTION**

With a common fisheries policy among Caribbean Regional Fisheries Mechanism countries, member countries need qualified personnel to adopt and implement the policy for the benefit of their people. The Caribbean Community Common Fisheries Policy (CCCFP) will serve as a guide for member states in setting rules and regulations for fisheries. National strategies must be formulated for sustainable use of marine resources and qualified people are needed at all levels to carry out regional and national policies. Mandates of each institute and organization that play a role in the fisheries administration must be clear. The Caribbean Regional Fisheries Mechanism (CRFM) plays a pivotal role in fisheries development in the Caribbean by mobilizing resources, sharing information, and assisting countries in need of developing and managing their fisheries. The CRFM Secretariat implements agreements from its Ministerial Council and the executive board (also called the forum). Today, 17 Caribbean countries are members of the CRFM and each state has a Fisheries Division with the mandate of carrying out regional and national fisheries policy, promoting sustainable use of marine resources, promoting food security, and increasing social and financial benefits of fishing activities (see *Appendix A*). In addition to the Fisheries Divisions there may be several other institutes (research and administrative units) and non-governmental organizations that also contribute to the implementation of national fisheries policies. Proper training of all the people involved in the fisheries is therefore of great importance, both for potential candidates in the fisheries administration and also for the staff already working in the fisheries administration. The member states differ greatly in terms of size, population, and fisheries and so do the Fisheries Divisions. Smaller states have few fisheries professionals although their fisheries resources may be as diverse as bigger states. Access to qualified staff is often limited and many states rely on “on the job” training. The CRFM plays, therefore, an important role in providing training opportunities for the fisheries professionals in its member states.

This Training Needs Assessment study is part of CRFM’s effort to better understand the needs of its member states for training of their fisheries division personnel so it can provide more efficient quality support in enhancing the capacity of the fisheries divisions in the region. This study focuses on the staff of the fisheries divisions, but there may be other units (institutes) that play an important role in the fisheries (such as various stakeholders, ministries, NGOs, and Law enforcement). The questionnaire was sent to 17 Chief Fisheries Officers in CRFM member states, and 12 replied.

## **2. TRAINING OPPORTUNITIES IN THE CARIBBEAN**

People seeking a career in fisheries in the Caribbean have several options in advanced education and training. A number of universities exist in the region and opportunities for short term training arise in relation to projects, often as part of long term training strategies (nationally and regionally).

### **2.1 Universities in CRFM member states**

Many of the universities in the region offer Bachelor’s degrees in areas such as biology/natural sciences, marine engineering, and environmental sciences (table 1), and some of them offer advanced degrees (MSc, PhD) in Marine Sciences and areas related to Ocean Research and Governance. From a study<sup>1</sup> of 15 universities and training centers, 10 offer a first degree in natural / environmental sciences and five of them offer programs towards MSc and PhD degrees. Most of the marine research areas in the graduate programs evolve around ecology and biology of reefs, and not much research was found focusing on fisheries related issues for management purposes.

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<sup>1</sup> The study of the academic training opportunities was limited to internet search and analysis of the websites of the training and academic institutions. No visits were made to the universities

Six of the universities offer “Associate degrees” in marine sciences and one training institution (Caribbean Fisheries Training and Development Institute (CFTDI) in Trinidad and Tobago) offers programs on fish processing (certificate level and associate degree). University of Trinidad and Tobago was the only university offering education on food science and technology. University of the West Indies is by far the largest university in the region with its three campuses in Barbados, Jamaica, and Trinidad and Tobago. Its research program, CERMES in Barbados, focuses on marine issues, but most of the research is in the area of marine ecology. The UWI campus in Jamaica has a marine research station – Center for Marine Sciences – providing training in underwater census for population estimates using SCUBA techniques, in addition to its research programs on reef ecology and oceanography. To summarize, the internet search did not reveal fisheries programs (neither for marine resources nor aquaculture) within the universities studied. Trinidad and Tobago seems to be the only country providing education and training in food science, including fish quality assurance and processing. A visit to Trinidad and Tobago did reveal aquaculture training at the “Sugarcane Feeds Centre” agriculture development station. A more comprehensive study among all universities (visits and interviews) is needed to have a full appreciation of the fisheries work within and among the Caribbean universities. This study did not consider the cost of education or accessibility for people in the Caribbean.



**Table 1: Universities and training centers in CRFM's member states and their programs related to fisheries.**

University	Country	Diploma	Under Grad (Bask)	Graduate	Other/Comments
UWI - Cave Hill, CERMES	Barbados	Marine and Terrestrial Ecosystems (post-grad)	Marine Biology	Marine Science (MSc/PhD), Oceanography (MSc/PhD), Natural Resources and Envi. Management (MSc), CERMES (PhD): (1) Climate Changes, (2) Coastal and Marine Resource Management, (3) Water Resource Management	Research on reefs and MPAs, mainly ecology
UWI - Mona, Center for Marine Sciences	Jamaica		Biology, Marine Biology, Environmental Biology	Aquatic (Marine) Sciences (MSc), Environmental Biology (MSc/PhD), Marine Sciences (MSc/PhD), Oceanography (MSc)	Courses in Statistics and computer sci through other departments and programmes. The marine research and studies are done through the Center for Marine Sciences. Active Research on fish habitat (coral reef), Scuba techniques in research and fishing, Coastal habitat health, Ballast water, Lionfish, and Sea Urchins.
Caribbean Maritime Institute	Jamaica	Marine Engineering, Transport and logistics			
University College of the Caribbean	Jamaica				Has mainly IT programmes in the Sci and Math department.
UWI - St. Augustine	Trinidad and Tobago	Agri food safety and Quality Assurance (post grad)	Biology, Environmental Resource Management		
University of Belize	Belize	Biology, Marine Sci, Natural Resource Management	Biology (2 year), Natural Resource Management		
St. George's University	Grenada		Marine Sciences, Biology, (4 years)		Offer 14 courses on marine subjects, and 12 courses on general biological subjects. Research on MPAs and coastal ecology
University of Trinidad and Tobago	Trinidad and Tobago	Food Technology	Food Sci and Technology, Coastal and Ocean Sci	Coast and Ocean Management (MSc)	
University of Guyana	Guyana				
Ross University	St. Kitts and Nevis				Just vet sciences - may have something on aquaculture. American offshore university
College of the Bahamas	Bahamas		Biology (Chem minor)		Not much on marine environment - focuses more on agriculture and agri planning
Caribbean Fisheries Training and Development Institute	Trinidad and Tobago	Food processing and technology courses			E.g. Fin fish handling and Processing Shellfish handling and preservation Fish inspection
University of Technology	Jamaica		BSc in Applied Environmental Statistics, BSc Environmental Sciences, BSc Science Education (Nat Resources)		
Galen University	Belize		BSc Environmental Sci (6 semester), BSc Marine Sciences	MSc Environmental Sci	Developed distance learning. Not much information on the programmes. No faculty members in Marine Science
University of Suriname, Anton de Kom	Suriname		BSc Environmental Sciences,	MSc Environmental Sci	The website is mainly in Dutch. They have Faculty of Env. Sci with focus on Management of Aquatic Resources

## 2.2 Short term training opportunities through CRFM

CRFM is active in seeking training opportunities for the fisheries people in its member states. Over 200 trainees have participated in various activities organized by CRFM. Most of the opportunities have been through short courses in the region, but many have participated in courses in Canada, Australia and Iceland. A few people received scholarships for post graduate studies in Spain and UK. Most of the training opportunities for people in the Caribbean fisheries (mainly Fisheries Department staff) are acquired through agreements made by the CRFM Secretariat. These include:

International Ocean Institute (IOI) in Canada (at Dalhousie University) offers a 2-month course on Ocean Governance: Policy, Law and Management. The cooperation is based on a MoU<sup>2</sup> from 2005 between IOI and CRFM and the funding is based on joint effort of both parties – but in most cases the CRFM partially funds the candidates. A total of 31 fisheries officers from 14 CRFM member states have benefitted from this training. The course is interdisciplinary in nature and the main aim is to deepen the understanding of the importance of the ocean and its resources in world politics and sustainable economic development with reference to the United Nations Convention on the Law of the Sea. The course is organized in 10 modules with about 90 speakers (lectures and site visits) each tackling various aspects of ocean governance.

University of Florida – Sea Grant Program (UF –SGP) - The cooperation is based on an agreement from 2011 between the UF-SGP and the CRFM and the primary objective of the agreement is “...the development of cooperative and synergistic efforts between the two parties, which will enhance the professional and academic interchange between the two institutions.”<sup>3</sup> Although evidence of direct training through formal training courses is not clear, training through this collaboration is normally associated with projects, e.g. “A Participatory Co-Management Strategy for the use of Fish Aggregation Devices in Dominica and St. Vincent and the Grenadines to Sustain the Caribbean Pelagic Fishery and Communities that Depend on it” which dealt with the best practices of FADs. Three persons from the region have received specialized training at the University of Florida. These are: (1) Riviere Sebastien, Fisheries Division, Dominica (8 months); (2) Randal Thompson, Fisheries Division, St. Kitts and Nevis (4 months); and (3) Anginette Murray, Fisheries Division, Jamaica (4 months).

University of Wollongong, Australia - Australian National Center for Ocean Resources and Security (ANCORS) offers a customised 5-week training in Fisheries Law and Management. A MoU<sup>4</sup> between ANCORS and CRFM was signed in October 2012 with the aim of foster research collaboration and capacity building in the Caribbean region. A total of 16 fisheries professionals from 9 member states and CRFM were trained in Australia in September/October 2012 for about five weeks. The agreement is to be evaluated every 12 months.<sup>5</sup>

University of Belize: An MoU<sup>6</sup> was signed with UB in 2009 to strengthen capacity in areas offered by the UB, which are consistent with the priority programmes of the CRFM. Staff of the faculty of Management, and Social Sciences of the UB took part in developing and implementing two short courses in cooperation

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<sup>2</sup> Memorandum of Understanding between the Caribbean Regional Fisheries Mechanism (hereafter CRFM) and the International Ocean Institute (hereafter IOI) for the joint provision of Capacity Building in Ocean Governance in support of the Caribbean region - 2005.

<sup>3</sup> From the Cooperative Agreement by and between the Caribbean Regional Fisheries Mechanism and the University of Florida - 2011

<sup>4</sup> Memorandum of Understanding between Australia National Center for Ocean Resources and Security (ANCORS) at University of Wollongong (UOW), NSW, Australia, representing in this document by its director Professor Martin Tsamenyi and Caribbean Regional Fisheries Mechanism represented in this document by its Executive Director, Mr. Milton Haughton – 2012. A second round of training was planned for September/October 2014.

<sup>5</sup> A second round of training was planned for September/October 2014.

<sup>6</sup> Memorandum of Understanding - 2009

with UNU-FTP and CRFM on Leadership in Fisheries. These courses were run in Belize (2010) and St. Lucia (2013) for senior and chief fisheries officers.

United Nations University – Fisheries Training Programme offers a series of training options for fisheries professionals from the CRFM member states. A MoU has been signed on training through UNU-FTP's six months training programme (3 fellows per year), short course (5-10 days, based on CRFM needs), and a scholarship programme for former fellows. To date, five short courses on three subjects (Leadership in Fisheries, Project Cycle Management, and Stock Assessment) have been held in the region for about 100 participants. A total of 14 fisheries professionals have been trained through the 6 months training programme. The areas of training in the 6 month programme are:

- Fisheries Policy and Planning
- Marine and Inland Waters Resource Assessment and Monitoring
- Quality Management of Fish Handling and Processing
- Sustainable Aquaculture
- Fishing Technology
- Management of Fishing Companies and Marketing

CRFM member states have also benefitted from training associated with specific national and regional projects through donor agencies such as JICA and CIDA, and also through larger projects such as the ACP Fish II project funded by the European Union.

### **2.3 Fisheries Division Training needs and the selection of staff / trainees**

When qualifications of the staff of FD are evaluated, the role and the mandate of the division have to be considered. In this TNA survey the Chief Fisheries Officers were asked to identify the academic qualifications of their staff (see later in the report). Although this study did not look into the training strategy of individual FDs, one may assume that better staff training and education is preferred in work categories that include greater responsibilities (such as Chief Fisheries Officers, Senior Fisheries Officer, Fisheries Officer). Formal education at tertiary level (or equivalent) should be required for staff dealing with various analyses and handling of information, compared to staff whose responsibility is collection of information which could be trained on the job. The need for training among staff differs, and some of the training is provided on the job, while some training require more formal settings such as through courses (short or long, in the region or abroad), and programs at universities. Competency of the FD to carry out tasks may therefore depend on the academic qualification and specific training of staff.

When it comes to the selection of people for a particular training offered at regional level, the member states are normally asked to nominate 1-2 people. The heads of administration are trusted to select suitable candidates for the training. This puts great responsibilities on the heads of FDs to utilize such training opportunities well, i.e. to send the most suitable person(s) and to provide an appropriate working environment so the training and the skills acquired can be efficiently utilized upon completion of the training. This selection process is not clear from the TNA survey. In the survey some the CFOs did not mention regional training offered by the CRFM / UNU-FTP although staff members participated in those training courses (see *Appendix B*). For that reason it is hard to determine how accurate and thorough the list is that shows training activities the FDs' staff members have undertaken for the past three years. The efficiency and the effectiveness of the training are hard to evaluate, but that is based on several factors such as the need at both personal and institutional level, working environment of the candidate, and the duties and tasks of the individual.

### 3. METHODS

The Training Needs Assessment was conducted through three main approaches:

1. Internet assessment of the regional Universities with emphasis on the types of programs and training opportunities they offer in the area of fisheries and marine sciences,
2. Interviews (unstructured) with senior staff of the CRFM Secretariat and some of the Chief Fisheries Officers,
3. Through a questionnaire / survey (see Appendix C) that was sent to all of the Chief Fisheries Officers or the heads of Fisheries Divisions of the CRFM member states. The emphasis in the survey was on acquiring information on the professional staff, the role of the division, their main tasks, and the self-evaluation of their competency in various areas of fisheries administration. The survey was administered through the internet and created in Google-Docs, and participants could choose to answer it on-line or send the responses in a pdf document. In a few cases, follow-up was needed to clarify some of the responses.

In addition many of the official documents published by the CRFM<sup>7</sup> were screened to get better ideas about the tasks and challenges which both the Fisheries Divisions and the CRFM have to handle. The questionnaire was designed considering an older Needs Assessment<sup>8</sup> from 1992 and was read over by the senior staff of the CRFM, approved by the CRFM Executive Director and then sent to 17 Chief Fisheries Officers in 17 countries (table 2). Responses from 12 countries were received.

**Table 2: The CRFM Member States. Those marked with a \* completed the Training Needs Assessment questionnaire**

Anguilla*	St. Vincent and the Grenadines*
Barbados*	Trinidad and Tobago*
Belize*	Turks and Caicos*
Dominica*	Jamaica
Grenada*	Suriname
Guyana*	Bahamas
Montserrat*	Haiti
St. Kitts and Nevis*	Antigua and Barbuda
St. Lucia*	

A reminder was sent out by the CRFM Secretariat several times resulting in the above outcome.

The staff of the fisheries divisions were categorized into Chief Fisheries Officers (CFO), Senior Fisheries Officer (SFO), Fisheries Officers (FO, both field and desk officers), and Office Staff (OS). The respondents to the questionnaire were asked only to consider the full time and permanently employed staff for their responses. In terms of the staff education four categories were considered: PhD, Master's degree, Bachelor's degree, and other types of education (diploma and/or associate degrees). When the responses on the education were analyzed, there appeared to be some confusion in the interpretation of the diploma and associate degree and therefore these types of education were pooled into one category (other).

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<sup>7</sup> CRFM publishes several documents yeach year ranging from minutes from Ministerial Council meetings, results of workshops on selected topics (e.g. poverty, climate change, and FADs), outcomes of annual regional scientific meetings, and final reports of larger projects such as formulation of Caribbean Common Fisheries Policy and on the Formulation of a Master Plan on the Sustainable Use of Fisheries Resources.

<sup>8</sup> O'Rielly, A. and Clarke, C. 1992. CariCom Fishries Resource Assessment and Management Programme: Training Needs Analysis – Final Report.

The numerical results of the questionnaire were summarized and the average value for each question calculated and in some instances the variance is provided as a measure on how different the countries evaluated the issue in question. Responses to the written questions are provided in the appendix.

In some cases the answers from the FD were very brief and for that reason hard to interpret.

## **4. RESULTS**

### **4.1 The role and main tasks of the Fisheries Divisions**

Appendix A summarizes the main goals and the role of the fisheries divisions in the Caribbean. All the fisheries divisions identify themselves as an agency to promote the sustainable use of the marine resources for the purpose of food security and social and cultural activity in the fishing communities. Although all of the respondents (except for Guyana) had a clear vision about their mandate, some of their goals are very broad while others identified their specific areas of focus. Tasks of many of them involve the harmonization of environmental protection and the use of the environment for fisheries activities. Many of the divisions highlight their role in fisheries management and communication with stakeholders such as fishing communities.

When asked about their specific tasks, the fisheries divisions identify a broad range of activities (see *Appendix D*). While all of the countries mentioned data collection for fisheries management, eight mentioned aquaculture and only four mentioned tasks related to quality assurance. It is clear that in order to properly carry out these activities the division must have staff of great competence in areas from sampling of data for analysis, implementation of national fisheries policies, aquaculture, project management, and extension / community work.

### **4.2 Staff of the Fisheries Divisions**

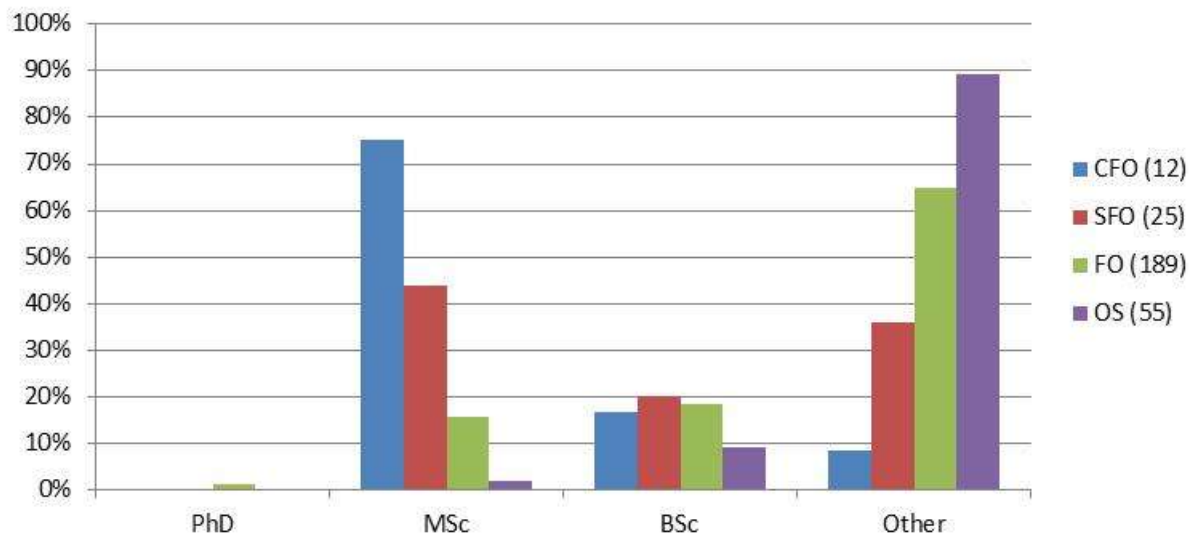
The number of personnel of the fisheries division varies depending on the size of the division and the effort that governments put into fisheries management. In general, fisheries divisions have core staff (full time – permanently employed staff) and then other types of staff that are temporarily employed (often data collectors) and paid by task, daily, and/or weekly. Of the 12 countries responding to the survey, 12 Chief Fisheries Officers were identified along with 25 Senior Fisheries Officers, about 190 Fisheries Officers (both in the field and desk officers) and 55 Office administration staff. The survey did not consider administration levels above the CFO.

#### **4.2.1 Education of the Fisheries Divisions staff**

With regard to education, a great majority (about 75%) of the CFOs has an advanced degree (master degree or equivalent) and about 17% has a BSc degree or equivalent (figure 1). For the Senior Fisheries Officers, about 44% have MSc degrees or equivalent and 20% have Bachelor's degrees. Noteworthy is the high ratio of the SFO with less education than BSc degree (about 30%). Many of the SFOs with limited education seem to have vast experience in fisheries and are promoted based on experience and age. When it comes to the Fisheries Officers, 2/3 (67%) do not have a university education and about 90% of the Office Staff has other education than university studies, although some have associate degrees. From the interviews with the CRFM staff and also with some of the CFOs it is evident that in some of the countries, staff may be promoted through various tracks such as education, experience and age. It is noteworthy that only one FD staff member (Fisheries Officer) has a PhD.

#### **4.2.2 Training for Fisheries Divisions staff**

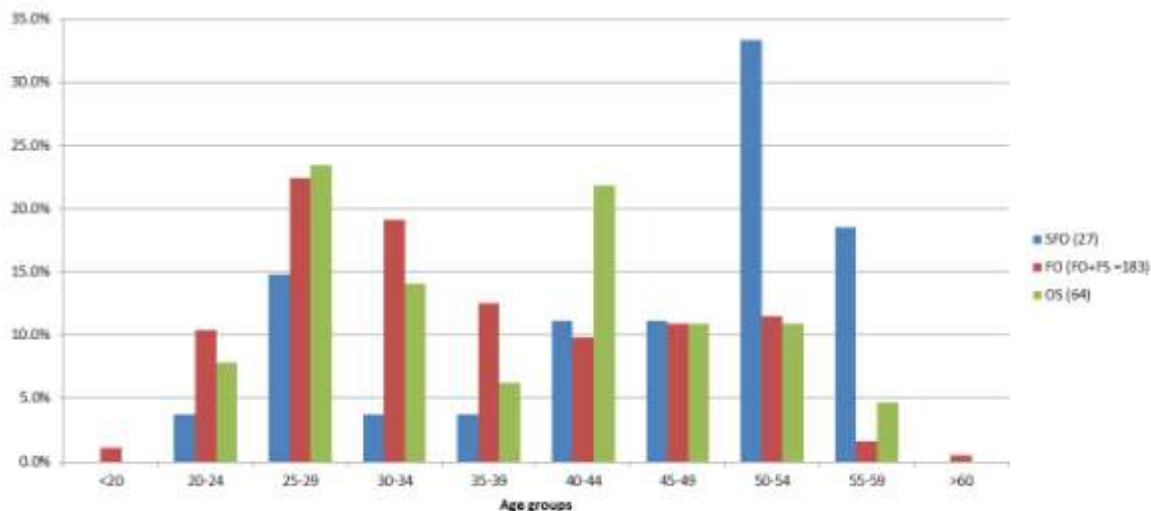
All of the countries have provided some form of training to their FD staff in the past three years. The nature and the type of training vary, and a few of the countries seem to have an active training schedule for their staff (e.g. Trinidad and Tobago, Grenada, St. Vincent and the Grenadines, St. Lucia, and Belize). There is limited harmony when comparing the main tasks of the FD to the training of their staff (*Appendices A and D*). Grenada and Belize seem to be lining up training activities in relation to their tasks, but the rest of countries seem to be engaged in “ad-hoc” training (as it comes along). Most of the countries seem to have received training opportunities in Ocean Management and Governance, and Fisheries Management, but despite identified tasks and duties in the area of Quality Assurance, Marketing of Fish and Aquaculture (see SVG, SKN, Guyana, and Barbados), very little training has taken place in those areas, and there are limited opportunities for Office Staff to receive appropriate training. The conclusion may be that countries seem to lack access to appropriate training for their fisheries staff based on their priorities, needs, and main tasks.



*Figure 1: Education of the FDs staff by category (n=12)*

#### **4.2.3 Age structure of the Fisheries Divisions**

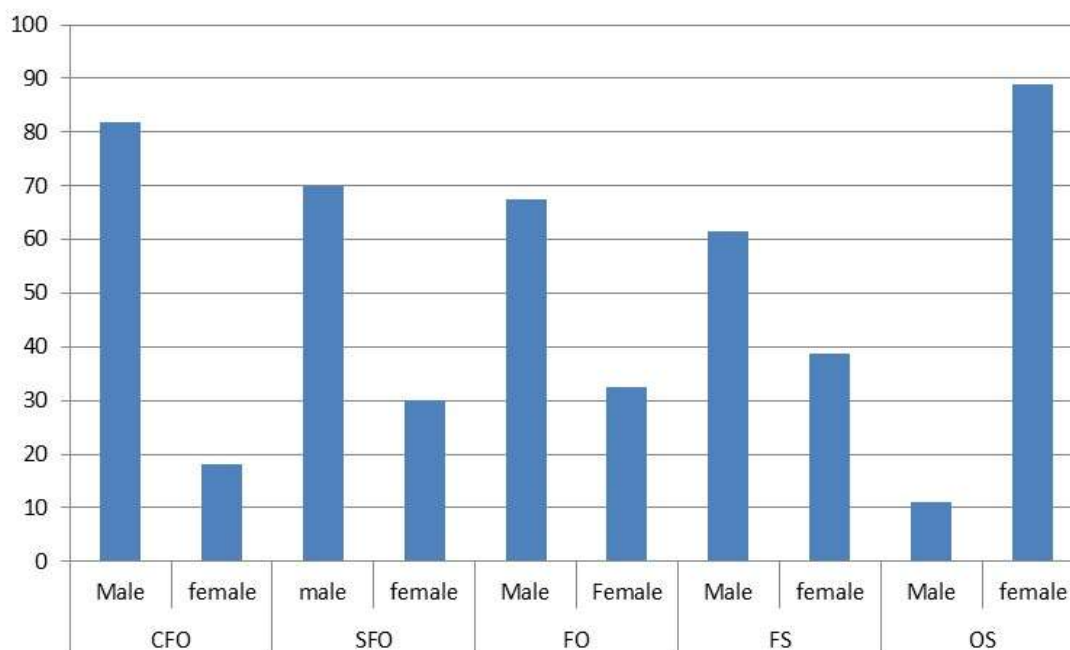
With regard to the age structure of the FD staff, a pattern of advancing age with higher category is observed (figure 2). Over 70% of the Senior Fisheries Officers are above 40 years old and about 65% of the Fisheries Officers are less than 40 years old. For the Office Staff, the age structure is more unified with about half of the staff above 40 years, but a bimodal distribution is seen with over 20% of the staff in the age bracket of 25 - 29 and a similar ratio in the age bracket of 50 - 54.



**Figure 2: Age structure of the staff (SFO, FO, OS) of the Fisheries Divisions (n=12)**

#### **4.2.4 Gender ratio among the Fisheries Divisions staff**

Slightly more men than women work in the fisheries divisions (54% men vs. 46% women) but the ratio differs depending on the category (figure 3). The ratio of men in each category increases with increasing level of the category (highest among the CFO and lowest among the OS). The ratio of women seems to be higher among the FS (field staff) than among the Fisheries Officers (desk staff). An answer to this question was provided by 11 countries.



**Figure 3: Gender ratio (%) of the Fisheries Divisions (n=11)<sup>9</sup>**

<sup>9</sup> The answer on this item from Guyana was not clear enough to be included in the analysis.

### 4.3 Competency of the Fisheries Divisions

In the questionnaire the Chief Fisheries Officers were asked to rate the competency of their fisheries division in carrying out specific tasks. They were asked to value the competency from 1 (poor) to 5 (excellent) but they could also indicate if the task was not part of their mandate (not applicable selected). Figure 4 shows the tasks in the order of competency – highest score indicates high competency, but the graph also shows the variance among the countries which indicate similarity of responses. 22 specific topics were addressed and only two topics were considered not applicable in three or more countries. Three countries did not see *Quality Assurance* as part of their operation and four countries indicated that *Administration of loans* is not part of their tasks. So it is safe to say that most countries considered the tasks presented in the questionnaire as part of their operation. Barbados stands out in terms of the number of tasks not applicable to their operation (8 out of 22). They did not see *Aquaculture Research and technical support*, *Administration of loans*, *Surveillance and enforcement*, *Exploratory fishing*, and *Project management, design and implementation* as part of their duties. Overall the countries (FDs) are confident (average score above 3 and low variance ( $<0.5$ )) about their *Outreach and awareness*, *Communication with stakeholders*, *Developing fisheries objectives* and *Project implementation*. Other activities such as *Licensing and registration*, *Stakeholder participation in management planning and decision-making*, and *Fisheries management* get high competency scores but the variance is  $>0.5$ . The tasks at the lower end ( $<2.5$ ) have in general high variation among the countries except for *Fish processing techniques* which indicates low competency among the countries.

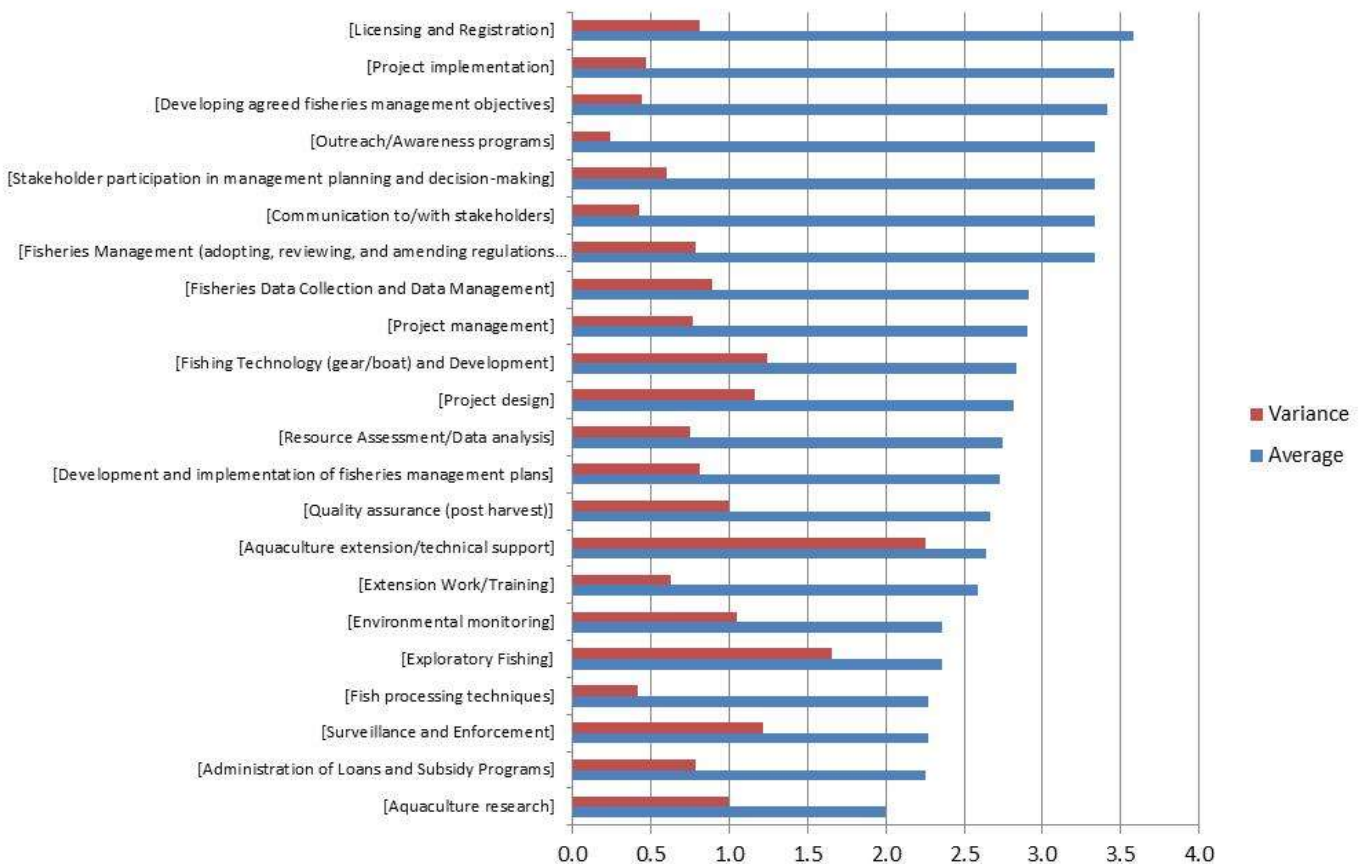
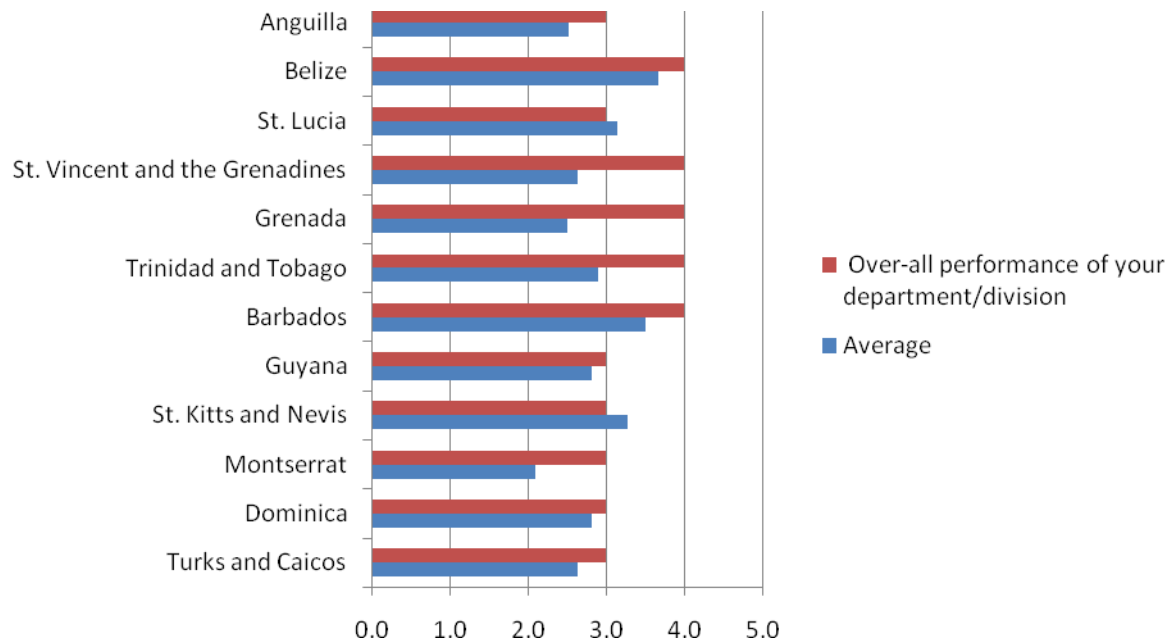


Figure 4: Competency of the Fisheries Divisions (n=12) in carrying out specific tasks (1=poor and 5=excellent)



When the competency scores are averaged and compared to the self-assessment of overall performance (figure 5) of the FD, the countries seem to evaluate their overall performance higher than when asked to evaluate their competency of individual tasks. The difference is greatest for SVG, Grenada, Trinidad and Tobago, and Montserrat. Two countries, St. Lucia, and St. Kitts and Nevis, evaluated their overall performance less than their average competency.



**Figure 5: Average score from competency questions compared to self-assessment overall performance (n=12) of the CRFM member states**

The FDs seem to agree that they have to prioritize to be able to carry out most important activities (average just over 4.5 with low variability) (figure 6) and the divisions seem understaffed to carry out all necessary tasks. But when asked if their division was understaffed rather than undertrained, the answer was not as clear. The divisions seem to need more training for their staff and stated staff members can always apply his/her training in the job. On the other hand the respondents indicate that the staff who received training could be used more effectively.

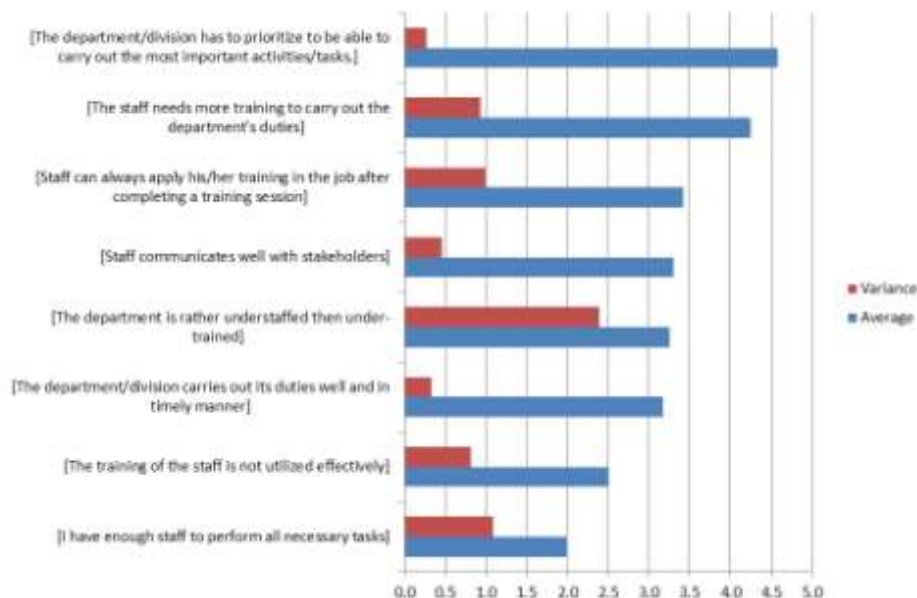


Figure 6: Evaluation of statements on Fisheries Divisions operation (1=disagree, 5=agree, n=12)

#### 4.4 Self-assessed training needs

The FDs (12 Chief Fisheries Officers) were asked to identify areas where more training is needed for the staff to be able to carry out their tasks. The responses varied but could be categorized into seven broad categories as seen in figure 7. Over 90% of the countries identified training needs in the area of data analysis (for most part stock assessment) and over 80% of the countries identified training in Policy and Management as important. Only two of the countries that responded to the questionnaire (Guyana and St. Kitts and Nevis) identified training in Aquaculture as important, and three countries identified Quality Assurance (Dominica, Barbados and St. Vincent and the Grenadines) and Fishing Technology / security (Dominica, St. Kitts and Nevis, and Guyana) as important<sup>10</sup>.

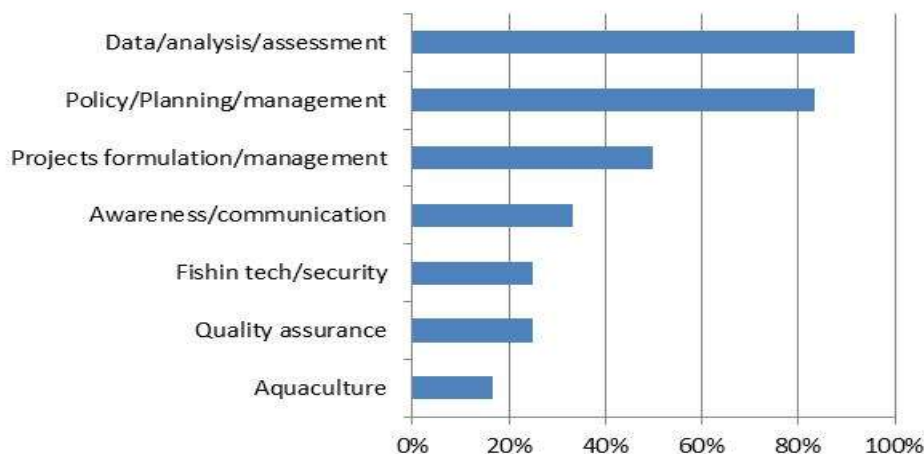


Figure 7: Training needs (categories) as identified by FDs

<sup>10</sup> It should be noted that some of the main aquaculture producing countries including Jamaica, Haiti and Suriname did not reply to the questionnaire. It should also be noted that in Belize, Aquaculture does not fall under the responsibility of the Fisheries Department, while the questionnaire was directed at Chief Fisheries Officers, Fisheries Department.

Some of the countries mentioned specifically that they need staff members with post-graduate level education in certain areas (e.g. Turks and Caicos and St. Lucia). It was not clear from the answers if the areas were listed in order of priority (although asked to do so in the questionnaire), so the categories in figure 7 do not consider the priorities. When the categories are viewed in terms of priority, i.e. how frequently (of those who mentioned it at all) the item is mentioned first or second, then 6 countries (55% of 11) put the Data analysis in either 1<sup>st</sup> or 2<sup>nd</sup> place, four (40% of 10) mentioned Policy / management first or second, and two of six (33%) put Project formulation / management in the top two. Out of the four countries which identified training needs in Awareness / communication, two put it as top 2.

#### **4.5 Received training**

The CFOs were asked to list the types of training their staff have received for the past three years (*Appendix B*). The responses indicate that the FDs have used the short term training opportunities for their staff rather than university. From the responses it is hard to determine the extent of the training, and how thorough the responses are. Turks and Caicos lists only two training activities but Belize lists over 30 activities (of different nature). It is also noticeable that e.g. St. Kitts and Nevis, Dominica, and Montserrat do not mention any of the UNU-FTP training courses held in the region although a staff member of their FDs took part in all of the five UNU-FTP short courses. The same thing can be said about Barbados and Guyana which mention the training offered by the UNU-FTP but only one short course (Guyana) and one fellowship for six months training (Barbados) even though both of these countries were represented in all of the short courses in the region. Belize, Grenada, St. Vincent and the Grenadines, Trinidad and Tobago, and St. Lucia provide an extensive list of training courses for the staff of their FDs. Overall the most dominating training that the staff has received over the past three years is in various aspects of fisheries management and ocean governance. Only one country (Belize) list short workshops on specific aspects related to its specific activities such as Lobster assessment, Shark identification, larval identification, etc. (*Appendix B*).

### **5. CONCLUSIONS AND DISCUSSION**

1. Several training opportunities exist in the Caribbean for people seeking education in the area of natural sciences. These opportunities are within the universities and also through projects and MoUs. Very few academic programs focus on fisheries and that happens mainly at graduate level but there the focus tends to be on marine and reef ecology. The study did not look into the cost of education but from interviews with both CFO and FO the cost seems to be an obstacle for young people attending universities. It would be worth looking into the possibility of a special fund for promising young students that will seek careers in natural sciences / fisheries.
2. Countries seem to seek short term training for the staff through projects. The results on this issue are not clear, but it seems that FDs need to organize the training of their staff to improve the selection of the people receiving training and also to make sure the training is put into good use. It was noticeable how differently the FDs reflected on the training of their staff. The variance is great and it could be a task for the CRFM to keep track of which countries are sending candidates for regional training to make sure that every country / FD staff has equal training opportunity in regional courses.
3. No institute in the region has the mandate to offer training for fisheries people, and for that reason there is no (systematic) training available in fisheries for professional fisheries people. Some of the work in fisheries is very specialized and there should be a regional institute that conducts regular

training for professional development. No training strategy is available for fisheries professional in the region, only *ad hoc* courses associated with externally funded projects.

4. Less than 20% of fisheries officers (FO – excluding the SFO and CFO) have a first degree. That needs to change since the role of the FO has and is changing from being collectors of information to becoming analysts of both data and situations (extension). Of all the people in the fisheries very few have a doctoral degree. The region needs experts in fisheries at the highest quality and competency that can help in analyzing information.
5. The Fisheries Departments of the CRFM members are confident about their competency in fisheries management, project implementation, and awareness and stakeholders work. That coincides with the type of training the staff has received for the past three years. At the bottom of their competency are fish processing and quality assurance issues, fishing technology and aquaculture. This should be of concern to CRFM since eight of the 12 countries listed Aquaculture as part of their main tasks and four countries identified various tasks related to Quality assurance. These areas are also highlighted in CRFM's strategic report. That noted, in some countries, other government departments / agencies are known to be responsible for some of these functions, the competency levels of which were not considered in the present survey.
6. Not surprisingly, the FDs are understaffed and the staff needs more training. Five out of 12 FDs see themselves as doing well (score >3) in terms of their mandates.
7. Most FDs identified issues related to data collection, analysis and management as a priority when it comes to training of their staff. But they also identified fisheries management issues as important although they see themselves doing well in that area.
8. Overall, the FDs put lower priority on issues related to Aquaculture and Quality assurance. This comes as a surprise since both of these issues relate to food security and safety. The capture of fish in the Caribbean is not going to increase to the level to match the needs of the region (about 100 000 tons are currently being imported to the region yearly) and future growth in fisheries will come through both increased aquaculture and value addition of the raw material. The general mandate of the fisheries divisions is to contribute to the sustainable management of the resources. Both of these elements fall within that framework.
9. The survey asked about training received for the past three years. The results indicate that either CFOs do not see short courses as part of the professional development of their staff or they do not keep track of the training their staff receives. This brings into question the management of training opportunities by the institutions concerned.
10. FDs need to be more conscious about their training needs and keep better track of the training their staff receives. They need to have a training strategy to meet the local and international future demands on fisheries. This also helps a regional body such as CRFM to organize training activities in the region.
11. To boost the research and education on fisheries in the region, a regional research fund should exist to support fisheries research in line with the regional needs.

## **6. RECOMMENDATIONS**

Although this training needs assessment may be missing some of the in-depth elements, e.g. funding and political perspectives, there are a few points that should be considered at a regional level. The CRFM Secretariat has proven to be the coordinating fisheries body that strives to monitor, listen to, and advise the Fisheries Divisions of the CRFM member states. Capacity building is a continuous activity that needs to be in place at all levels of the fisheries sector, and its focus and priority areas need to consider the national and regional policies each time. The recommending points made here are based on the outcome of the TNA and reflects also the trends and directions observed in other parts of the world where countries are trying to maximize the economic and social benefits of their fisheries.

1. CRFM Secretariat should establish a post within its organization to assist and guide member states in their capacity building. The task should be to work with the CFOs to organize the training of their staff and find training opportunities regionally and internationally.
2. In planning regional training, CRFM should be more strategic in selecting member states to participate. The need for training in a particular area/field differs among member states based on their mandates and priorities. Having 2-3 people from the same country could be better than having one participant from each member state. This approach may increase the focus of the training, and make the experience of the individual more useful during the course and upon returning, with greater support from the colleagues.
3. Regional funds should be established for promising FOs that need tertiary education but for some reason do not have financial resources. There is a need among FOs to strengthen their basic fisheries and biology knowledge. This is necessary since the role of the FOs will, in the near future, be more on developing quality data for further analysis.
4. Considering the size of the fisheries in the Caribbean, one may argue that building up infrastructure such as training facilities in every country is not efficient. CRFM should work on creating a center of excellence for selected fisheries activities. From the TNA survey the two centers that are of immediate importance are: Aquaculture research and development center, and a center for value adding activities in post-harvest handling of aquatic resources. For the aquaculture there is a great need to find an appropriate aquaculture activity (site selection – panning, and species) for each country. There is also a great need for developing feed for the region to lower the feeding cost, and to ensure good fingerlings brood stock. The supporting research is also needed (e.g. selective breeding programmes).
5. The capacity for analyzing data needs to be strengthened among the member states. Improving analytical strength will also strengthen the output of the scientific meetings for policy formulation. Funds need to be available for PhD students in the area of fisheries statistics and modeling. If fisheries statisticians are recruited to the CRFM then they need to have full access to a central database.

## Appendix A: Mission and goals of the Fisheries Divisions

Turks and Caicos	Dominica	Montserrat	St. Kitts and Nevis	Guyana	Barbados
DEMA is a TCI Government department mandated to “To ensure sustainable utilization of the natural resources of the Turks and Caicos Islands, protect and promote biodiversity and economic prosperity through a sustainable fishing industry and environmentally sustainable development and a protected areas system and improved maritime affairs.”	To enhance food security, create an enabling environment for employment, growth and development in the sector through the sustainable use of the fishery resources and enhancing the social and economic stability of the fisheries communities.	To promote, manage, develop and conserve the fisheries resources sustainably so as to achieve all socio-economic benefit in the long-term without negatively impacting the ecosystems services	It is responsible for ensuring that all matters relating to the conservation, protection, management, development and utilization of the coastal and marine resources and ecosystems are conducted in an orderly and sustainable manner.	No answer	Our mission is to ensure the optimum utilisation of the fisheries resources in the waters of Barbados for the benefit of the people of Barbados through management and development.

<b>Trinidad and Tobago</b>	<b>Grenada</b>	<b>St. Vincent and the Grenadines</b>	<b>St. Lucia</b>	<b>Belize</b>	<b>Anguilla</b>
<p>The Goal of the Fisheries Division Ministry of Food Production is the sustainable management and growth of the fisheries sector (including inland fisheries and aquaculture) by improving conservation outcomes, increasing industry self-reliance, creating systems that allow for efficient access to and allocation of resources, facilitating transparent decision-making and promoting shared stewardship.</p>	<p>The purpose of the Fisheries Division is to promote and coordinate the effective and efficient management and development, and sustainable utilization of the living marine resources within the fisheries sector for the benefit of current and future generations. The array of stakeholders involved in achieving this include the Fisheries Division as lead agency for purposes of governance, agencies having allied vested interests together with groups and individuals who use the resource. The processes towards meeting this goal will be enabled by appropriate law and administration provided by Government on the one hand whilst a co-management/ community-based management approach is pursued in collaboration with key stakeholders.</p>	<ol style="list-style-type: none"> <li>1. To build capability required for the management and development of the Fisheries sector.</li> <li>2. To facilitate Global Positioning through the establishment of national legislation and regulatory systems which are harmonised with other countries in the region.</li> <li>3. To enhance marketing and distribution of fish and fish products locally, regionally and internationally.</li> <li>4. To develop aquaculture by designing policy framework to encourage private investment and conducting research.</li> <li>5. To Strengthen Fishers' Organizations by embarking on institutional strengthening of fishers' cooperatives.</li> <li>6. To manage and develop capture fisheries by conducting research, developing management policy and regulations for the sustainability of the sector.</li> <li>7. To strengthen stakeholder participation and support through public awareness programs and co-management.</li> <li>8. To implement a risk reduction programme focusing on the vulnerable actors within the fishing industry.</li> <li>9. To develop a management plan for the operationalization of the South Coast Marine Park.</li> </ol>	<p>To foster strong partnerships between civil society, private and public sector to advance a sustainably governed fisheries sector that will enhance long -term profitability and contribute to food security.</p>	<p>To provide the country and the people of Belize with the best possible management of aquatic and fisheries resources, with a view to optimize the present and future benefits though efficient and sustainable management</p>	<p>To manage and regulate the use of Anguilla's fisheries and marine resources, in a sustainable manner, for the maximum economic and recreational benefit of the people residing in Anguilla.</p>

## Appendix B: List of training activities in CRFM member states for the past 3 years

<b>Turks and Caicos</b>	<b>Dominica</b>	<b>Montserrat</b>	<b>St. Kitts and Nevis</b>	<b>Guyana</b>	<b>Barbados</b>	<b>Trinidad and Tobago</b>
1. Lionfish management 2. Statistical analyses	1. IOI fisheries policy and Oceans governance (2 months) 2. Assessment of reef health and ecology (2 weeks) 3. Coastal fishing techniques and sustainable resource use (3 months)	1. Ocean Governance: Policy, Law and Management  2. MSc Coastal and Marine Resources Management	1. Fisheries Management - 5 weeks 2. Project Management - 1 week 3. Fishing Cooperatives Management - 3 months 4. Stock enhancement - 3 months 5. Oceanography and GIS - 3 months	1. MSc - fisheries Policy (1 year) 2. Leadership training (1. week) 3. Fisheries Policy, Management, and Governance - IOI (2 months)	1. UNU-Fisheries Training Programme (6 month course)	1. Leadership (2 staff) 2. Project Management (1 staff member) 3. Procurement in the public sector, 1 staff) 4. Occupational Safety and Health (Basic Fire Management all staff, first aid most staff) 5.SPSS Software application Research Staff 6. Climate Change Adaptation (i staff) 7.On the Job Application EAF Tool Kit (introduction) 8. Selected Communication and Collaboration Tools 9. Selected National short courses pertinent to the public service of Trinidad and Tobago.



<b>Grenada</b>	<b>St. Vincent and the Grenadines</b>	<b>St. Lucia</b>	<b>Belize</b>	<b>Anguilla</b>
1. Fisheries Law and Management - 5 weeks 2. Advance Leadership - 1 week 3. Strategic Project Management - 1 week 4. Policy Formulation and Analysis - 6 weeks 5. Project Cycle Management and Cost Benefit Analysis - 6 weeks 6. Extension Methodology - 3 months 7. Coastal Fishing Techniques for Sustainable Resource Use - 3 months 8. Programme Monitoring and Evaluation - 1 week 9. Fisheries Development and Management - 1 month 10. Sustainable Development of Ocean and Fishery - 3 weeks	1. The United Nations: The Nippon Foundation of Japan Fellowship: 9 mths 2. International Ocean Institute Training Program on Ocean Governance: Policy, law and Management: 8 weeks 3. Six Months Full Study Fellowship (United Nations University): 6 months 4. CARIFICO Project promoting cooperative Self Governance of Caribbean Fishery Resource 5. Project Cycle Management: 1 week 6. Training for Fisheries Officer at the Australian National Centre for Ocean Resources and Security (ANCORS), University of Wollongong: 5 weeks 7. Queen Conch Validation Workshop: 18 days 8. ACP Fish II: Programme Monitoring Workshop 9. FAD Fishery Management Workshop 10. CRFM/ACP Fish II/ ICT Regional Training Workshop	1. Underwater visual surveys for evaluating the status of queen conch stocks. (3 weeks) 2. Digital Asset management (4 days) 3. Coastal fishing techniques for sustainable resources (4 months) 4. JICA training and dialogue programme (3 months) 5. Leadership in Fisheries (1 week) 6. Fisheries Law Management training workshop (2 months) 7. Project cycle management - (1 week) 8. Coral reef / sea turtle Crime scene investigation (2 weeks) 9. Stock assessment (6 months)	1. Case file compilation training 2. Building compliance and enhancing enforcement for Marine Protected Areas 3. Spawning aggregation working group (SPAG) training and monitoring 4. Coral reef restoration 5. Conch survey training 6. Species Identification training using DNA barcodes 7. Protected areas management effectiveness training course 8. Basic statistical training 9. Caribbean Regional Coastal and Marine Spatial Planning- Advancement training 10. CRFM/ACP Fish II Regional Training on CRFM Website tools 11. Fisheries Law and Management training workshop for Chief and Senior Fisheries Officers 12. Financial Management 1 13. Project cycle management training 14. Climate Change Modelling training 15. Enforcement and compliance monitoring training 16. Climate Change Introductory training 17. Smart Patrol and GPS logging Training 18. Production of Pacific Oyster Training 19. WWF Climate Change Adaptation and Recovery, Risk and Reconstruction training 20. Special Operations Training 21. Shark fin data collection 22. Conch assessment preparatory training 23. Lobster assessment preparatory training 24. Sea cucumber training workshop 25. Shark identification workshop and training 26. Fisheries Management training 27. Manage access workshop and training 28. Spiny lobster larval identification training 29. ACP Fish II Training on Underwater visual survey techniques for Queen Conch Stock Assessment 30. Advanced Leadership Training 31. Fisheries Data Management training 32. Enforcement of trade controls training 33. Port sampling and data collection workshop and training	1. Fisheries Management (1 week) 2. Fisheries enforcement (1 week) 3. Senior management civil service training (1 week) 4. Fisheries Statistics (1 week)

## Appendix C: The Training Needs Assessment Survey

CRFM Training Needs Assessment

<https://docs.google.com/forms/d/18dtyxgy39YHR6HWqILZ5IQPaM...>

### CRFM Training Needs Assessment

CRFM is conducting a training needs assessment among the fisheries administrations in its member states. This questionnaire is for the Chief Fisheries Officer or the acting head of the fisheries departments. Kindly answer the following questions to the best of your knowledge. Read the questions carefully and most of them have to be answered in order to submit the form. Full confidentiality is provided.

\* Required

1. **Select the country you represent \***

Mark only one oval.

- ☐ Anguilla
- ☐ Antigua and Barbuda
- ☐ The Bahamas
- ☐ Barbados
- ☐ Belize
- ☐ Dominica
- ☐ Grenada
- ☐ Guyana
- ☐ Haiti
- ☐ Jamaica
- ☐ St. Kitts and Nevis
- ☐ St. Lucia
- ☐ Montserrat
- ☐ St. Vincent and the Grenadines
- ☐ Suriname
- ☐ Trinidad and Tobago
- ☐ Turks and Caicos

2. **Write the official goal or the role of your division/department \***

Please write the official goal if it exists. If the goal or the objectives are not clear then write to the best of your knowledge the role of the division/department

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3. **What is the total number of full time staff (including you) in your division/department? \***

Count only those that are permanently employed full time.

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4. **What are the main projects/tasks of your division/department and indicate how many of your staff (by category) are allocated to each activity/project? \***

Kindly provide up to 10 main projects/tasks that your division/department is currently undertaking and/or will undertake within the next 5 years. Staff categories are: SFO, FO (desk), FS (field officers), OS (administrative)

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**5. What is the academic qualification of the Chief Fisheries Officer? \***

Check all that apply.

- ☐ PhD
- ☐ MSc
- ☐ BSc/BA
- ☐ Diploma
- ☐ O-level
- ☐ Other: \_\_\_\_\_

**6. Please fill in the number of staff/category \***

Mark only one oval per row.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15
Senior Fisheries Officers (SFO)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fisheries (desk) Officers (FO)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Field staff (FO in the field) (FS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Office staff (OS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**7. What are the academic qualifications of the SFO? \***

Indicate how many have MSc (specialities), BSc (specialities), Diploma and/or other types of education

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**8. What are the academic qualifications of FO? \***

same as previous

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**9. What are academic qualifications of the field staff (FS)? \***

same as previous

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**10. What are the academic qualifications of the office staff (OS) \***

same as previous

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

11. What is the gender ratio among staff/categories? \*  
e.g. SFO: xx% women, FO: yy% women etc

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12. This is a question about the age structure among the staff of the FD (F8).  
Indicate the number of Field Staff (FO in the field) for each age group  
Mark only one oval per row.

	1	2	3	4	5	6	7	8	9	10
<20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20-24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25-29	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30-34	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35-39	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40-44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45-49	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50-54	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55-59	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
>60	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. This is a question about the age structure among the staff of the FD (FO).  
Indicate the number of Fisheries Officers (desk) for each age group  
Mark only one oval per row.

	1	2	3	4	5	6	7	8	9	10
<20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20-24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25-29	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30-34	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35-39	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40-44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45-49	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50-54	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55-59	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
>60	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**14. This is a question about the age structure among the staff of the FD (OS).**

Indicate the number of Office/administration staff (OS) for each age group

Mark only one oval per row.

	1	2	3	4	5	6	7	8	9	10
<20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20-24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25-29	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30-34	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35-39	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40-44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45-49	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50-54	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55-59	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
>60	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**15. This is a question about the age structure among the staff of the FD (SFO).**

Indicate the number of Senior Fisheries Officers for each age group

Mark only one oval per row.

	1	2	3	4	5	6	7	8	9	10
<20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20-24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25-29	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30-34	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35-39	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40-44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45-49	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50-54	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55-59	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
>60	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**16. Kindly provide the top 5 areas in which your department/division (staff) needs training\***

In order of priority (most important first). You may be as specific as you want.

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## 17. Rate the competency of your division in carrying out the following tasks \*

1=poorly and 5=excellent

Mark only one oval per row.

	1	2	3	4	5	Not applicable
Fisheries Management (adopting, reviewing, and amending regulations based on National Fisheries Policy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing agreed fisheries management objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development and implementation of fisheries management plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Licensing and Registration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surveillance and Enforcement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing Technology (gear/boat) and Development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exploratory Fishing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension Work/Training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fisheries Data Collection and Data Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administration of Loans and Subsidy Programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resource Assessment/Data analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aquaculture extension/technical support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aquaculture research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality assurance (post harvest)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish processing techniques	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project implementation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication to/with stakeholders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stakeholder participation in management planning and decision-making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outreach/Awareness programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 18. Kindly value the importance of the following statements and questions \*

1=disagree and 5=agree

Mark only one oval per row.

	1	2	3	4	5
The department/division carries out its duties well and in timely manner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have enough staff to perform all necessary tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The training of the staff is not utilized effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff needs more training to carry out the department's duties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The department is rather understaffed then under-trained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staff can always apply his/her training in the job after completing a training session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staff communicates well with stakeholders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The department/division has to prioritize to be able to carry out the most important activities/tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 19. How do you rate the over-all performance of your department/division \*

1=poorly and 5=excellence

Mark only one oval.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 20. List the types, and the duration, of training (courses) you and your staff have received for the past 3 years. \*

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## Appendix D: The identified major tasks in the Fisheries Divisions

Turks and Caicos	Dominica	Montserrat	St. Kitts and Nevis	Guyana	Barbados
<p>Queen Conch Visual Survey FS(3) SFO (1) OS (1) FO (1)</p> <p>Lionfish Management Programme FS(2) SFO (1) OS (1) FO (1)</p> <p>Caribbean Spiny Lobster Management FS (2) SFO (1) FO (1) OS (1)</p> <p>Pelagic Fisheries Study FS (2) SFO (1) FO (1) OS (1)</p> <p>Habitat Assessment Caribbean Spiny Lobster SFO (1) FO (1) FS (3) OS (1)</p>	<p>1. Disaster risk reduction management &amp; planning (SFO, &amp; 2 FLO's)</p> <p>2. Data management (1 FLO, 12 Collectors &amp; 1 data entry clerk)</p> <p>3. Promoting the consumptive use of fish &amp; reduction of food import bill (1 FO &amp; 2 FLO's)</p> <p>4. Enhancing the co-management activities in the Fisheries governance process and strengthening NFO's (CFO, SFO, 1 FO &amp; 3 FLO's)</p> <p>5. Enhancing fish productivity and quality assurance in FAD fishery (1 FO &amp; 2 FLO's)</p> <p>6. Marine Mechanics and repair (1 mechanic)</p> <p>7. Basic Fishermen training program (CFO, 1 FO, &amp; 3 FLO's)</p> <p>8. Fishing gear and technology training &amp; exploratory fishing (CFO &amp; 2 FLO's)</p> <p>9. Strengthening the management of MPA in Dominica (CFO, SFO, &amp; 1 FLO)</p> <p>10. Fisheries Licensing and registration program (3 FLO's)</p>	<p>1. Review, analyse and revise fisheries legal instruments (policy, legislation, regulation and plan) (CFO).</p> <p>2. Human capacity building for both fisheries staff and stakeholder to effectively manage the resources (CFO)</p> <p>3. Strengthen local fisheries organisation (CFO);</p> <p>4. National maritime boundary delimitation (CFO);</p> <p>5. Use a combination of instruments to manage and develop the fisheries; (CFO)</p> <p>6. Improve fisheries data collection, storage and management system (Data Collectors);</p>	<p>Fisheries Management - 2 persons</p> <p>Data Collection and Analysis - 4 persons</p> <p>Extension - 4 persons</p> <p>MPA Development - 4 persons</p> <p>FAD Fishery Development - 4 persons</p> <p>Aquaculture Development - 4 persons</p> <p>Record Keeping - 2 persons</p> <p>Enforcement - 1 person</p> <p>Marketing - 1 person</p> <p>Environmental Monitoring - 3 persons</p>	<p>Implementation of the Fisheries Management Plan (all)</p> <p>Aquaculture policy and strategic production plan</p> <p>Updating of regulations</p>	<p><u>Food Safety</u> Examination of plants and equipment for compliance with local and international food safety standards Oversees maintenance of major fish landing sites</p> <p><u>Accounts</u> Collects fees for tractor haul up and launch, Pays bills, prepares requisitions for items to be purchased by the Fisheries Division</p> <p><u>Biological</u> Performs research and data collection towards assessing the state of the various fisheries and suggests conservation and development methods</p> <p><u>Services</u> Registration of fisherfolk and vessels, performs inspection of fishing vessels in accordance with local and international standards, provides haul up and launch services for local fishing vessels.</p> <p><b>LEGAL FRAMEWORK</b> The Fisheries Act(Cap. 391 section 4):Provides the legal authority for management and development of fisheries in Barbados and for the administration of the Fisheries Act</p> <p>Existing legislation</p> <ul style="list-style-type: none"> <li>• Fisheries Act (1993, amended 2000):</li> <li>• Fisheries (Management) Regulations (1998):</li> </ul> <p>Proposed legislation expected to be completed and entered into force shortly</p> <ul style="list-style-type: none"> <li>• Fish Quality and Inspection Act and Regulations:</li> <li>• Fisheries (Fees) Regulations:</li> <li>• Fisheries Regulations:</li> <li>• Aquaculture Regulations:</li> </ul> <p>Fisheries related legislation</p> <ul style="list-style-type: none"> <li>• Markets and Slaughterhouses Act (1958):</li> <li>• Barbados Territorial Waters Act (1977):</li> <li>• Marine Boundaries and Jurisdiction Act (1978):</li> <li>• Defense Act (1979):</li> <li>• Shipping Act (1994):</li> <li>• Registration and inspection of large vessels</li> <li>• Coastal Zone Management Act (1998):</li> <li>• Marine Pollution Control Act (1998):</li> </ul>



Trinidad and Tobago	Grenada	St. Vincent and the Grenadines	St. Lucia	Belize	Anguilla
1. Update of Fisheries Management legislation; 2. Provision/Upgrade of Fisheries Infrastructure (24 projects) 3. Waste Water Management at Fish Landing Facilities 4. Climate Change Vulnerability and Disaster Management 5. Implementation of a Vessel Monitoring Programme 6. Establishment of a Commercial Aquaculture Demonstration Station 7. Implementation of a Moratorium on Cascadu (Hoplosternum littorale) and Black River Conch 8. Fisheries Management Legislation Awareness Campaign 9. Elaboration of a National Plan of Action for Sharks 10. Development/Updating of Fisheries Management Plans	1. Planning, Development, Management & Coordination - (1) CFO 2. Data Entry / Collation & Clerical: OS - 3; 3. Secretarial: OS 1 4. Quality Assurance: SFO - 1 5. Fisheries Extension: SFO - 1; FO - 1; FS - 1 6. Monitoring, Control & Surveillance: FO - 1 7. Resource Assessment & Management: FO - 1 8. Marine Protected Areas: SFO - 1; FS - 2; OS - 1 9. Refrigeration Maintenance: FO - 1; FS - 1	1. Building Capability required for the management and development of the Fisheries sector. 2. Facilitating Global Positioning through the introduction and refinement of national legislation. 3. Development and implementation of marketing and distribution systems 4. Development of Aquaculture 5. Management and Development of Capture Fisheries 6. Reduction of risks to stakeholders 7. Strengthening of stakeholder participation and public support 8. Management and conservation of the marine environment.	1. Fisher training and development in fish quality standards; safety at sea; lionfish handling and processing; boating operations and safety - FO (desk) - 2, FS (field officers)-4 2. Marine resource management: monitoring of coastal resources; reporting on fisheries status - FS (field officers) - 4; FO (desk) - 1 3. Ridge to reef management of coastal resources - FO (desk) 4 4. FAD management and development - FO - 1; FS -5 5. Aquaculture development: pond construction, quality standards, cooperative development, hatchery management - FO- 1; FS-2 6. Mariculture development: Cooperative development, farm management, marketing and best practices in production - FO- 2; FS - 3	1. Target fisheries research and education - 2FO, 4 FS 2. Fisheries development and innovative management - 2 FO, 1 FS 3. Statistical analysis and Data management - 4 FS 4. Fish stock assessment - 2 FO 5. Inland fisheries management - 2 FO 6. Licensing and permits - 2 OS, 1FO 7. Marine Protected Areas Management - 7 FO 8. Biodiversity conservation and research - 1 FO. 1... 9. Fisheries Policy and Planning - 1 SFO, 1 FO, 10. Environmental stewardship - 1SFO, 1FO 11. Enforcement and compliance - 20 FS, 12. Resource mobilization and public awareness - 1 SFO, ... **Some staff overlap in different projects	Fish catch data collection Habitat monitoring In-water seaturtle monitoring Beach monitoring Lionfish research Licensing of fishers and fishing vessels Mooring buoy installation and monitoring Fish stock assessments Surveillance and law enforcement Public awareness and outreach

### **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.

CRFM members are Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago and the Turks and Caicos Islands.

