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## JICA / CRFM Workshop:

# PROMOTING THE DEVELOPMENT OF GOOD PRACTICES FOR FISHERIES MANAGEMENT AND DEVELOPMENT



25 - 27 July 2012  
Kingstown, St. Vincent and the Grenadines

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CRFM Secretariat  
Belize  
2012

# **CRFM Technical & Advisory Document - Number 2012 / 11**

**Report of the JICA / CRFM Workshop: Promoting the Development of Good Practices for Fisheries Management and Development, 25 – 27 July 2012, St. Vincent and the Grenadines**

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Belize  
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Report of the JICA / CRFM Workshop: Promoting the Development of  
Good Practices for Fisheries Management and Development, 25 – 27 July  
2012, St. Vincent and the Grenadines

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## **1.0 Background**

Most of the fisheries within the region are artisanal / small-scale in nature. With many of the resources such as conch, lobster and red snappers being fully or overexploited, this calls for an approach to fisheries management in which there should be greater local stewardship; greater responsibility, authority and participation of fishermen in decision-making; and recognition of not just fish, but the ecosystems in which they live. Such “co-management” recognizes the need for management decisions to be made in collaboration with fishermen who use and depend upon the resource (Pomeroy, 2004).

As part of the series of good practices workshops, the first in February 2012 having dealt with promoting the development of good practices for quality assurance and marketing of fish and fish products, JICA, in collaboration with the CRFM, will be hosting a workshop to promote the development of good practices for fisheries management in order to further develop the capacity of fisheries officers and fisherfolk leaders from Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines, where JICA fisheries experts are presently assigned. The information on best practices will be shared not only among the participating countries, but, through this workshop, will be documented and disseminated to all CRFM, CARICOM and CARIFORUM States.

### **1.1 Meeting Objective**

The objective of the workshop is to exchange information on good practices for fisheries management and development in the region, discuss the potential and limitations of co-management, registration and licensing systems, data collection and management systems, and outline action plans for the effective management of specific fisheries such as those for conch, lobster, and pelagics caught around fish aggregating devices (FADs).

### **1.2 Approach**

The Workshop involved a series of case studies and other presentations on topics addressing fisheries management (conch fishery, FAD fishery, pot fishery); data collection and management; licensing and registration; ecosystems approach to fisheries; and integrated coastal management. It also included working group sessions to review and revise fisheries management plans for the conch, pot and FAD fisheries using the project cycle management (PCM) process.

## **2.0 Opening Ceremony**

A brief Opening Ceremony was held, with the speakers being Mr. Raymond Ryan, Chief Fisheries Officer, Fisheries Division, St. Vincent and the Grenadines; Mr. Nariaki Mikuni, Senior Fisheries Expert, Latin America and the Caribbean Department, JICA; and Mr. Nathaniel Williams, Permanent Secretary, Ministry of Agriculture, Rural Transformation, Forestry and Fisheries, St. Vincent and the Grenadines. Dr. Susan Singh-Renton, Deputy Executive Director, CRFM Secretariat delivered the Vote of Thanks. The speeches are included as *Appendix 1*.

### **2.1 Introduction of Participants**

The participants from Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines introduced themselves, and provided brief information on their respective roles in the fisheries management process and the agencies they represented. Representatives from CRFM and JICA also participated in the meeting. A list of participants is included as *Appendix 2*.

## **2.2 Adoption of Agenda and Workshop Arrangements**

The Draft Workshop Agenda (*Appendix 3*) was reviewed. The Agenda Item titled: *Fisheries co-management in other regions - Bay of Bengal Large Marine Ecosystem (BOBLME)* could not be completed as planned since the presenter, Dr. Yugraj Yadava, was unable to attend the Workshop. Presentations titled: *Sato-Umi: New Japanese Concept for Coastal Management*; and *Japanese Fisheries Cooperatives* were made instead. Participants also agreed on the logistics and approach to conducting the workshop.

## **3.0 Case Studies - Good Practices in Fisheries Management**

Under this agenda item, a number of presentations were made which examined the following:

- the effectiveness and efficiency of fisheries co-management as well as its potential and limitations for future application;
- the legal/regulatory framework and principles for improved fisheries management taking into account the international and regional fisheries and related instruments;
- the experiences on planning and conducting fisheries censuses in Dominica and St. Lucia;
- the experiences of Antigua and Barbuda and Dominica in the use of registration and licensing of fishers and fishing vessels as tools in fisheries management;
- the experiences of Antigua and Barbuda and Dominica in the use of registration and licensing of fishers and fishing vessels as tools in fisheries management;
- the need for fisheries statistics and information at the regional level for informed decision making and the types of statistical reports required by the FAO and ICCAT;
- the use of EAF in sustainable fisheries development; and
- the need for stakeholder collaboration and inter-sectoral approaches to integrated coastal management.

Summaries of these presentations and the ensuing discussions are presented below. The presentations are published in pdf format as an electronic supplement to this report.

### **3.1 Dominica - FAD fishery-management involving fisherman's organizations**

*(Mr. Jullan DeFoe, Fisheries Liaison Officer, Fisheries Division, Dominica)*

#### **3.1.1 Presentation Summary**

Fish Aggregating Devices were first introduced to Dominica in 1987 by FAO's Master Fisherman Richard Mounsey. At this time the Dominican fishermen did not fully understand the concept. In 1990, another FAO Expert attached to the Fisheries Division re-introduced the idea but was faced with the same issues as his predecessor, such as fishers cutting the FAD anchor ropes and taking the buoys. In 1995, Dominican fishermen began warming up to the FAD idea due to the persistence of the Fisheries Division in an effort to increase fish landings. Consequently, Dominican fishermen began constructing and deploying deep water FADs for the purpose of optimizing their catch in a more efficient and economical manner.

In the past decade, FAD fishing has grown from accounting for 5% in 2000 to 74% in 2010 of the total fish production in Dominica. Over time, the governance of FAD fishing took on an *ad hoc*, uncoordinated and unregulated approach which called for immediate attention to address the growing incidence of conflict.

The growing number of conflicts surrounding the use of FADs led to the intervention of fishers' organizations and government to resolve these problems. Twelve national consultations were held island-wide between 2009 and 2010 to solicit feedback from fishers on the problem and to receive recommendations for possible solutions. Prior to these consultations, two national workshops on "FADs; Impact, Evaluation, Solution and Policy" were conducted by the Dominica Fisheries Division in 2003 and 2007. The workshop and consultations also sought solutions and general agreement which led to the development of a co-management strategy with the National Association of Fisherfolk Cooperatives (NAFCOOP). As a result, FAD management regulations were drafted by a legal consultant who had attended all the national consultations held with fishers. Some of these management instruments were tested under the Dominica FAD Pilot Project which was a pilot project conducted during the implementation of the CRFM/JICA Master Plan Study. In the absence of the FAD management regulations, which is expected to be gazetted very soon, NAFCOOP has relied upon voluntary compliance.

### **3.1.2 Discussion**

The importance of co-management in the FAD fishery was recognized by the workshop participants. The workshop was informed that Antigua and Barbuda and St. Kitts and Nevis had started experimenting with the use of FADs, and it was expected that Grenada would be receiving some experimental FADs under the Moored Fish Aggregating Devices in the Lesser Antilles (MAGDELESA) project. It was noted that apart from Dominica and St. Lucia, FADs were mostly a new technology for the other islands and, as such, it should be easier to introduce appropriate rules and regulations. The examples of user fees and deployment rights and reporting of catch and effort data were recognized as good initiatives in Dominica, despite setbacks experienced due to fishers' reluctance to cooperate. The urgent need for approval of the FAD fishery regulations by parliament was also highlighted.

In terms of FAD user fees, the meeting agreed that the charge of EC\$0.20 per pound of landed fish was not feasible and suggested that a monthly fee should be established. It was suggested that the local primary fisheries organizations and NAFCOOP should establish an appropriate user fees and develop an agreement for payment. The workshop was informed that this issue was expected to be addressed by the newly elected Secretary of NAFCOOP.

There was some discussion on the need for the FAD legislation to specify the number of FADs that could be deployed. It was noted that since the Fisheries Division was in charge of marine resource management, the Chief Fisheries Officer could put a cap on the number of FADs in the water if necessary. The meeting agreed that there was also the need for scientific monitoring of catches as this would allow for informed decision-making.

The meeting discussed the FAD situation in St. Lucia and it was noted that some communities were territorial about their FADs. The varying educational levels of the fishers and the fact that some fishers only spoke creole were highlighted as factors that needed to be taken into consideration when the Fisheries Divisions / Departments were implementing management regulations. It was agreed that the methods of FAD placement and deployment in St. Lucia should be reviewed. It was also suggested that a special meeting, which included fishers, should be facilitated to examine the Dominican FAD experience. The meeting was informed that the construction and deployment of FADs was done by the St. Lucia Fisheries Department in collaboration with the fisheries cooperatives.

The high level of interest among countries in developing their pelagic fisheries and using FADs was noted, and there was some discussion on the need for regulations that were consistent with the Fisheries Act. It was also pointed out that the imposition of taxes on landed fish or for the use of FADs were high

level decisions which required parliamentary approval. The issue of user conflict was discussed and it was noted that as the majority of FADs in Dominica were private, fishers usually tried to prevent others from fishing one mile around their respective FADs, but this was illegal. It was pointed out that in Dominica a FAD should not be deployed without written permission from the Chief Fisheries Officer; however enforcement of this measure was an issue.

The fact that there was an increase in landings of large yellowfin tunas and marlins for Dominica as a result of FAD use was noted. There was some discussion on the issue of fishers targeting juvenile fish around the FADs and the need for management of this activity. It was pointed out that in Dominica; communities from the East coast usually targeted juveniles as bait whereas on the West coast they were considered target species. The meeting was informed that the Fisheries Division had conducted numerous educational drives to address this issue. It was pointed out that the implementation of punitive measures in small communities was usually a difficult task. The lack of size regulations for pelagic species was also noted as an issue in managing these resources.

The need for the provision of incentives for fishers to purchase FAD fishing licenses in Dominica was highlighted. The workshop was informed that the cost of the license was \$100 EC which allowed access to all FADs managed by NAFCOOP. Given that the average cost of a FAD was \$5,000, this was expected to serve as an incentive since the fisher would not have to invest in a FAD. The meeting was also informed that prominent fishers from communities were used to encourage other fishers to purchase licenses. It was agreed that fishing licenses would help to deter illegal fishing and allow other fishers to easily identify illegal fishers

### **3.2 Antigua and Barbuda – Queen Conch (*Strombus gigas*) fishery - assessment and formulation of the fisheries management plan**

*(Mr. Ian Horsford, Senior Fisheries Officer / Food Safety Specialist, Fisheries Division, Antigua and Barbuda)*

#### **3.2.1 Presentation Summary**

The first part of the presentation on the conch fishery of Antigua and Barbuda focused on the governance of the fishery. Over the past decades there has been a gradual shift in governance approach from one that is “top-down” and centralised to one that is “participatory” and devolved. This shift in governance comes from a recognition that involvement of stakeholders in the decision-making process can lead to increased understanding of management decisions; improved compliance by user groups; mitigated user conflicts; improved relationship with stakeholders; and increased effectiveness of fisheries governance.

The second part of the presentation addressed the results and management decisions of a 2011 conch morphometric study, which was undertaken in partnership with the conch fishers from Antigua, and funded by Japan International Cooperation Agency. The findings of this study were presented in a paper entitled: “*The Morphology of the Queen conch (Strombus gigas) from the Antigua and Barbuda Shelf – Implications for Fisheries Management*”, at the 64th Gulf and Caribbean Fisheries Institute Conference (GCFI) held in Mexico. The findings of the study indicated that conch exhibited morphological differences with respect to location, sex and maturation stages, which required a multifaceted management approach to ensure long term sustainability. Based on the fore mentioned, fishery managers and conch fishers from Antigua and Barbuda have opted for a combination of management measures involving minimum size restriction, protected areas, closed season and “limited entry” for the fishery.

The study highlighted that fisheries research and management can be more cost-effective if fishers are actively involved in the process, and participation of fishers in research can lead to greater “buy in” with respect to management decisions related to research.

### **3.2.2 Discussion**

There was discussion on the rotation of queen conch fishing grounds, with it being noted that if an area had a lot of juveniles, the fishers would usually note the location and return after a certain period of time.

The meeting was informed that SCUBA diving was the main method used in the Antigua and Barbuda fishery, and training and certification of all queen conch fishers were mandatory. It was noted that the average number of tanks used was two, and the deepest dives, ranging from 83 – 93 ft, were done first. The fact that the established safe limits for dives were intended for recreational divers and not for fishers conducting manual labour was raised.

The workshop discussed the impact of the sanctions placed on the queen conch fishery in the 1990s by CITES and noted that the fishery had since recovered with an approximate 4/5 fold increase in abundance. The example of the Belize queen conch fishery was discussed. It was pointed out that the Belize conch fishery operated under a TAC system which depended on the results of abundance surveys that were conducted every two years. The meeting was informed that within the last two years there had been an increase in abundance and the quotas were increased by 10%. However, the quotas were filled within half of the usual time and the larger fishers took more queen conch earlier in the season which left the smaller fishers at a disadvantage. As a result, Belize was now considering individual quotas. Reference was also made to the Jamaican fishery in which there was a flexible open season as the regulation gave the power to the Minister to determine when fishing was allowed. The workshop agreed that when regulations were being developed they should be flexible and the principal legislation should be broad, with the details being placed in the regulations.

The use of alternating marine reserves as a management measure was discussed and it was pointed out that this was a traditional practice successfully conducted in the Pacific. It was noted that once there was agreement from fishers on a particular management measure, it would work.

The upcoming ACP Fish II project queen conch surveys were discussed. The meeting was informed that the project was in the process of selecting the consultants. Follow up on this matter would be done by the CRFM Secretariat as the project is due to end in May 2013 and this was a concern.

The workshop was reminded that in choosing a stock assessment method, if a country had a large shelf area conch abundance surveys may not be relevant. As an alternative, morphometric data could be used along with catch and effort data and this would provide baseline data for certain areas. The importance of using professionals i.e. conch fishers in abundance surveys was also highlighted. The meeting agreed that similar morphometric surveys should be conducted in other countries.

### **3.3 Dominica - Pot fishery, including efforts to reduce ghost fishing**

*(Mr. Jullan DeFoe, Fisheries Liaison Officer, Fisheries Division, Dominica)*

#### **3.3.1 Presentation Summary**

Over 4,500 fish pots were lost in the Dominican pot fishery during the passage of Hurricanes Lenny in 1999, Dean in 2007 and Omar in 2008. It is estimated that fishers lose on average five percent of the pots deployed annually through theft, relocation due to changes in tides and currents, encounters with marine traffic and conflict with other fishing operations.

For the first part of the study, ten bio-degradable fish pots were used to simulate lost pots. Experiments were conducted using three types of bio-degradable tying materials (jute twine, two-ply rope and sisal twine). After forty-five to fifty days, the jute twine bio-degraded. This is the material that was used for the national study.

Part two contained forty-five pots with bio-degradable panels, which were deployed by ten fishers in six communities on the East and West coasts of Dominica. The pots were of straight funnel and gooseneck type entrances. These pots, which retain full capture function, will continue to fish well in excess of twelve months. During continuous observation over a seven month period, fin fish were entrapped at an average of 189 fish per pot. It was also observed that even after one year, the capture function was still present in some pots.

The Fisheries Act #11 of 1987 does not require that fish pots in Dominica be fitted with an escape panel as part of a management tools for the sector. Most fishers agreed that the modified fish pot (with the bio-degradable escape panel) was a definite improvement and one that should be made mandatory.

### **3.3.2 Discussion**

The meeting was informed that future research was planned and included the development of guidelines for fish pots use, registration and tagging. This would also be useful in determining appropriate compensation when fishers reported lost pots during Hurricanes.

## **3.4 Legal / regulatory framework and principles for improved fisheries management** *(Mr. Milton Haughton, Executive Director, CRFM Secretariat)*

### **3.4.1 Presentation Summary**

The presentation on legal / regulatory framework and principles for improved fisheries management set out as its learning objectives the challenges and issues regarding living marine resource governance; review of the key principles of governance; and identification of some weaknesses in the legal and institutional frameworks as well as some implementation issues. It identified some of issues and threats as climate change and sea level rise; habitat loss and degradation; pollution (maritime and land-based); impact from growing tourism and agriculture; over-exploitation of marine resources; growing global demand and trade; international maritime transportation; maritime boundary delimitation and weak legal and institutional frameworks and poor coordination among stakeholders.

The presentation then proceeded to demonstrate the importance of governance, more especially ocean governance, focusing on some of the relevant principles of living marine resource governance such as sustainable use; precaution and the ecosystem approach. It addressed fisheries governance systems applicable in the Caribbean, the nature of principles, rule of law, national implementation, fisheries legislation and regulations and the application of global norms, including multilateral environmental agreements and other arrangements. It also dealt with regional treaties and institutional arrangements such as the Caribbean Environmental Programme, Revised Treaty of Chaguaramas, Caribbean Regional Fisheries Mechanism and other relevant regional organisations. In addition, it looked at the strengths and weaknesses of the global, regional and national instruments as they related to the relevant principles of living marine resource governance.

The presentation concluded that a comprehensive legislative framework was required to achieve peaceful, sustainable and equitable use of fisheries and that there were limited successes to date. The overall principles of governance of living marine resources were not adequately incorporated in domestic

legislation. It noted that more needed to be done to implement legislation/regulations, with there being the need for education, training and the creation of public awareness.

### **3.4.2 Discussion**

There was a brief discussion about the negative impacts that coastal mining operations were having on the fisheries in Dominica and it was queried whether the fishers could bring a case against the miners. It was indicated that if the mining operations were being conducted by private operators then this was possible and legal advice would be necessary.

## **3.5 Dominica - Fisheries census-planning and implementation**

*(Mr. Derrick Theophile, Fisheries Liaison Officer, Fisheries Division, Dominica)*

### **3.5.1 Presentation summary**

The Fisheries Industry Census (FIC) is a tool used by the Fisheries Division of Dominica to carry out an assessment of the fisheries industry. It is a study of the socio-economics of the industry, looking at the key players and their interactions. It seeks to determine the status of the industry at a particular point in time.

The 2011 FIC is the second of its kind for the Commonwealth of Dominica, the first of which was done – in 2008. That study resulted in the publication of a report with vital, never before documented details and essential local knowledge useful for managing the industry.

In 2011, 772 persons were interviewed by nine enumerators. The island was divided into fifteen Fisheries Enumeration Districts (FEDs), each having at least one enumerator charged with the task of finding and interviewing the respondents, completing the questionnaires, then returning the completed questionnaires to the office of the Fisheries Division. The enumeration process took place over the course of one and a half months during the latter quarter of the 2011.

Respondents represented various components of the fisheries industry, with fishers being the largest group, making up about 85% of the respondent population. Other groups included boat owners (46%), vendors (31%), gear builders/repairers (11%), boat builder/repairers (12%), outboard engine mechanics (3%) and equipment suppliers (1%). These are the key stakeholders of the industry, most of who perform multiple roles and have been operating for many years.

A grand total of 434 fishing boats were counted, 52% of which were keel, 28% pirogue (fiberglass / FRP) and 20% canoe. The fishing fleet was described in further detail (propulsion devices used, boat size, crew, level of activity) and the cost of operation was calculated.

Overall, the study helped to accomplish two main things: (1) the updating of the existing registration and other databases of the Fisheries Division; and (2) the updating of information on the performance of the industry. These updates allow for improved knowledge for managing the precious marine resources of Dominica while developing a sustainable fisheries sector.

### **3.5.2 Discussion**

The workshop suggested that the marketing of fish and fish products was critical to the success of the industry, and, as such, the factors affecting improvement in this area needed to be addressed.

### **3.6 St. Lucia - Fisheries census-planning and implementation**

*(Ms. Yvonne Edwin, Fisheries Assistant, Department of Fisheries, St. Lucia)*

#### **3.6.1 Presentation summary**

The 2012 Saint Lucia Fisheries Sector Census is the first comprehensive Fisheries Sector Census to be undertaken in Saint Lucia. The aim of the census is to conduct a thorough review of the fishing sector which would in turn provide management with essential information for planning at the local, regional and international levels. The census would also provide the Department of Fisheries with an updated fishery information system. The overall objectives of the census are as follows:

1. To provide, review and evaluate data on the structure of the fishing sector.
2. To provide data for establishing the social and economic welfare of fishers and their families.
3. To provide frames for proposing improvements to the current data collection and analysis system or the design of future sample surveys giving special emphasis to sampling techniques.
4. To know the contribution of fishing activities to food security of households.
5. To provide data to help monitor progress towards global development targets, in particular the Millennium Development Goals.
6. To improve capabilities of the Fisheries Department at the Ministry of Agriculture, Food Production, Fisheries and Rural Development to plan, design, collect, process, analyse and disseminate fishery information.

The Census comprised of several components: census preparation, data collection and data processing, each of which had to be thoroughly planned. This included:

- Collaboration with Stakeholder organisations
- Appointment of a Census Steering Committee
- Identification of all resource users
- Designing of the questionnaire
- Designing of the database
- Training and selection of enumerators island wide
- Execution of the Pilot phase
- Execution of the actual census
- Tabulation and processing of the data collected.

The 2012 Saint Lucia Fisheries Census is supported and funded by JICA and the Government of Saint Lucia. It commenced on 18 July 2012. Twenty five (25) enumerators have been trained and deployed into the field under the supervision of 5 competent supervisors from around the island. It is estimated that the field work would be completed over a 6 week period.

#### **3.6.2 Discussion**

The workshop noted the recently completed CARICOM / CRFM / KINGDOM of Spain: Diagnostic Study to Determine Study Poverty Levels in Fishing Communities in the CARICOM Region and indicated that duplication of efforts should be avoided. It was also pointed out that aquaculture operations would not be covered under the Census.

There was some discussion about the unwillingness of fishers to disclose fishing areas, and it was pointed out that in Dominica a grid system was designed to allow fishers to identify general fishing areas on a map.

### **3.7 Registration and licensing of fishers and fishing vessels**

#### **3.7.1 Antigua and Barbuda - Presentation summary**

*(Mr. Ian Horsford, Senior Fisheries Officer / Food Safety Specialist, Fisheries Division, Antigua and Barbuda)*

Registration and licensing of fishers and vessels are a fundamental part of a modern fisheries management system. In Antigua and Barbuda, the current legal framework governing the collection and management of fisheries information and statistics are: the *Fisheries Act (1983)*; the *Fisheries Regulations (1990)*; the *General Statistics Act (1975)*; and the *Freedom of Information Act (2004)*. While there are no specific mandatory provisions for registration of vessels and fishers, administrative procedures basically make the process compulsory (proof of ownership, general conditions for licensing, provisions for vessel marking, approval for duty free concessions, etc.). The enactment of new legislation in August 2012 will make registration of vessels and fishers compulsory.

Data pertaining to the registration and licensing programme are used in combination with the following programmes: catch and effort; biological; annual vessel census; fishery exports; and breaches of legislation:

- to assess the status of fisheries (including fishery resources and socio-economic situation);
- to monitor the level of compliance regarding fisheries legislation; and
- to guide fisheries management (including monitoring, control, surveillance and enforcement) as well as development strategies.

The registration component allowed for the estimation of the *potential fishing effort* and the licensing component provided an estimation of the *actual fishing effort* currently utilized. Despite the fore mentioned, a vessel frame survey conducted in 2001 indicated that the number of licensed vessels is not a “good indicator” of the actual fishing effort due to the low level of compliance with respect to licensing of local fishing vessels (58%). To address this, a census of the number of active fishing vessels is conducted annually. This has improved the accuracy of various annual fisheries statistics (capture production, contribution to GDP, level of employment, active number of fishers, etc) and fishing effort trend. The vessel census is a five stage process involving validation of data at various levels: 1) visual census of fishing vessel; 2) survey of vessel registry; 3) survey of vessels licensed; 4) survey of catch and effort records; and 5) survey of breaches of fisheries legislation.

In the event of tropical storms and other disasters, a damage assessment survey is conducted of fishing vessels. This ensures that the information on the fisheries is current and can guide recovery efforts. Overall, the presentation highlighted how critical current data is to the day-to-day management of fisheries. The example of “search and rescue” was used to reinforce the need for up-to-date information particularly in a life and death situation. The presentation also highlighted how “occupational pluralism” in the fisheries sector impacted on fishing effort depending on activities in related sectors (e.g., tourism and tourism-related activities) during the global economic downturn in 2008.

#### **3.7.2 Dominica - Presentation summary**

*(Mr. Derrick Theophile, Fisheries Liaison Officer, Fisheries Division, Dominica)*

The Fisheries Division of the Government of the Commonwealth of Dominica is mandated by law to keep a register of the fishers and fishing vessels which operate within the fisheries industry. This registry coupled with a licensing system helps the Fisheries Division control the number of persons who are able to access the limited marine fishery resources that are available.

Registration is mandatory for every fisher and boat. This is enforced by the Fisheries Division with the help of the Dominica Coast Guard (who look out for unregistered fishing boats on patrols).

For fishers, registration entails completing a registration form then attending a five-day training programme, the Basic Fisherman Training Course (BFTC). This programme, spearheaded by Fisheries Officer Norman Norris, was introduced in 2004 as an effort to raise the fisheries literacy of new entrants into the industry. It involves getting the fisher into a classroom environment and bringing in resource persons who work in the industry (Coast Guard, Fisheries Officials, Small Business Consultants and others) for a full five days of training, education and discussion. Topics covered include safety-at-sea, resource management, fishing business management, gear technology and good fish handling practices. After the course is completed satisfactorily, the fisher is issued a fisherman registration card which can be renewed annually.

Fishing vessel registration requires the boat owner completing a registration form, adding the particulars of the boat and engine and proof of ownership. At the end of the registration process the owner is issued a certificate of fishing vessel registration.

The registration and licensing system is currently under maintenance as records have not been updated in some time and many licenses are now expired. The Fisheries Division has employed the assistance of college interns who help with some of the registration maintenance duties. A standardized policy for registration is also being worked on along with an overall data management plan / policy. These activities should help improve registration and licensing system.

### **3.7.3 Discussion**

The meeting discussed the use of fisher ID cards as a means of national identification. It was pointed out that this varied among countries and in the case of Antigua and Barbuda, this was currently being reviewed. Once the Solicitor General enshrined it, the ID would be accepted as an official document.

A query was made on how duty free concessions were granted and it was indicated that this was done under the Inland Revenue Act. If the items were not being used for the intended purpose, then the money must be returned.

The possibility of incorporating fuel rebates along with the fisher licenses in Dominica was discussed. It was indicated that an agreement could be made with the new Petro Caribe gas stations and NAFSCOOP. However, it was pointed out that this would not cover all fishing areas and so would not be a suitable arrangement. It was also mentioned that previous fuel rebates were done based on fisher cooperative membership.

The importance of training fishers was discussed. It was indicated that in Dominica the Basic Fisher's Training Course (BFTC) was mandatory for all fishers and ID cards were only received once training was completed. It was pointed out that the course was usually conducted when there was a group of at least 25 new fishers, at a cost of \$150EC per fisher; and in the meantime fishers were allowed to fish provisionally. It was suggested that fishers should not be allowed to fish until they received the training and the fisher ID.

The Meeting was informed that the BNFC resulted in less sea accidents and reduced engine trouble. It was also pointed out that once fishers completed the BFTC, the Dominica Fisheries Division offered an advanced course for safety at sea. The penalty for fishers not having a card was a fine of \$10,000EC. It was noted that almost 100% of the vessels were registered in Dominica.

A query was made about whether the boat owners in Dominica were also issued with an ID, and it was pointed out that they would be classified as an investor and would not receive a card. The workshop was informed that in Antigua and Barbuda the boat owner would get an ID card as long as proof of ownership was provided along with affidavits for the building of the boat. The meeting suggested that vessel owners should also receive training.

The issue of insurance was discussed and it was pointed out that discounts could be obtained as risk models took the length of time the fisher was involved in the fishery as well as the amount of training the fisher would have received into account. The meeting was informed that 9.6% of the fleet in Antigua and Barbuda was insured. It was agreed that the insurance of fishing vessels was an issue at the regional level as it was considered to be a high risk activity.

### **3.8 St. Vincent and the Grenadines - Fisheries Statistics and Information**

*(Ms. Cheryl Jardine-Jackson, Senior Fisheries Assistant/Data, Fisheries Division, St. Vincent & the Grenadines)*

#### **3.8.1 Presentation Summary**

A sampling programme for estimating catch and fishing effort was established in 1992. The data collected under the programme include catch, effort, individual fish length and weight. The general objective of the data collection programme is to provide data and scientific analyses necessary to assist resource managers to make resource management decisions. The catch and effort data collection system follows a stratified sampling methodology. Landing sites are divided into groups/strata and sampling is performed separately in each stratum. Landings are estimated using “the day effort” at a landing site. The fisheries data management system evolved from the Trip Interview Program (TIP) which was introduced in 1993 / 1994, and the Licensing and Registration system (LRS) which was introduced in 1996 to the Caribbean Fisheries Information System (CARIFIS) which was implemented in 2001.

The Fisheries Statistical Pilot Project was implemented under the CRFM/JICA Master Plan Study. It commenced in August 2010 and ended in September 2011. Three outputs were expected.

- Improved Fishery statistical data collection system
- Improved fishery statistical data management
- Enhanced fishery statistical information dissemination among the relevant fishery organization.

The Pilot Project first and foremost sought to resolve issues with the Data Statistical Programme including:

- An outdated data sampling programme.
- Infrequent collection of biological data, including length frequency data
- Sampling of a limited number of species
- A vessel registration system which had not been updated since 1996
- Unsuccessful installation of CARIFIS
- Inadequate collaboration between the stakeholders and the Fisheries Division.

The steps taken by the Pilot Project to enhance the Data Statistical Program included:

- Revision of the data collection forms.
- Addition of new fields to the data collection forms.
- The fishery data sampling programme updated to analyze the sampled catch data for 2010 and 2011.
- Training workshops held.

- Revision of biological data collection forms.
- Improved / strengthened relationship between the stakeholders (e.g. Barrouallie Fisheries Cooperative) and the Fisheries Division.
- Installation of the CARIFIS database.
- Migration of legacy data into the CARIFIS database.
- Collection of blackfish data.

The plans to continue upgrading the present system in St. Vincent and the Grenadines include:

- Seek to improve business and facility management support for all fishery facilities.
- Update the stratification / status of landing sites whose infrastructural development or fishery activities have improved.
- Continue the dissemination and awareness program for fisherfolk, schools, and other stakeholders.
- Document and visualize all the processes of the fishery statistical system, to update the fishery data sampling programme and improve the fishery statistical system.
- Continue to review and upgrade the CARIFIS database to ensure its sustainability.

### **3.8.2 Discussion**

It was noted that it was good to see the statistical cycle and reference to annual reports previously produced by St. Vincent and the Grenadines Fisheries Division being made. The meeting was reminded of the importance of reporting and dissemination of information as it was important in the cycle and provided feedback to stakeholders. Reference was also made to the valuable publication which described the fisheries in St. Vincent and the Grenadines produced in 2003, and it was suggested that an updated version should be done. The meeting agreed that while it was good to get more human and financial resources, there was a need to be innovative and operate within the current situation to ensure that data collection and reporting continued. The meeting also noted that these reports would be useful in securing additional funding.

## **3.9 CRFM Secretariat - Fisheries Statistics and Information**

*(Ms. June Masters, Statistics and Information Analyst, CRFM Secretariat)*

### **3.9.1 Presentation Summary**

The goal of collecting fisheries data is to facilitate the provision of information and scientific analyses necessary to assist resource managers to make informed resource management decisions.

The two main approaches used in the region to capture relevant fisheries data are:

- (1) Catch and Effort Data Collection
- (2) Licensing and Registration of Fishers and Vessels.

The information gathered allows resource managers to monitor changes in fishing activities and evaluate changes in the biological and economic status of the resource. The information collected also provides accurate information on fishing activities in the country.

In 1991, CARICOM through assistance from CIDA initiated the CARICOM Fisheries Resource Assessment and Management Programme (CFRAMP). With regards to fisheries data collection and management, the goal of CFRAMP was to: enhance the basic information collected, enhance institutional

capacity to manage the data collected and assist in the capture, management and analysis of the relevant data.

The CRFM is the Caribbean Regional Fisheries Mechanism, and it grew out of the 1991 CFRAMP initiative. The CRFM has continued to assist Member States in the area of fisheries data collection and data management by:

- Data collection system reviews: systems are reviewed and recommendations made for improvements.
- Updating of the fisheries information system (CARIFIS).
- Continued training; particularly in stock assessment, statistics and use of CARIFIS.
- Analyzing, interpreting data and preparing reports; each year the CRFM host an Annual Scientific Meeting.

The fisheries data generated by CRFM Member States are used regionally, internationally and globally. Two important bodies that address fisheries management issues relevant to the region are:

1. The International Commission for the Conservation of Atlantic Tunas (ICCAT); undertakes the study and management of tunas and tuna-like fishes in the Atlantic- sub-regional / regional level.
2. The Fisheries and Aquaculture Department (FAO); provides advice and objective information to Members to help promote responsible aquaculture and fisheries at the international / global level.

The workshop was encouraged to provide accurate fisheries data to these 2 bodies.

### **3.9.2 Discussion**

The meeting noted that it was important to determine the appropriate raising factors for catch and effort data and agreed that the sampling systems within countries should be statistically sound.

It was pointed out that fishers should understand the process from data collection to decision-making as this would build their trust and encourage them to provide accurate data. The issue that fishers were under the impression that most of the data collected was used for management, rather than fisheries development was highlighted and it was recommended that this should be addressed.

The role of ICCAT and its jurisdictional authority and the States' authority within its EEZ was discussed. The meeting was informed that ICCAT was responsible for the management of tuna and tuna-like species in the entire Atlantic Ocean and adjacent seas and the organization operated at a regional level. Participants were reminded that generally most Regional Fisheries Management Organisations (RFMOs) such as ICCAT were developed to manage resources on the High Seas. As these species were considered to be straddling and migratory, there was a requirement under UNCLOS and Fish Stocks Agreement to address the need for compatibility across the High Seas and areas under national jurisdiction (EEZ). Therefore, countries which participate in these conventions needed to ensure that the measures were uniform. The example of yellowfin tuna was used and it was indicated that ICCAT would set a quota for the overall catch of yellowfin tuna and all areas must share this catch. It was pointed out that quotas would be given to specific countries and it would then be the countries' responsibility to regulate its fleet and fishers to determine how this catch was taken. The meeting was also informed that the State must be represented in ICCAT's deliberations in order to ensure that they receive a share of the overall catch quota. The importance of data and information in ensuring the allocation of fair catch shares was also raised especially given that the resource may not be present in the country's EEZ at all times.

The issue regarding data collection and statistics, and their importance in making good decisions was also recognized at the national and global levels. The need to ensure that data were comparable between

countries was also discussed and it was agreed that there was a need to determine suitable conversion factors for the region. The fact that many times decisions were not based on good data and the need to improve this was also raised. The workshop was informed that even though the Fish Stocks Agreement described in detail the data which were necessary for the management of various fisheries the legislation did not adequately cover this aspect.

The point was made that the fishers had all the required data and the meeting suggested that better cooperation and collaboration amongst Fisheries Divisions and the fishers could address this issue. The need for the existence of effective mechanisms which incorporated the fishers into the data collection system was also highlighted. It was suggested that the submission of data could be a condition attached to obtaining a fishing license. It was recognized that this would need to be addressed in the fisheries regulations and it would require long term commitment to ensure that policy decisions were based on the best data. It was indicated that a submission to the CRFM Ministerial Council covering these aspects could be prepared by the CNFO if necessary.

The participants agreed that there was a need to continuously build the capacity of personnel within the Fisheries Divisions / Departments to collect, analyse, compile and disseminate the data and information. The workshop was also informed that a college in St. Kitts and Nevis would be starting a training programme for fisheries personnel as the need had been recognized.

### **3.10   Dominica - Assessment of the Queen Snapper (*Etelis oculatus*) using data from landings** (Mr. Tetsuya Miyahara, JOCV)

#### **3.10.1   Presentation Summary**

The Commonwealth of Dominica has a limited amount of shelf and species are not abundant, with most being fully exploited. Therefore, the potential for overfishing of coastal species is high and poses significant management challenges for the future. Various measures need to be adopted to disperse the fishing pressure on these species in order to ensure the sustainability of the fishery.

Recently, the renewed emphasis on the FAD fishery has encouraged many fishers to do offshore fishing, but there are still serious concerns that coastal marine resources will be reduced in the future. For this reason, the status of the Queen Snapper (*Etelis oculatus*) is important as it is still abundant in the comparatively deeper areas and it is a high value demersal fish. Dominica Fisheries Division has a fisheries statistics team with one (1) officer and one (1) data entry clerk. Fish landing data is being collected through visual estimation and interviews with fishermen at twelve (12) landing sites. There is one site which collects census landing data. The total catch weight for each species is being estimated from the sample data. The reason behind the Queen Snapper survey is to maximize the ability to complete key tasks involved in fisheries statistics: data collection, analysis, and decision-making; within one unit, in an effort to obtain the meaningful information with minimum efforts.

Precise data and analysis creates a strong basis for decision-making. Although difficulties in many aspects like budget and facilities exist, goals can still be achieved without outside support or special equipment. For example the survey was initiated with one (1) fisher and one (1) data collector and the data analyzed with free software. To conclude the survey, there needs to be at least one year of continuous data collection. This presentation was made from a half year of data collection.

### **3.10.2 Discussion**

The Meeting agreed that it was important to develop trustworthy relationships with fishers in order to receive accurate data and recognized the study as a good example of this.

### **3.11 CRFM Secretariat - Ecosystem approach to fisheries**

*(Dr. Susan Singh-Renton, Deputy Executive Director, CRFM Secretariat)*

#### **3.11.1 Presentation Summary**

The purpose of this presentation was to introduce the concept of Ecosystem Approach to Fisheries (EAF) management, and to explain the benefits, as well as the challenges of its application. The presentation commenced with definitions of the term 'ecosystem' and provided examples, and then outlined the essential differences between conventional fisheries management and EAF. This comparison highlighted the broader scope and set of players expected to be involved in EAF implementation.

The presentation also provided a review of the global initiatives and agreements reached on developing the concept, principles of and operational guidelines for EAF. It was noted that none of the EAF principles were new, but implementation of EAF was not yet a reality mainly because the operational guidelines were stated in vague terms. The operational guidelines and 12 principles for applying EAF, as agreed under the CBD, were also presented and explained. FAO had produced several publications that contained technical guidelines for applying various aspects of EAF, and a list was provided. It was also pointed out that many approaches were proposed in the context of sustainable development of aquatic ecosystems, with different approaches placing emphasis on different objectives, as determined by the societies concerned. The tasks involved in completing an 'integrated ecosystem assessment' were then considered, and in view of these, the importance of developing and maintaining long time series of various indicator variables was emphasized. Time series of not only resource abundance but also of environmental conditions were essential for successful management.

The presentation then noted the development of the Large Marine Ecosystem concept as an operational management unit, and which is being promoted globally, through partnership between the UNEP Regional Seas programme and NOAA, for advancing EAF application for the purposes of sustainable development. In this context, the aims and activities of the Caribbean Large Marine Ecosystem project was then presented and discussed in some detail, highlighting the progress of work to date, and how these are informing the way forward in terms of policy, legal and investment reforms.

In concluding the discussion on EAF, the presentation noted that globally, efforts to put EAF principles into practice was gaining momentum, but the progress was likely to be incremental and adaptive. Societies would have to face the challenges of balancing short term social and economic gains with achieving sustainability in the long-term. Successful implementation of EAF would require cooperation among the various economic sectors and adaptive management. It was also important to develop a good understanding of ecosystem dynamics and the variability of this over time.

#### **3.11.2 Discussion**

Regarding the Ecosystem Approach to Fisheries (EAF), it was pointed out that it was usually skewed towards the fisheries sector, while the impacts associated with activities in coastal zone management, tourism and land based pollution were not adequately emphasized. The meeting was reminded that the EAF had provisions for the inter-sectoral approach and also provided the opportunity for fisheries to engage these sectors.

The modular assessments for sustainable development included in the EAF were discussed and the workshop was informed that they would need to be adapted for the Caribbean region. The point was also made that the artisanal fishery operations were usually more ecosystem-friendly than industrial fishery operations.

The fact that the tourism sector usually generated more revenue than the fisheries sector and was therefore given a higher priority by governments was noted.

### **3.12 St. Lucia - Integrated coastal management - Soufriere Marine Management Association**

*(Ms. Petronilla Polius, Fisheries Extension Officer, Fisheries Department, St. Lucia and Ms. Namiko Hattori, JOVC)*

#### **3.12.1 Presentation Summary**

The presentation highlighted the mission of the Soufriere Marine Management Association (SMMA) to contribute to national and local development, particularly in the fisheries and tourism sectors, through the management of the coastal zone of Soufriere, based on the principles of sustainable use, cooperation among resource users, institutional collaboration, active and enlightened local participation, and equitable sharing of benefits and responsibilities among stakeholders. The Soufriere marine management area was established due to the many conflicts which arose within that area. Some of these conflicts were increase in water-based tourism activities; increasing competition between recreational users and fishers over access to resources; acute conflicts between divers and pot fishers; and between seine fishers and yachts anchoring in seine fishing areas. Also, over time the resource base had become degraded as a result of the over-exploitation of the reefs; overfishing; improper fishing practices; destruction of reef from anchoring and land based sources for marine pollution.

In the initial stages of the SMMA there was no legal basis so a decision (Cabinet Conclusion 1648 of 1999) was taken by cabinet to set it up. Following on this, an institutional review was done in 2001, and it was registered as a Not For Profit Company (The Soufriere Marine Management Association Incorporated), governed by a Board of Directors. The Board of Directors is comprised of all the agencies, which have a demonstrated management function in the Area.

In the implementation stage of the SMMA, *some considerations were given to the socio-economic livelihood of the fishers most affected, which resulted in the agreement to the provision of temporary stipend for traditional fishers; select access to the Grand Caille Marine Reserve; the gillnet buy-back scheme; establishment of fisheries facilities; introduction of Fish Aggregating Devices {FADs}; development of an investment fund and longline training.*

The Authority still has to deal with such issues as yachtmen and fishers competing for marine space; divers accused by fishers of damaging pots / traps; community members and local hoteliers conflicts over access to beaches; tourism vessel operators accused by fishers of interrupting fishing operations and damaging gear; and visitor harassment by disorganized water taxi operators.

#### **3.12.2 Discussion**

There was some discussion on the development of the SMMA and it was indicated that it was initially intended to reduce the amount of activities within the area and reduce conflicts between the yachtmen and the tourists. Regarding the issues being experienced in the stakeholder committee, the point was raised that it was important to have neutral parties involved in management. The difficulty that governments have in balancing the promotion of tourism as well as the fisheries sector was also noted.

The importance of involving the fishers in the management system was also discussed and recognized as essential in ensuring that it was successful.

**3.13 Grenada - Integrated coastal management- Moliniere-Beausejour Marine Protected Area**  
(*Mr. Roland Baldeo, Coordinator for Marine Protected Area, Ministry of Agriculture, Forestry and Fisheries, Grenada*)

**3.13.1 Presentation Summary**

Grenada has made huge strides in integrated coastal management over the past few years. This is evident in steps being taken for management of the near shore coastal resources.

The Grenada Bank supports the most extensive coral reefs and related habitats in the south-eastern Caribbean, but the biodiversity of this region is at risk from increasing tourism, uncontrolled urban development and overfishing, and is in need of improved management of protected areas (MPAs).

There are two established MPAs in Grenada – Sandy Island / Oyster Bed Marine Protected Area (SIOBMPA) on the Grenadine island of Carriacou, launched in July 2010, and Moliniere-Beausejour Marine Protected Area, launched in September 2010. Both have existing management boards, wardens and government support for operational costs such as warden salaries, fuel for patrol boats and office buildings. A new MPA in the south of the island will be launched later this year.

As part of the strategy for governance of MPA's, the Government has taken the decision to provide for community participation in the management of MPA's. Amended MPA regulations will provide for co-management at the community level. Fishermen will now be integrally involved in the management of all marine protected areas.

The Government of Grenada is a Contracting Party to the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartagena Convention) since 1987; and in this way recognizes the importance that Grenada places on the sustainable management of its coastal and marine resources and the need for regional cooperation to attain these goals. Grenada is committed to implementing the Convention on Biological Diversity (CBD) Program of Work on Protected Areas (PoWPA) and more recently has committed to implementing the Caribbean Challenge to conserve 25% of near shore marine areas by 2020.

**3.13.2 Discussion**

The workshop noted that the presentation provided good examples of the management and operations of MPAs.

**3.14 Sato-Umi: New Japanese Concept for Coastal Management**  
(*Ms. Namiko Hattori, JOVC*)

**3.14.1 Presentation Summary**

“Sato-Umi”, a new concept for the coastal management, has been established in Japan to foster sustainable use of coastal resources as well as to increase productivity and biodiversity. This concept emphasizes the importance of “co-existence” of human beings with nature rather than separating two entities to preserve nature. During Japan’s period of high-level economic growth, many coastal zones were heavily developed and the fishing catch in these coastal areas has continued to decline since then. In

order to bring back high productivity and biodiversity, “Sato-Umi” has been established in various locations in Japan. Creating new habitats or restoring former habitats for the marine organisms is one of the main “Sato-Umi” practices. Proper management of coastal environment is important for the future biological diversity and sustainable use of its components.

### **3.14.2 Discussion**

The workshop participants welcomed the presentation but had no comments.

## **3.15 Japanese Fisheries Cooperatives**

*(Mr. Nariaki Mikuni, Senior Fisheries Expert, Latin America & the Caribbean Department, JICA)*

### **3.15.1 Presentation Summary**

According to the Fisheries Law (1949) fisheries rights in the sea area under the jurisdiction of a Fisheries Cooperative Association (FCA) are the bona fide personal property of the individual members of that Association, to whom they are distributed by the Association. Each FCA establishes regulations for the control and operation of various types of fishery in an equitable, efficient and sustained manner, as local conditions dictate. This situation has its origins in both customary law and in the formal legislation of the Japanese feudal era, although democratic processes and equitable treatment had to await the sweeping institutional reforms that followed World War II.

In present day Japan, the FCA is a vitally important intermediate organization that links the central and prefectural governments with the individual fisherman. Although comprising the fundamental unit of governmental fisheries administration and being the key organization for the implementation of official fisheries projects, a FCA belongs entirely to the local community of fishermen. The FCA lies at the hub of modern Japanese fishing communities, in which it constitutes the focus of social and economic activities. But, as throughout modern history, its principal function remains the planning, management and continuing sustained development of the local sea territory to which a community has tenure.

Based on ‘Study on the Formulation of a Master Plan on the Sustainable Use of Fisheries Resource for Coastal Community Development in the Caribbean’, JICA is planning new technical cooperation project focusing on fisheries management.

As discussed in this workshop, fisheries management is not a new agenda in the Caribbean region and several trials have been made. JICA will provide support to share those practices and formulate and implement fisheries management plans.

Due to the limitation of the governmental fisheries administration, co-management must be the option to be employed. The difficulty of co-management is how to build and maintain competent fishermen’s organizations. To ensure the participation of fishermen and the financial stability of their organizations, various fishermen’s needs, not only fisheries management, should be satisfied.

As was discussed in the February workshop, fish marketing and services provided by fisheries centres, and capacity development of the fishermen’s organization should be considered same time.

### **3.15.2 Discussion**

The point was made that Fisheries Cooperatives could greatly improve the life of fishers by allowing them to obtain higher incomes as there were no middlemen and by providing insurance.

#### **4.0 Action Planning for Fisheries Management**

The working group sessions used some aspects of PCM and the logical framework (goal, purpose, outputs, activities, indicator, and assumptions) to develop action plans for specific fisheries. Action plans were developed for: the conch fishery in St. Lucia (table 4.1), the sustainable use of reef resources in St. Kitts and Nevis (Table 4.2), the sustainable use of pelagic resources in Antigua and Barbuda (Table 4.3), the improvement of the socio-economic status of the East Coast fishers in Grenada (Table 4.4), and increasing fishing efficiency in St. Vincent and the Grenadines (Table 4.5).

#### 4.1. St. Lucia's Action Plan for the development of a conch fishery management plan

<b>Overall goal</b>	Development of conch fishery management plan to increase production and improve livelihoods		
<b>Implementing Agency goals</b>	<ol style="list-style-type: none"> <li>1) Determine stock status</li> <li>2) Implement management measures</li> <li>3) Identify conch fishers</li> <li>4) Regulate the fishery</li> </ol>		
<b>Implementing Agency</b>	<b>Department of Fisheries</b>	<b>Saint Lucia Fish Marketing Corporation</b>	<b>Marine police</b>
<b>Output</b>	<ol style="list-style-type: none"> <li>1) Establish a Licensing System</li> <li>2) Create a data collection system</li> <li>3) Conduct research on conch population in collaboration with fishers and co-operatives</li> <li>4) Manage the conch fishery</li> <li>5) Conduct appropriate education and training in fishing and safety methods in collaboration with fisher and co-operatives</li> </ol>	<ol style="list-style-type: none"> <li>1) Marketing of conch products</li> <li>2) Provide a guaranteed market for fishers</li> </ol>	<ol style="list-style-type: none"> <li>1) Enforcement of regulation</li> </ol>
<b>Activities</b>	<ol style="list-style-type: none"> <li>1) Create and implement an agreed fee structure</li> <li>2) Identify and train data collectors</li> <li>3) Create a database that would capture all data collected</li> <li>4) Design a License template suitable for effective management</li> <li>5) Mobilise identified fishers from sites</li> <li>6) Design a training module suitable for resource users</li> <li>7) Use in house expertise (fisheries biologist and divers) to conduct research including fishers</li> </ol>	<ol style="list-style-type: none"> <li>1) Promote attractive conch products / value added</li> <li>2) Increase consumption of conch</li> </ol>	<ol style="list-style-type: none"> <li>1) To have regular monitoring and surveillance activities</li> </ol>

#### 4.2 St. Kitts and Nevis' Action plan to develop a management plan for the sustainability of reef resources

<b>Overall Goal:</b> To develop an effective Management Plan for the sustainability of reef resources				
<b>Implementing Agency</b>	<b>Fishermen Cooperative</b>	<b>Department of Fisheries</b>	<b>Government</b>	<b>Coast Guard</b>
<b>Implementing Agency Goals</b>	Speak with one voice to promote effective management and sustainability of the fishing sector	Provide support for fisheries management	Provide support for fisheries management	Enforcement to support fisheries management
<b>Output</b>	<b>Activities</b>	<b>Activities</b>	<b>Activities</b>	<b>Activities</b>
To establish rules and regulations (include penalties)	Fisher consultations (communities and on air) Establish internal controls	Analyze feedback from consultation to develop Rules and Regulations	Submit Rules and Regulation for Cabinet approval Gazette Regulations for implementation after Parliament approval	Enforcement of Regulations to support for fisheries management
To introduce biodegradable fish pot panels (Ghost Fishing)	Sourcing of material and conduct training			
Improve Data collection	Conduct training Complete data logs (collection)	Assist with training workshop Provide Data sheets Collect Data Strengthening Database <ul style="list-style-type: none"> <li>• hardware</li> <li>• software</li> <li>• Capacity building for Staff and Fishers in data collection</li> </ul>		
Introduce Zoning (loss prevention)	Assist with identifying areas for zoning	Submit Draft to Ministry for Cabinet approval Provide locations of fish zones to Coast Guard and Maritime Affairs	Submit established zones for Cabinet approval for inclusion in Regulations	Enforcement
Promote use of ICE to address marketing, quality control issues	Supply ice and ice boxes (coolers)	Encourage and enforce the use of ice for quality control		Enforcement

Mandatory Coop membership	Shared Benefits (Training, guaranteed market, discounts on gear, etc) from their collective efforts for the promotion of good fishing practices	Submit recommendations for license based on Coop membership Conduct fisher consultations re: the intention to issue license base on Coop membership	Include recommendations in Regulations for approval by Cabinet and amend Fisheries Regulations Gazette amendments	
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#### 4.3 Antigua and Barbuda's Action Plan to sustainably utilise pelagic resources

<b>Overall Goal</b>	To sustainably utilise pelagic resources		
<b>Implementing Agency Goals</b>	To improve regional framework of pelagic; To regulate the utilisation of the resource; To improve food security; To increase amount of fish caught; To reduce operational costs; Improve livelihoods of fishers; To reduce user conflicts; To increase fish production; To develop markets; To develop management capacity.		
<b>Implementing Agency</b>	<b>Fisheries Division</b>	<b>ABCOOP Fisher Coop</b>	<b>Antigua Sport Fishing Association</b>
<b>Output</b>	<b>Activities</b>	<b>Activities</b>	<b>Activities</b>
Deployed FADs Maintenance Programme FAD Data Collection Programme Management framework for FADs Marketing Mechanism MCS & Enforcement Programme Capacity Building in Fisherfolk Organisations Cost & Earnings Study Legislation Introduction of a system to decide who has FAD access Strong Fisherfolk Organisations	Feasibility study on FAD placement Initial purchase materials Training in construction/deployment/use Collection of catch and effort, cost and earnings data Logbooks FAD management lessons Pelagic species marketing research Basic Fishers Training Course	Initially produced FADs FAD stakeholder consultation Training in fish handling, processing and storage of fish Training of fishers on how to handle new species Seawatch Programme with the Fisheries Division and Coastguard Replacement of FAD materials Coop fisher logbook Agreement on rules of fishing on FADs Coop Management training Communication of Information Code of Conduct Observation of International Instruments	Sports Fishers Logbook

#### 4.4 Grenada's Action Plan for the Improvement of the socioeconomic status of fishers on the East Coast.

<b>Overall goal</b>	Improve socioeconomic status of fishers on East Coast of Grenada	
<b>Implementing Agency goals</b>	To improve livelihood of fishers To develop management structure for FADs	
<b>Implementing Agency</b>	<b>Soubise Fishermen Coop</b>	<b>Fisheries Division</b>
<b>Output</b>	<b>Activities</b>	<b>Activities</b>
Fad regulations accepted by fishers Increased production by 20% on the East Coast Increased earnings of fishers (product & fuel)	FAD Training Construction & deployment of FADs Management/maintenance of FADs Marketing of FAD caught fish	Data collection FAD regulation consultations Evaluation

**4.5 St. Vincent and the Grenadines' Action Plan to increase fishing efficiency.**

<b>Overall goal:</b>	To increase Fishing Efficiency			
<b>Implementing Agency goals:</b>	Coordinate activities Constructive Management Maintenance Deployment	Data collection	Enforcement	Notify mariners
<b>Implementing Agency:</b>	<b>Fisheries Division</b>	<b>Fisheries Co-operatives</b>	<b>Coast guard</b>	<b>Maritime</b>
<b>Output</b>	<b>Activities</b>	<b>Activities</b>	<b>Activities</b>	<b>Activities</b>
Data collection Licensing (FAD) Fishermen registration Deployment of FADS Resource management Overall maintenance Appropriate Legislation Marketing	Data collectors training Licensing of fishing boats Registration of fishers Deployment of FAD's Resources management around FAD's Conduct repairs of FAD's Enactment of laws	Data collectors training Licensing of fishing boat Registration of fishers Deployment of FAD's Resource management around FAD's Conduct repairs of FAD's Marketing of fish	Enforcement of licensing Enforcement of registration of fishers	Enactment of laws

## **5.0 Way Forward**

The meeting recommended that the case studies presented should be used to guide the implementation of best practices in other fisheries. The meeting also agreed that a network among fisheries management stakeholders should be established. During the working group sessions, action plans for specific fisheries were developed (see Section 4.0). In terms of the way forward, it was agreed that JICA would provide technical assistance for the implementation of these actions plans. It was also suggested that the plans be adapted to other specific fisheries.

## **6.0 Wrap-up and closing**

The workshop adjourned at 3:00 pm.

## **Appendix 1: Opening Ceremony - Speeches**

### **Mr. Nathaniel Williams: Permanent Secretary, Ministry of Agriculture, Rural Transformation, Forestry & Fisheries**

Greetings and salutations.

Let me welcome all of you my OECS brothers and sisters to the shores of St. Vincent and the Grenadines. To you the officials of JICA, I bring you warm greetings and welcome you also to our beautiful shores. Of course you are no stranger to these parts.

Let me firstly apologize for the absence of the Honourable Minister who is unavoidably engaged in matters of State. In no way do I think of myself as an adequate replacement for him. But permit me to extend his apologies and to express his sincerest regrets for being unable to be with you today. Those of you who know the Minister would know he takes his ministerial portfolio seriously and he has begun what I would refer to as a vendetta against poverty through focused and aggressive approaches to the development of the agricultural sector. The fisheries subsector is pivotal in this initiative. Hence he welcomes your meeting today and looks forward with keen interest to the findings and decisions over the next few days.

Note that I address you the participants as my OECS brothers and sisters. I have done so with great deliberation. It is my understanding that the participation in this 2<sup>nd</sup> workshop is a special technical meeting of Fisheries Officials from six OECS States converging here in an effort to advance best practices in fisheries management and development across the Wider Caribbean.

In my brief address to you today, I am careful not to go off on a tangent of seeking to enlighten the educated in the fisheries subsector on matters of best practices in your field of expertise. What I would seek to do however is to outline where I see you fitting in, in the greater scheme of things. During my short time with you today I will seek to sketch a map that I believe may help you to define your space in the concentric circles of collective enterprises called OECS unity and CARICOM.

As we all may agree, the political wheels grind slowly in this regional integration project call CARCIOM. I believe however if we would take some time to look at the technocratic institutions of the region we would see great success.

The UWI and its legacy of a stable platform for educating our people jumps to mind. It continues to innovate and be relevant in providing appropriate knowledge and skills to our dynamic and changing social landscape.

The CDB over the years has been our financial broker to attract soft financing and donor funding towards investments and development.

CARDI continues to provide quality yeoman's service to the agricultural sector of the region. CROSQ and CAHFSa though fledgling organizations ensure a regional platform for food safety and industrial standards to this region.

And more particularly, the CRFM that seeks to guide policy framework for the islands within this small Caribbean basin to operate at optimum levels in the most cost cohesive means possible.

CRFM in this regard must be applauded for its efforts despite its challenges. Your meeting here must be seen and appreciated within this context.

The second platform on which I wish to contextualize your meeting today is that of the OECS Economic Union. Our political Directorates across this sub-region have put the steel beams together for this Bridge of Hope called OECS economic Union.

It is now the turn of the technocrats and technicians like yourselves to pull the steel cables into place to ensure all the peoples of this sub-region can cross over on this bridge of hope to interact in all endeavours and for them to do so in confidence and trust.

This meeting today of professional minds in the fisheries sector must continue to lay out the template for best practices for the peoples of this sub region. By so doing you have chosen the best steel cable available to you and by codifying these best practices you have contributed to securing an element in this bridge of hope.

By shaping and codifying these best practices you are laying a secure plank for our fisherfolks to ply their trade in safer waters, thus reducing operational risks, lost of boats, equipment and more importantly scarce human resources.

Further you are creating a template for our sub-region to engage our regional and international partners as equals.

So as you deliberate over the next few days your vision must be matched by the urgency to secure our scarce resources and protect lives.

JICA must be commended for the support given over the years. We must prove to ourselves and our partners that our collaborations are paying off. Our greatest asset in business is not finances but a culture of trust. No amount of money can replace trust. If it could have the first world would not have been in their positions of economic fallout today.

Your work today is a spoke in the wheel of building this trust and confidence.

Do it well. Do it professionally.

May God bless you and your endeavours over the next few days.

Thank You.

**Mr. Milton Haughton, Executive Director, CRFM Secretariat**

**Mr. Chairman, Permanent Secretary, distinguished participants, Ladies and Gentlemen,**

1. It is a pleasure and an honor for me to welcome you to this JICA-CRFM Workshop on Promoting the Development of Best Practices for Fisheries Management and Development in the Caribbean Region.
2. Fisheries and aquaculture play a vital role in the regional and national economies, particularly in respect of their contribution to food and nutrition security, as well as employment and livelihoods in the region. According to our most recent statistical report there are nearly 350,000 persons across the region who depend directly and indirectly on fisheries for their livelihood. We have over 24,000 fishing boats in the region. In 2010, the industry produced approximately 160,000 metric tonnes of fish and seafoods valued at approximately US\$700,000,000.
3. The CRFM is very pleased to be able to organize this workshop, focusing on the core issues of fisheries development and management, in collaboration with JICA, one of our key development partners in the region.
4. Mr. Chairman, I want to take this opportunity to recognize the presence of Mr. Mikuni and Mr. Ishida, two of the JICA Experts who have been working with us in the region to build capacity, and transfer technology and knowledge to our fisherfolk and fisheries departments. I also acknowledge the presence of Mr. Miyahara and Ms. Hattori, JICA Volunteers who have been working in the fisheries sector in the region.
5. Mr. Chairman, I also want to thank the Government of Japan for their support and commitment to the sustainable development and management of the fisheries in the CARICOM region. We have just concluded a 3 year regional study funded by Japan which prepared a Master Plan on sustainable use and conservation of fisheries resources for coastal community development.
6. The Government of Japan also recently approved a follow up project to begin to implement some of the recommendations contained in the Master Plan. I was pleased to welcome the initial Project Formulation mission only last week when they visited Belize to exchange preliminary ideas regarding the follow up project.
7. I want to recognize Japan's commitment and contribution to the sustainable utilization, conservation and management of our living marine resources for the benefit of the people of the region. We cherish and celebrate the special bond of friendship and cooperation between the Governments and people of the CARICOM States and the Government and people of Japan.
8. On Monday I was fortunate to have had the privilege of participating in the 15th CARICOM/Japan Consultation in Guyana where we reviewed CARICOM / Japan relations, took stock of our achievements and exchanged ideas on future development in our relationship within the context of the commitments made under the document entitled, "Partnership for Peace, Development and Prosperity between Japan and the Member States of the Caribbean Community (CARICOM)" signed on 2 September 2010 in Tokyo. We look forward to strengthening and deepening our cooperation in fisheries in the coming years.
9. Although we have made progress in developing and utilizing our fisheries in a sustainable manner, we still face many serious challenges in the coming months and years as we seek to

transform and reposition our fisheries to make sure it can make enhanced contribution to our economic development in the light of global warming and sea level rise, marine pollution, overfishing in coastal waters, pressing need for new employment opportunities and food and nutrition security.

10. We must obtain the resources, technology, knowledge, and capacity to fully utilize, manage, and protect the living marine resources and ecosystems under our jurisdiction so that present and future generations can continue to enjoy the benefits of healthy, self-sustaining fisheries throughout the region.
11. This is, therefore, an important and timely workshop where the participants from different countries will share their experiences, review and discuss a wide range of issues regarding sustainable management and development of fisheries.
12. Without a doubt the greatest challenge facing us in the fisheries sector at this time is to strengthen the governance and management frameworks and improve long-term ecological sustainability, profitability and competitiveness within the fisheries sector.
13. Although a small gathering, this workshop will discuss best practices in the countries in respect of fisheries development and management, and will provide important practical recommendations and guidance as to what must be done to achieve our strategic objective of ensuring long-term sustainable management and optimum utilization of fisheries and aquaculture resources in the CARICOM Region.
14. In particular, your sharing of experiences and discussion on topics such as co-management approaches involving partnerships between fisherfolk organisations and government departments to develop and manage the pelagic fisheries using fish aggregating devices; the formulation of fisheries management plans for the conch fisheries, and initiatives undertaken to strengthen the statistical systems for collecting and disseminating scientific and other data and information for decision-making and monitoring of the fisheries, will significantly contribute to the development of the new strategic plan for the CRFM and thus its Work Programme and Budget for the next biennium, that is, 2013 - 2015.
15. The workshop will no doubt also provide useful, practical guidance on how to strengthen the implementation of the policy, legal and institutional reforms that are needed in the region.
16. As you are all aware in recent times we have made significant progress in developing policy instruments such as the Common Fisheries Policy, the Castries Declaration on IUU fishing, the Master Plan that I mentioned earlier and the study of poverty levels and its underlying causes in the region. These studies and policy documents provide a road map to a brighter and more secure future for those who rely on fisheries for their livelihoods. We must now invest in implementation of these instruments to among others things, improve research and data collection, improve marketing and trade, and expand aquaculture production to mention just a few.
17. I wish you good success in the workshop and we look forward to receiving, sharing with the other Member States, and incorporating the lessons learnt in the CRFM strategic planning exercise that will start shortly.
18. May God bless you

**Mr. Nariaki Mikuni, Senior Fisheries Expert, Latin America & the Caribbean Department, JICA**

Ladies and Gentlemen,

It gives me a great pleasure to join previous speakers in welcoming you to today's workshop. I am delighted that many have accepted our invitation. I am particularly happy that we have in this room the individuals who can change the future of the fisheries in the region.

On behalf of JICA, and as a coordinator of this workshop, let me outline this workshop.

**Background**

There are two important development objectives in the Caribbean fisheries.

In February's workshop, we focused on fish marketing to increase the profitability. In this workshop, we will address several issues of fisheries management to assure sustainability. As we know, some of the reef fish resources are already over exploited and large pelagic fish resources which we are targeting now come under the framework of ICCAT.

We should take action now.

Similar to the February's workshop, good practice sharing and action planning are the approach employed for the fisheries management. Fisheries management isn't a new agenda in the Caribbean region and several trials have been made and good practices established. Those can be applicable to other fishing sites in the region and the factors of success and problems still being faced are worth analysis.

Four areas of good practices are selected for this workshop, FAD fishery, conch fishery, pot fishery and marina protected areas. Based on the good practices shared on this workshop, you are expected to formulate and implement of the fisheries management plan. JICA is planning new technical cooperation project with CRFM and happy to support your action plan in this project.

To formulate and implement fisheries management plan, the concept of co-management is very important.

There are 3 advantages in co-management

- It can be implemented with limited resources of the government
- Fishermen provide practical ideas for effective and acceptable regulation
- Self-enforcement and mutual surveillance by fishermen

The difficulty of co-management is how to get competent fishermen's organization. To ensure the participation of fishermen and financial stability of the fishermen's organization, the needs of fishermen and not only fisheries management should be satisfied. As we discussed in the February's workshop, fish marketing and various services provided by fisheries facility and capacity development of the fishermen's organization should be supported at the same time.

The fisheries co-management plan should take several steps.

- Confirmation of basic facts of the target fisheries such as the number of active fishermen and fishing boats, fishing gear and methods, volume and value of catch and marketing => fisheries census.

- Registration of fishermen and fishing boat
- Issuing of fishermen's ID and displaying of boat registration number
- Fishermen's incentive to renew their registration (training, duty exemption, use of facilities)
- Cost sharing by fishermen for fisheries management (FAD maintenance)
- Recording and reporting the catch and effort data by fishermen
- Stock assessment and recommendation of adequate level of catch
- Deciding of rules and regulations
- Legal authorization
- Formulation and publication of fishery statistics

To take successfully those steps, we will also discuss legal frameworks, fisheries census, registration and licensing, fisheries statistics and stock assessment in this workshop.

I will also share the Japanese experiences of the unique concept of Japanese marine protected areas and the fisheries co-management. This is based on the customary sea tenure and fisheries cooperatives are legally authorized to formulate the fisheries management plan in the area of the sea tenure.

JICA believes that we can create a real case of fisheries co-management in new technical cooperation project and hopes this workshop kicks off our new collaboration to achieve the goal.

Thank you.

**Mr. Raymond Ryan, Chief Fisheries Officer, Fisheries Division, St. Vincent and the Grenadines**

It is indeed a pleasure to welcome you to this important workshop "Promoting the Development of Good Practices for Fisheries Management and Development." This workshop which is organized by the Japanese International Corporation Agency (JICA) in collaboration with the CRFM and the Government of St. Vincent and the Grenadines seeks to advance best practices in Fisheries Management and Development.

A special welcome to the Permanent Secretary who has taken time from his vacation to deliver remarks here today, as the Minister has a number of pressing engagements. Welcome to persons at head table. CRFM participants and technical experts from JICA and CRFM.

Welcome to all colleagues participating in this meeting and who will be in deliberations over the next three days. It is unfortunate that you have missed the recently concluded carnival in St. Vincent and the Grenadines. I am sure you would have found the time to attend a few of the activities staged by the Carnival Development Committee. Nevertheless, you can take this up with the organizers later.

The first good practices workshop was held in February 2012 which focused on fish quality assurance and the marketing of fish and fish products. This was a resounding success given the useful exchange of information as many of our countries grapple with the problem of establishing quality control systems to facilitate compliance with stringent standards for meeting international markets.

This second workshop will serve to bring together the primary stakeholders and partners in the Fisheries sector of the region to share experiences, success stories and lessons learnt in some of the critical areas required for sustainable fisheries management and development. Specifically the aim is to build the capacity of Fisheries Department and Fisherfolk Organisations in six countries in the field of fisheries co-management, data collection and management and licensing and registration. This exchange will be particularly useful given that many of the fish resources harvested in these six countries are shared and exploited using similar gear and methods.

It is anticipated that the outputs of this workshop will include strategies for the formulation and implementation of action plans to improve management of the respective fisheries and marine protected areas within the region. This we hope will continue to create the enabling environment to facilitate empowerment, increased income, food security and poverty reduction. Once again, welcome everyone.

## Appendix 2: Participants List

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### Appendix 3: Agenda

DAY 1 (25 July 2012)			
Time	Activity	Presenter	Topics to be included in Presentations and for discussion
		<b>NB. In addition to the information provided in Section 6 - National Presentations, of the Information Note, presentations should also include the topics listed in each case below</b>	
9:00 – 10:00	<b>Opening Ceremony</b>		
10:00 – 10:15	<b>Coffee break</b>		
	<b>Good practices in fisheries management</b> The case studies will be used to illustrate the effectiveness and efficiency of fisheries co-management as well as its potential and limitations for future application.		
10:15 – 11:00	➤ FAD fishery - management involving fishermen's organizations.	Mr. Jullan Defoe (Dominica)	<ul style="list-style-type: none"> <li>✓ History and present challenges of the Dominican FAD fisheries</li> <li>✓ Legal framework for co-management</li> <li>✓ Registration, licensing and user's fee</li> <li>✓ Data collection by fishermen</li> </ul>
1100 -1145			
1145 – 1230	➤ Conch fishery - assessment and formulation of the fisheries management plan	Mr. Ian Horsford (Antigua & Barbuda)	<ul style="list-style-type: none"> <li>✓ Stock assessment approaches</li> <li>✓ Management measures – size limits, closed areas, closed seasons</li> <li>✓ Regulations and enforcement</li> </ul>

	➤ Pot fishery, including efforts to reduce ghost fishing	Mr. Jullan Defoe (Dominica)	<ul style="list-style-type: none"> <li>✓ Impact of ghost fishing</li> <li>✓ Effect of use of biodegradable material</li> <li>✓ Actions to disseminate the information and practices among fishermen</li> </ul>
1230 – 1330	<b>Lunch</b>		
1330 -1430	<b>Legal/regulatory framework and principles for improved fisheries management</b> This presentation will provide an overview of the legal/regulatory framework and principles for improved fisheries management taking into account the international and regional fisheries and related instruments.	Mr. Milton Haughton CRFM	<ul style="list-style-type: none"> <li>✓ International legal frameworks</li> <li>✓ International best practice</li> <li>✓ National legal and regulatory frameworks</li> <li>✓ Recommended reforms</li> </ul>
1430 – 1530	<b>Fisheries census – planning and implementation</b> The case studies will be used to share the experiences on planning and conducting fisheries censuses in Dominica and St. Lucia.	Mr. Derrick Theophile (Dominica) Ms. Yvonne Edwin (St. Lucia)	<ul style="list-style-type: none"> <li>✓ Questionnaire design and field testing</li> <li>✓ Training</li> <li>✓ Fisher friendly interview methods</li> <li>✓ Data compilation, analysis and reporting</li> <li>✓ Cost effectiveness of the census</li> </ul>
<b>1530 – 1545</b>	<b>Coffee break</b>		
1545 – 1700	<b>Registration and licensing of fishers and fishing vessels</b> The case studies will be used to share the experiences of Antigua and Barbuda and Dominica in the use of registration and licensing of fishers and fishing vessels as tools in fisheries management.	Ms. Ian Horsford (Antigua & Barbuda) Mr. Derrick Theophile (Dominica)	<ul style="list-style-type: none"> <li>✓ Legal framework</li> <li>✓ Incentives for fishermen to be registered</li> <li>✓ Qualifications to be licensed</li> <li>✓ Connection with FBTC</li> <li>✓ Updating the registration and license data</li> </ul>

## DAY 2 (26 July 2012)

Time	Activity	Presenter	Topics to be included in Presentations and to be discussed
0900 – 0945	<p><b>Fisheries Statistics and Information</b></p> <p>(a) The case study on fisheries statistics and information by St. Vincent and the Grenadines will be used to demonstrate the need for data collection, management and reporting, utilizing limited resources, as part of the process for effective decision making and fisheries management.</p>	Ms. Cheryl Jardine-Jackson (St. Vincent & the Grenadines)	<ul style="list-style-type: none"> <li>✓ Catch and effort data collection</li> <li>✓ Statistical model and electronic database</li> <li>✓ Contribution of the JICA M/P study to improve the system</li> <li>✓ Further challenges to upgrading the present system.</li> </ul>
0945– 1015	(b) The CRFM Secretariat will address the need for fisheries statistics and information at the regional level for informed decision making and the types of statistical reports required by the FAO and ICCAT.	Ms. June Masters CRFM Secretariat	
<b>1015 – 1030</b>	<b><i>Coffee break</i></b>		
1030 – 1100	(c) Assessment of the Queen Snapper, using data from landings	Mr. Tetsuya Miyahara JOCV	<ul style="list-style-type: none"> <li>✓ Measurement of body length and maturity stage</li> <li>✓ Recommendation of size limit and closed season</li> </ul>
1100 – 1130	<p><b>Ecosystem approach to fisheries</b></p> <p>This presentation will address the use of EAF in sustainable fisheries development.</p>	Dr. Susan Singh-Renton CRFM Secretariat	
1130 – 1200	<p><b>Integrated coastal management</b></p> <p>The case studies will be used to share the experiences and demonstrate the need for stakeholder collaboration and inter-sectoral approaches to integrated coastal management.</p> <p>(a) Soufriere Marine Management Association/SMMA (<b>St. Lucia</b>)</p>	Ms. Petronilla Polius (St. Lucia)	<ul style="list-style-type: none"> <li>✓ Rio+20 and marine protected areas</li> </ul>

		Ms. Namiko Hattori JOCV	✓ History of SMMA & Moliniere-Beausejour MPA
1200 – 1230	(b) Moliniere-Beausejour Marine Protected Area ( <b>Grenada</b> )	Mr. Roland Baldeo (Grenada)	<ul style="list-style-type: none"> <li>✓ Legal, institutional and financial framework of SMMA &amp; Moliniere-Beausejour MPA</li> <li>✓ Costs and benefits to fishermen</li> <li>✓ Mechanism for collaboration between stakeholders from the tourism, environment and fisheries sectors.</li> </ul>
<b>1230 – 1330</b>	<b>Lunch</b>		
1330 – 1530	<b>Fisheries co-management in other regions – Bay of Bengal Large Marine Ecosystem (BOBLME)</b>	Dr. Yugraj Singh Yadava Director Bay of Bengal Programme	<ol style="list-style-type: none"> <li>1. General Overview <ul style="list-style-type: none"> <li>✓ Bay of Bengal Large Marine Ecosystem Project - countries involved</li> <li>✓ Types of fisheries, especially small scale fisheries</li> <li>✓ Approaches to fisheries governance, fisheries management and decision-making at the community, national and regional levels (especially for small-scale fisheries)</li> <li>✓ Interactions with other sectors at the community, national and regional levels.</li> <li>✓ Approaches to licensing and registration at the community, national and regional levels (especially for</li> </ul> </li> </ol>

			<p>small-scale fisheries)</p> <ul style="list-style-type: none"> <li>✓ Approaches to data collection, data management, and data and information sharing at the community, national and regional levels.</li> <li>✓ Mechanisms to promote stakeholder participation in the fisheries governance and management processes at the community, national and regional levels (especially for small-scale fisheries)</li> <li>✓ The types of fishers organizations and their roles and functions in providing goods and services, including marketing, to their members as well as their level of participation in fisheries governance and management at the community, national and regional levels</li> <li>✓ Role of government and other organizations (e.g. NGOs) in providing assistance to build the capacities of stakeholder organizations, especially fisheries organizations, etc.</li> </ul>
<b>1530 -1545</b>	<b>Coffee break</b>		
1545 - 1700	<b>Fisheries co-management in other regions – BOBLME (cont'd)</b>	Dr. Yugraj Singh Yadava Director	<p>2. Lessons learned</p> <ul style="list-style-type: none"> <li>✓ Lessons learned from the</li> </ul>

		Bay of Bengal Programme	<p>various areas mentioned above</p> <ul style="list-style-type: none"> <li>✓ Lessons learned from the promotion of the development of stakeholder organizations, especially the small-scale fishers' organizations (give examples of successful fisheries organizations and the partnerships involved in their development)</li> <li>✓ Potential and limitations of the ecosystem approach to fisheries and co-management.</li> </ul>
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### DAY 3 (27 July 2012)

Time	Activity		
0900 – 0930	<p><b>Action Planning for Fisheries Management</b> This presentation will address project cycle management (PCM) as a tool for action planning for fisheries management</p>	(JICA Expert/ CRFM)	
0930– 1015	<p><b>Working Group Sessions</b> The Action Planning for Fisheries Management presentation will be followed by working group sessions which will use some aspects of PCM (Stakeholder analysis, Problem analysis, Objective analysis, Logical framework (goal, purpose, outputs, activities, indicators, assumptions) for specific fisheries.</p>		
<b>1015 - 1030</b>	<b><i>Coffee break</i></b>		
1030 – 1245	<p><b>Working Group Sessions</b> The Action Planning for Fisheries Management presentation will</p>		

	be followed by working group sessions which will use some aspects of PCM (Stakeholder analysis, Problem analysis, Objective analysis, Logical framework (goal, purpose, outputs, activities, indicators, assumptions) for specific fisheries.		
<b>1245 – 1345</b>	<b>Lunch</b>		
1345 – 1445	<p><b>Way Forward</b></p> <p>Participants will review the workshop objectives and outputs and discuss the way forward.</p> <ul style="list-style-type: none"> <li>(c) Recommendations</li> <li>(d) Strategy for Development of action plans for fisheries management</li> <li>(e) Strategy for establishment of network among fisheries management stakeholders.</li> <li>(f) Provision of technical assistance to facilitate the development of the action plans</li> </ul>		
1445 – 1500	<b>Wrap-up and closing</b>		