

Report of the

**Final Regional Workshop
CASE STUDY ON SHARED STOCKS OF THE SHRIMP AND
GROUND FISH FISHERIES OF THE GUIANAS-BRAZIL SHELF**

Port of Spain, 16-18 October 2012



CASE STUDY ON SHARED STOCKS OF THE SHRIMP AND GROUND FISH FISHERIES OF THE GUIANAS-BRAZIL SHELF

FAO implemented a “Case Study on Shared Stocks of the Shrimp and Groundfish Fisheries of the Guianas-Brazil Shelf” (UNGF/INT/001/OPS) between July 2011 and February 2013, with six participating countries (Brazil, French Guiana (EU/France), Suriname, Guyana, Venezuela and Trinidad and Tobago). The case study was carried out in the framework of the GEF-funded Caribbean Large Marine Ecosystem (CLME) Project. The CLME Project aims at assisting Caribbean countries to improve the management of their shared living marine resources, most of which are considered to be fully or over exploited, through an ecosystem approach. A preliminary Transboundary Diagnostic Analysis identified three priority transboundary problems that affect the CLME: unsustainable exploitation of fish and other living resources, habitat degradation and fish community modification, and pollution.

The purpose of the case study on Shared Stocks of the Shrimp and Groundfish Fisheries of the Guianas-Brazil Shelf was to fill knowledge gaps, contribute to the final CLME Transboundary Diagnostic Analysis and to the Strategic Action Programme (SAP), with priority actions to be undertaken to ensure the sustainability of the shrimp and groundfish fisheries. Another objective was to mainstream the Ecosystem Approach to Fisheries (EAF) in the management of shrimp and groundfish fisheries. Both objectives were addressed through assessments/studies at the national and regional levels, with the participation of stakeholders and following some of the key steps of the planning process under an EAF framework.

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PREPARATION OF THIS DOCUMENT

This is the report of the regional workshop held in Port-of-Spain, Trinidad and Tobago, from 16 to 18 October 2012. The report contains a summary of the discussions held during the workshop, results the activities carried out by the different countries during the case study on shrimp and ground fish, a summary of the assessment studies that were produced, as well as the issues that were agreed upon to be included in the CLME Strategic Action Program. The organizers are grateful to all workshop participants for their input into the report and to all resources persons for their presentations and summaries provided for this report.

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Final Regional Workshop, Port-of-Spain, 16-18 October 2012.

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ABSTRACT

A workshop was organized in Port of Spain from 16 to 18 October 2012 to finalize the Case study on shared stocks of the shrimp and groundfish fisheries of the Guianas-Brazil Shelf of the Caribbean Large Marine Ecosystem Project. The workshop was attended by participants from five participating countries, as well as the CRFM, the CERMES and FAO. The workshop was hosted by the Ministry of Food Production of Trinidad and Tobago.

The workshop aimed at presenting the results of the activities carried out in the countries participating in the case study, validate the transboundary issues and recommend interventions for inclusion in the Caribbean Large Marine Ecosystem Project (CLME) Strategic Action Programme (SAP). The country representatives presented the outcomes of the national consultations as well as the main elements of the baseline reports that were prepared. Assessment studies dealing with bioeconomic analysis of the shrimp and groundfish fisheries and the status of the stock of the main commercial species were presented during the meeting. The results of a trial of productivity-susceptibility analysis on Suriname seabob trawl was presented.

The assessment of transboundary governance was discussed and participants provided inputs to the evaluation of thirteen principles for good governance. The participants were divided in three groups representing the fishing industry and fisherfolks; scientists and fisheries departments technical staff; and the senior officers and directors. The same groups were requested to highlight the main issues that should be considered as a priority to be addressed and to propose actions to address them. The draft interventions included in the draft SAP were submitted to the perusal of the three groups and were discussed and completed.

The next step after the workshop is the reformulation of the interventions included in the SAP and submission to the CLME Project Coordination Unit.

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1. Opening

Dr Gabriella Bianchi, Senior Fisheries Officer/Service Coordinator, Marine and Inland Fisheries Service, FAO, Rome, welcomed the participants. Dr Bianchi noted the coincidence that the workshop was being held at the same time as the World Food Day and shared a key message on behalf of FAO. The World Food Day in 2012 was focused on Agricultural Cooperatives which were considered the key to feeding the world, by providing food security, employment, and aid poverty alleviation in concrete ways. FAO and these cooperatives were allies in the fight against hunger and extreme poverty. There have been three decades of decline in national investments in agriculture, in a difficult context aggravated by markets and the climate. After the 2007-2008 food prices crisis, many countries have increased efforts to invest in agriculture and despite the fact that resources in many countries lag behind the verbal commitment of authorities, there were numerous examples of strong organisations that initiated collective action to boost productivity and create new opportunities to achieve food security and sustainability.

Dr Bianchi stated that fisheries and aquaculture were key in providing nutritious food globally and that the Ecosystem Approach to Fisheries (EAF) was an appropriate framework to address a variety of issues, including poverty. It was a more holistic approach to fisheries management, within the context of ecological, social, and economical aspects. The past year has been spent investigating how the principles of the ecosystem approach could be implemented in practice in the shrimp and groundfish fisheries of the Guianas-Brazil shelf. Consultations with stakeholders attempted to pull together information that could be used as a baseline, and against which progress could be measured. Key issues threatening sustainability were identified and, considering that these resources were likely to be shared between countries, these issues were transboundary. Dr Bianchi concluded by hoping that all the work done through this case study within the CLME would lay the ground for building a stronger relationship within the region.

Ms Laverne Walker, Senior Officer for the CLME Project, Colombia, welcomed the participants and expressed her gratitude to FAO for the invitation to the workshop. Ms Walker explained that the CLME Project related to an integrated approach for sustainable fisheries, and that it was a four-year project, which would come to a close in April 2013, hopefully with the endorsement of the CLME Strategic Action Program (SAP). The SAP was a long-term road map aimed at strengthening governance and management of natural resources in the wider Caribbean region. It was to be considered as a policy document that needed to be agreed upon to address transboundary problems that have been identified, such as the unsustainable exploitation of natural resources, pollution, and degradation of habitats for pelagic, continental shelf and reef ecosystems.

Ms Walker explained that a vigorous consultative process was embarked upon at the national, subregional, and regional levels, hence providing a regional umbrella to outline key interventions and actions that would be proposed in the CLME SAP for this continental shelf ecosystem. Issues that were identified were to be further investigated in the SAP implementation phase. However, before implementation, the document must be signed off at the ministerial level in all 25 Caribbean countries in the region. Therefore there must be serious thought given to interventions and activities to be proposed, as these would be used to form the development of the final project. Ms Walker informed the meeting that the recommendations would be fine-tuned after the workshop at similar committees and wished a successful workshop.

Mr Terrence Philip from the Caribbean Regional Fisheries Mechanism (CRFM) provided a welcome address and recalled that the main resources of the Guianas-Brazil Shelf were the shrimp and groundfish resources. These resources have a high socio-economic importance as they provide food security, foreign exchange and sustains the development of coastal communities. Mr Philip mentioned that, following the decisions taken at the 1996 Fourth Meeting of the WECAFC Ad Hoc Shrimp and Groundfish Working Group of the Guianas-Brazil Shelf and the CFRAMP Shrimp and Groundfish Subproject Specification Workshop, WECAFC, in partnership with CFRAMP (now CRFM), conducted a series of workshops on the assessment and management of the shrimp and groundfish fisheries on the Guianas–Brazil Shelf from 1997 to 2000 for the countries bordering the subregion.

These workshops culminated in a meeting of Fisheries Managers and Ministers of the subregion, in Trinidad and Tobago, in 2001, and the First Regional Conference on the Sustainability of Fisheries Resources in the Brazil–Guianas Shelf, in Suriname, in 2002, which sought to involve both resource managers and users. This approach to promoting fisheries management in the subregion was viewed as an effective one, despite some shortcomings, and its continuation was recommended.

Coming out of these meetings was the recognition that the penaeid shrimp species in the region were being subjected to increasing trends in fishing mortality and the fisheries were generally overcapitalized. In the case of groundfish, despite relatively stable catches, overexploitation was found to be severe for some species. The assessments pointed to the need to learn more about the role of the environment in the recruitment of juveniles to the shrimp fisheries; and for more socio-economic information on these fisheries to better inform decision-making. Of significance was the recognition that a subregional mechanism would have to be put in place for effective decision making and management of the shrimp and groundfish fisheries in the Guianas-Brazil area.

Mr Philip pointed out that the coming on-stream of the CLME Project, which focuses on governance at the local, national and regional levels; and the incorporation of the EAF has provided the opportunity to address some of the issues previously mentioned. However, implementing EAF would require robust, participatory decision-making mechanisms at all levels, which would lead to more effective adoption of management advice. Mr Philip mentioned that the recently held National Stakeholder Consultations in Suriname, Trinidad and Tobago and Guyana helped to validate the transboundary issues (unsustainable fisheries, habitat degradation and pollution) identified in the Transboundary Diagnostic Analysis. They also demonstrated the stakeholders' commitment to maintaining a healthy ecosystem in order to safeguard the social, economic, cultural and other benefits being provided by the system. In addition, these consultations have pointed to the need to keep the key stakeholders engaged throughout the fisheries management process at the local, national and regional levels to enable them to meaningfully influence policy development and implementation, as well as to ensure transparency and accountability.

Ms Elizabeth Mohammed, Acting Director of Fisheries Division, Ministry of Food Production, Trinidad and Tobago, welcomed all guests and chair. Ms Mohammed mentioned the Caribbean Week of Agriculture that had prevented the Minister and Permanent Secretary from attending the workshop and apologized on their behalf, and conveyed their best wishes for a successful workshop. Ms Mohammed informed to the meeting that in Trinidad, the shrimp and groundfish fishery was considered one of the most valuable fisheries. Its production averaged at 1700 tonnes at a value of US\$5 million yearly. While there was some export trade, a significant portion of the catch was utilized locally. Trinidad and Tobago was fortunate to have benefitted technically and financially from the FAO since the early 1990's as well as from the CRFM, aiding in the recognition that most stocks were overexploited. A socio-economic study on the importance of bycatch was also carried out. Bycatch was important to livelihoods of local communities and also as a cheap source of protein.

Ms Mohammed informed the participants that a new fisheries management legislation was to be passed in Trinidad and Tobago and, therefore, the activities of this case study were very timely, as they would allow for more informed decision making. The new legislation would revolutionize fisheries management in Trinidad and Tobago by strengthening the national capability to meet regional and national conditions. A greater flexibility in the range of management plans could be employed. Trinidad and Tobago was also involved in a process for developing coastal zone management. The presentation of priority issues would be considered as national plans were being developed. A multisectoral approach was necessary for effective management and the government has recognized that measures to control fishing activities may not be effective on their own to achieve long-term sustainability. Other agencies must be engaged to address pollution and habitat destruction. Mitigation of climate change must also be addressed. Challenging and ground-breaking activities were anticipated.

2. Introduction and background to the workshop

Within the context of the CLME Project, the "Case Study on shared stocks of shrimps and groundfish fisheries of the Guianas-Brazil Shelf" involved six countries: Brazil, France (French Guiana), Guyana, Suriname, Trinidad and Tobago and Venezuela. The case study aimed to fill the knowledge gaps that contribute to the Transboundary Diagnostic Analysis (TDA) of the final CLME Project and as a basis for the elaboration of the Strategic Action Programme (SAP) for the region. Taking the EAF as a methodological framework, the case study was also aimed at integrating the concept and practice of EAF in the management of shrimp and groundfish fisheries on the Guianas-Brazil continental shelf. These goals were to be addressed through desk studies, assessments and consultations with stakeholders at the national and regional level, following some of the key steps in the planning process under the EAF.

Overview of the case study roadmap

Ms Tarub Bahri from FAO recalled the initial roadmap that was agreed upon at the beginning of the case study and pointed out the activities that were organized according to this roadmap. The case study began with the convening of a regional training workshop on facilitation that was held in Port of Spain, Trinidad and Tobago, from 11 to 15 July 2011. The training workshop was organized and led by the Caribbean Natural Resources Institute (CANARI). The goal of the workshop was to provide the basic skills in facilitation to the national focal points of the countries involved in the case study to allow them to implement the national activities. In addition, CANARI prepared a stakeholder and institutional analysis that was discussed at the first workshop and that was given to the countries to complete. A communication strategy was drafted and delivered as a tool to be used to guide communication with stakeholders.

A regional training workshop on EAF principles and methodology was then held from 17 to 21 October 2011, in Paramaribo, Surinam, and was attended by all participating countries. In addition to providing training on basic EAF principles, the workshop was also the occasion for holding preliminary discussions on the main issues related to the shrimp and groundfish fisheries, and organizing the issues in the typical three EAF components: ecological well-being, human well-being, and ability to achieve. Input was also provided to the governance assessment carried out by CERMES; in particular, by reviewing the institutional architecture and allocating scores to help quantify the performance of the existing institutions.

National consultations were organized in the different countries with the purpose of discussing the priorities for the sustainable management of the shrimp and groundfish fisheries and identifying key actions to be undertaken. Preliminary meetings were organized with stakeholders to review and discuss issues and actions, and the outcomes of these preliminary meetings were consolidated during the national consultations that were held. In parallel, background assessment and bioeconomic studies were undertaken on the most updated information on the shrimp and groundfish stocks status in the subregion. The background studies were aimed at providing additional information for the discussions and agreement between countries on priorities for the future.

While carrying out the case study activities, the CLME Project Coordination Unit had requested inputs to start drafting the SAP. Therefore, FAO was involved in the SAP Core Development Team, conveying outputs from the national and regional activities of the case study and translating them into meaningful interventions for the SAP.

This final workshop was aimed at presenting the results of the activities carried out in the countries participating in the case study, validating the transboundary issues and recommending interventions for inclusion in the CLME-SAP.

Overview of the CLME-SAP

Ms Laverne Walker provided a detailed presentation on the CLME Project (Sustainable management of the shared living marine resources of the Caribbean large marine ecosystem) and explained the different steps of the SAP development. The CLME Project was a four-year project cofinanced by the Global Environment Facility (GEF) under the International Waters (IW) focal area that started in May 2009 and would end in April 2013. The overarching goal of the project was to implement a multistate coordinated management of transboundary aquatic ecosystems and resources and assist countries in the identification and application of the full range of technical, economic, financial, regulatory and institutional measures needed to operationalize sustainable development strategies for these ecosystems and resources. The project operated within the GEF IW focal area 4, under strategic program 1 on “Restoring and sustaining coastal and marine fish stocks and associated biological diversity”. The CLME was requested to carry out three GEF interventions: a transboundary analysis (TDA), the setting of national intersectoral consultation and coordination (NICs) and the development of a strategic action program (SAP). Based on an agreed SAP, GEF may support a SAP implementation project, including national reforms, demonstration investments for a transboundary priorities, and regional institution building.

The CLME Project covered two large marine ecosystems (LMEs): the Caribbean LME and the North Brazil Shelf LME; and included over twenty five countries. The CLME Project included the following key fisheries ecosystems: reefs fisheries, continental shelf fisheries, and pelagic fisheries. It counted five pilot projects or case studies, which were being run by different institutions, on spiny lobster, reef fishery and reef biodiversity, shrimp and groundfish, Eastern Caribbean flyingfish, and large pelagic fishery. An assessment of the regional ocean governance was also carried out within the project.

The TDA included a causal chain analysis that detailed the socio-economic and environmental impacts of three key transboundary issues: unsustainable exploitation of resources, pollution, and habitat degradation and community modification. Root causes of these impacts were identified and these were supposed to be addressed in the SAP. It was recalled that the SAP was a negotiated policy document that provided priorities for transboundary actions and advised on policy, legal and institutional reforms and investments that needed to be undertaken in the Region. The preparation of the SAP was a cooperative process among key stakeholders in the countries of the region. It would outline a long-term roadmap for improved ocean governance and management with focus on living marine resources and would include suggestions on how to strengthen subregional organizations and linkages between existing subregional and regional organizations. The SAP would also contribute to advance the implementation of the ecosystems approach towards management of the living marine resources.

The structure of the SAP was detailed. The document was based on a vision of the future of sustainable fisheries development in the Caribbean. The vision was linked to objectives to be achieved, in terms of ecosystem quality and societal benefits. To achieve these objectives, strategic directions were specified; these included broad interventions that were detailed in specific activities to be undertaken on the ground (Figure 1).

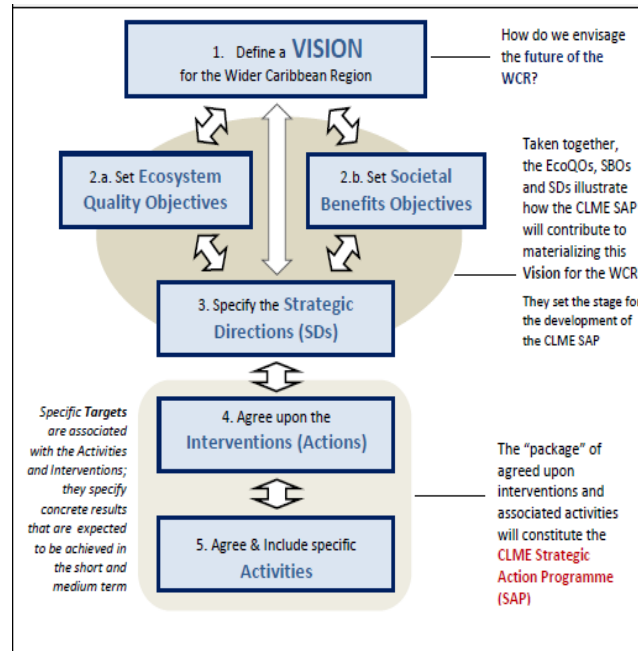


Figure 1. SAP development: way forward and linkages between key concepts

The process of the SAP development was also explained in detail. The SAP was being drafted by a core development team, in close collaboration with the SAP formulation and endorsement support team and the national focal points. It was planned that the draft SAP would be discussed and agreed upon during the upcoming CLME Steering Committee. The following step would then be to submit it to the Ministers in all CLME participating countries for endorsement. As the SAP was supposed to result from intersectoral consultation, its endorsement would be sought from Ministries of different sectors (fisheries, environment, industry, tourism etc.). Based on the endorsed SAP, a new proposal would be submitted to GEF to request funding of a four-year implementation project.

In this context, the expectations from the meeting were an agreement on a set of interventions and activities specific to the shrimp and groundfish fisheries of the subregion for inclusion in the SAP.

Overview of the Ecosystem Approach to Fisheries

Dr G. Bianchi, FAO, provided a general overview of the key principles of the EAF. Poor performance of current management practices, the degradation of fishery resources and the marine environment, the recognition of a wide range of societal interests in marine ecosystems, and the need to reconcile these were the main drivers behind the development of the EAF. The EAF strived to balance diverse societal objectives by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems, and their interactions, and applying an integrated approach to fisheries within ecologically meaningful boundaries. EAF, as adopted by FAO, was not considered a major departure from conventional fisheries management but rather an extension of it and with a greater emphasis on sustainability concepts. For example, in opposition to conventional approaches focusing on few objectives, EAF aimed to achieve multiple objectives and took into consideration the interaction with other sectors. Rather than being prescriptive, EAF strived to establish incentives for sustainable behaviour and to involve stakeholders in fisheries management decision-making processes.

EAF adopted a four-step approach (see Figure 2) and, throughout the process, stakeholders were consulted and decisions were informed by the best available knowledge which, in addition to scientific knowledge, referred to a more extended knowledge base, including traditional knowledge.

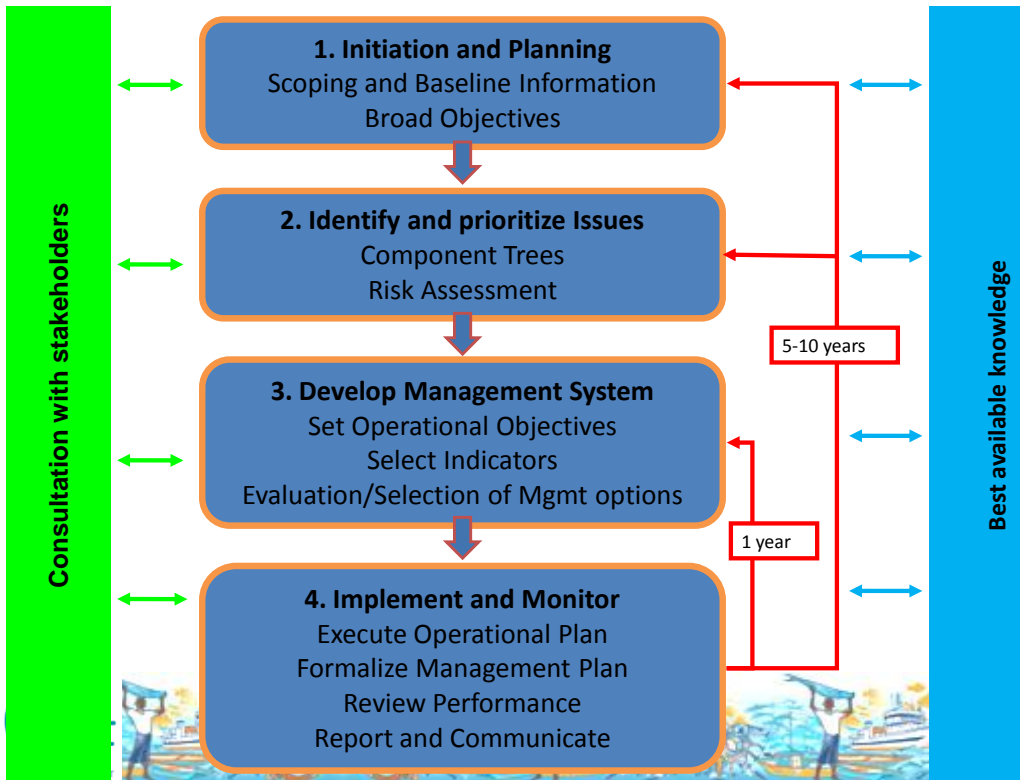


Figure 2: EAF steps

The EAF used three main components as basis of the analysis of a fishery: (i) ecological well-being of the retained species, the non-retained species and the general ecosystem; (ii) human well-being at the community and the national level; and (iii) ability to achieve which referred to governance issues and external drivers (see Figure 3).

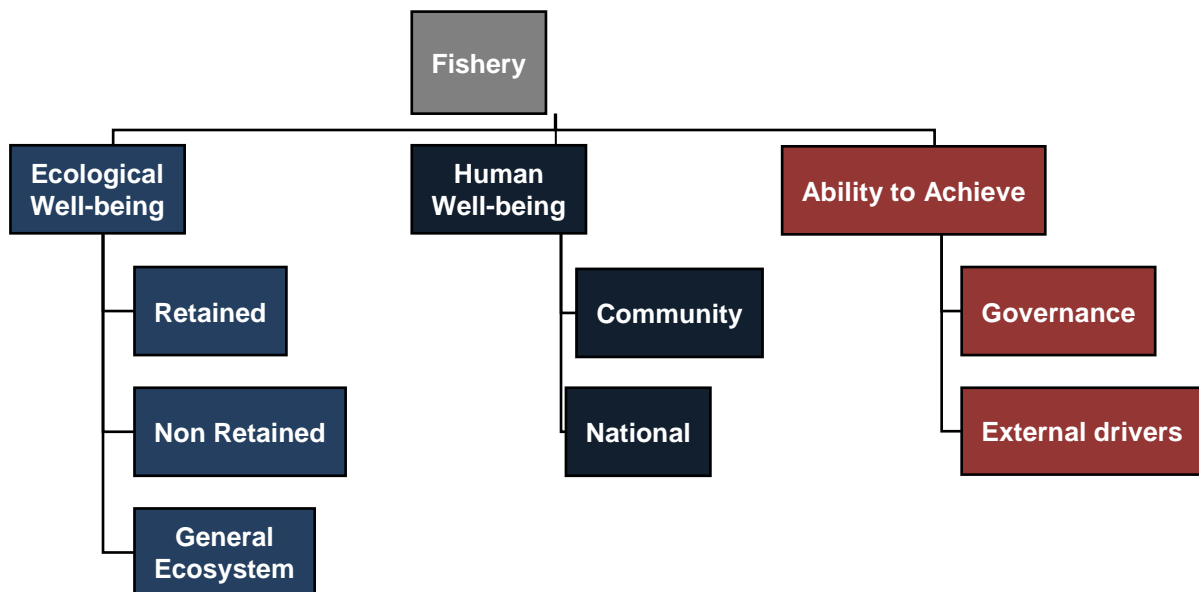


Figure 3: EAF components

In conclusion, the process of evolution from conventional management has started and is gaining momentum. Valuable experience was already available and valuable action could be readily taken. It should be noted, however, that the EAF implementation could only be incremental and adaptive. Guidance was being provided by FAO and other institutions, but the actual application of EAF could only take place with the main actors on the ground taking responsibility for the needed changes and in a way relevant to the given context.

3. Presentations by country on the outputs of the national consultations

Trinidad and Tobago

It is estimated that 1 070 fishermen were involved in the industry, with more than 700 individuals involved in gillnet and line fisheries, and more than 300 individuals that utilized trawl gear. The number of land-based workers was approximately 550 (vendors, jostlers etc.). The industry was mainly concentrated on the west and south coast of Trinidad. The most significant species was croaker, in terms of quantity landed (representing $\frac{3}{4}$ of the catch from gillnets), followed by shrimp and weakfish (combination of several closely related species). Shrimp brought the highest value (TT\$ 25-30 million/yr), whereas trawl bycatch was of a much lower value. The industrial shrimp trawling has the highest bycatch/shrimp ratio.

The case study involved establishing a national taskforce comprising various stakeholders. Fishery industry representatives were selected in a manner that different fleets which exploit the resources, as well as different landing sites, were represented. Attempts were made to include processors and exporters, but that was not fully successful. Liaising with leaders of fisherfolk associations helped to attain representatives. However, several landing sites did not have active associations. As a result, small meetings were held at various landing sites and volunteers for the case study national taskforce were requested. There was also an intention to include representatives from sectors outside fisheries such as the Environmental Management Authority (EMA), and the Planning Division. It was unfortunately difficult to gain representation from other sectors.

There were four task group meetings, which covered: feedback on the meeting in Suriname; activities to be undertaken; identifying objectives and issues; and prioritizing issues. Feedback at task group meetings was low, so it was decided to go into communities to discuss and prioritize issues. Community meetings were predominantly artisanal trawl sites, and two gillnet and line sites. The meetings included crew members rather than just boat owners. The solutions proposed to major issues were identified. Tags were provided to individuals to identify the issues most important to them. This tagging system was used to prioritize the issues. The top 20 issues highlighted consisted mainly of socio-economic and governance issues.

The Fisheries Division was drafting the Baseline Report. It would be disseminated to the industry upon completion.

The National Consultation comprised 174 attendees. Piracy topped the ranking at both preparatory meetings and at the National Consultation. The second most significant issue identified at the consultation was habitat damage due to fishermen's activities. The top issues coincided with the transboundary issues identified in studies done previously. The proposed solutions were discussed and documented.

Follow-up actions included the completion and dissemination of the draft EAF Baseline Report for negotiation with stakeholders. The National Consultation report was also to be completed and disseminated, along with the last regional workshop report. Continued consultation with stakeholders was vital.

Guyana

The fishery sector of Guyana consisted of three main components: inland, aquaculture and marine. As a commercial activity, the marine fishery has the longest history of these and was by far the largest. The sector's contribution to agricultural GDP was 3 percent, and fishing was a major activity (8 percent of agricultural GDP). The three fisheries subsectors were making significant contributors to the economy and national food and nutrition security: approximately 15 000 persons were employed in the fisheries sector, either directly or indirectly.

Regarding the national level activities of the CLME Case Study on the shared stocks of shrimp and groundfish fisheries of the Guianas-Brazil Shelf, a national task force was established to plan for the

preparatory stakeholder meetings and national stakeholder consultation workshop and to review the Draft EAF Baseline Report. There were 16 preparatory meetings, including both artisanal and industrial fisherfolk, that provided an opportunity for stakeholders to put forward their issues, which were then utilized as a base for evaluation of priority issues. The meetings also allowed for the gathering of information to develop the EAF Baseline Report to allow stakeholders to ventilate issues prior to the national stakeholder workshop. Some of the lessons learnt included the following: (i) the fisherfolk expected immediate solutions to their problems; (ii) the Fisheries Department must lead the process and sustain communication in order to aid understanding, so that solutions were not expected in unrealistic time frames; (iii) ongoing intersectoral dialogue on the issues affecting the fishery was critical; and (iv) while fisherfolks were becoming tired of discussing the same issues over and over again, there was a need to keep stakeholders continually engaged in the process.

A total of 37 persons participated in the National Consultation workshop, and included artisanal fishermen, representatives of the Environmental Protection Agency, Conservation International (CI), World Wildlife Fund (WWF), Maritime Authority, the Coast Guard, Fisheries Department, University of Guyana and the Association of Trawler Owners & Seafood Processors. It was difficult for some fisherfolks in outlying areas to travel to Georgetown where the consultation was held; therefore mainly the fisherfolks from central areas attended the meeting. The workshop sought to familiarize participants with the principles and practices of the EAF; to present the draft EAF Baseline Report; identify priority issues (both national and transboundary) for the sustainable management of shrimp and groundfish fisheries, based on the EAF framework; and identify key actions to address priority issues.

The identified issues included, among others, piracy and security for fishermen and property; the high cost of fishing operations/inadequate access to market; landing site facilities; reduction of catch; lack of functioning organization for small fisherfolks; inadequate representation of small scale fisherfolks at national, local and regional level; lack of knowledge on biology of target species; and conflict over access to fishing grounds.

Priority actions were identified for all of the issues highlighted. Piracy and security for fishermen and property emerged as a top issue. A Hijacking and Piracy Act (2008) was established to make it a non-bailable offence. However, fisherfolk complained that those accused still got out on bail and proceed to threaten the fisherfolk. The result was a refusal of victims to identify the pirates.

The Draft EAF baseline report was shared with the task force for feedback and comments. However, it was noted that a longer time frame might be required to receive feedback from stakeholders. The baseline report was revised after the national consultation to include comments and suggested actions. It was then circulated after consultation again and would be finalized by the end of October 2012.

The comments provided after the presentation dealt with consultation fatigue and the need to find a mechanism to maintain dialogue with communities and keep stakeholders involved in the discussions on fisheries management.

It was highlighted that piracy episodes tended to occur in areas of unsustainable fishing practice and where stocks are overfished, but there was a lack of organized data on piracy. It was also noted that piracy was given more attention when cruise ships were at risk than when it was small-scale fishing boats. Therefore, fishers have a responsibility to make themselves heard in order to escalate the urgency of mitigation. Reference was made to the fact that the UN definition of piracy considers only high seas acts occurring in national waters being usually referred to as “armed robbery against ships”. Therefore, there was a need to distinguish the legal definition of piracy from what is referred to locally in the Caribbean. It was agreed that improved monitoring control and surveillance (MCS) could both serve fisheries as well as help mitigate these robbery episodes.

Suriname

Suriname has a coastline of 380 km and a population of 494 000 (census 2005). The Exclusive Economic Zone (EEZ) was proclaimed in 1978. Sustainable exploitation of the fisheries resources

was kept high on the agenda within the national policy. In order to achieve the policy goals some major interventions must be made. These included the formulation of a management plan; updating of the fisheries legislation; support for new fishing techniques to minimize damage to the ecosystem; strengthening control and surveillance to protect both fishermen and fisheries resources; and to stop illegal practices at sea.

The fisheries management used a licensing system; the number of licenses issued annually for fish and shrimp have decreased, following the trend of production figures for marine catches, but licenses for seabob have remained relatively stable. Fish exports amounted to 25 693 tonnes in 2011; the export values have an increasing trend for fish but a decreasing one for marine shrimp because of the collapse of the penaeus stocks. Total export values for fishery products were approximately US\$ 33 million annually.

There were six preliminary meetings with a mix of stakeholders: industrial & artisanal fishers, government representatives, NGO'S, data collectors, and landing site personnel, based on stakeholder analyses. These meetings were useful for awareness of the EAF approach, and for national consultations, and provided updates on various issues as each meeting had its own issues. The main issues included: coastguard, piracy, illegal, unregulated and unreported (IUU) fishing. Priority actions were discussed: stations for coast guard, licenses, and fishermen identification documents.

Data for the baseline report was obtained from the Fisheries Department, FAO publications on fishery statistics, and the Ministry of Finance. The draft baseline report was distributed to stakeholders for comment. Inputs from stakeholders were obtained prior to the national consultation. It was recommended by Green Heritage Suriname that maximum sustainable yield (MSY) should be abandoned from the national fisheries policy and more ecologically sustainable practices introduced. The baseline report was useful because it gave an inventory of the fishery, and a good overview regarding the shrimp and groundfish fishery. It should be used as a tool in formulating policy together with the outcomes of the preliminary meetings and the national consultation. The baseline report should also be updated annually and expanded to other fishery resources. Data collection and reporting was highly significant.

The National Consultation included 50-60 people. Issues were identified, and the priority actions to be taken were also discussed. The feedback was processed to facilitate preparation for the final regional workshop. Intersectoral dialogue started in the phase of commenting on the baseline report by the stakeholders. Implementation of follow-up was considered a key due to the high importance of the resource.

Comments: Suriname was not able to decrease trawlers by 30 percent, so the number of allowed fishing days was decreased to 200. All boats were limited up to a maximum of 200 fishing days. A decision to deepen the river was made in the Suriname River dredging project. Dredging could decrease fishery production, so fishermen would require security. Inland fisheries refer to just a part of the river (e.g. estuaries and brackish water, not freshwater). The EEZ was recently officially extended for Suriname.

Brazil

Shrimp provided US\$ 30 million/year. The involved agencies included government institutions: the Ministry of Fisheries and Aquaculture, and the Ministry of Environment. Universities were also involved in the process.

There was a closed area for trawling (only allowed 10 nm beyond the shore), access rights were required, closed seasons, and monitoring control and surveillance. The biomass of shrimp stocks seemed stable even though they were fully exploited, but there was a lack of sufficient data to fully assess the status of these stocks. There was also insufficient data on fishery interactions as there seemed to exist some sort of conflict between different fleet types. There was also a lack of information regarding ecosystem impacts but bycatch remained a big concern. For every kilo of shrimp, there were 7 kg of bycatch. There was also the issue of catch of juveniles by artisanal trawlers in shallower waters. A draft of national management plan existed but was still in the stage of

consultation. Five species of shrimp were assessed. The main objective was rebuilding ecologically sustainable levels of biomass, minimising the impacts of fishing, and economic benefits.

Regarding groundfishes, the most valuable fisheries were those targeting red snapper (worth up to US\$ 25 million/year.) and catfishes (worth up to US\$ 18 million/year.). Weakfish was the main bycaught species in the shrimp fisheries. Some measures were in place already and these included: closed seasons and areas for catfish; a closed season for weakfish; and for red snapper all vessels were allowed to only fish at depths beyond 50 m and must use vessel monitoring systems.

The management system dealt with three aspects: fisheries/biology, ecology and socio-economics, with the overall objective of sustainable development. Comanagement took place through various steering committees, each one of which has subcommittees with different roles. For marine fisheries, it was foreseen that nine steering committees would be established .

A specific national taskforce was not developed, but government institutions, academics and the private sector had a lot of dialogue. A participatory agenda for fisheries management was established. This was useful for deepening the knowledge on the fishery, hence, providing a better understanding to move forward with plans. The EAF must be better communicated and explained. Preliminary meetings were difficult due to frequent administration changes (since the creation of the Ministry of Fisheries and Aquaculture in 2009, there has been four different ministers and, consequently, a change of the senior staff). There were email communications between the government, academic personnel and the private sector. This strengthened the relations and boosted the collaborative work. The elaboration of the baseline report was enabled and a national consultation held.

The baseline report was consolidated through individual work, literature review, and inputs received from individual representative of the private sector. It acknowledged gaps in the management systems as more communication was needed.

The national consultation consisted of 28 individuals and comprised: national and local government, academics, private sector, and fisherfolk organizations. NGO's were invited but only one was able to participate. The issues identified included the fact that four main fisheries shared the area: trawl, bottom gill net, line trap, and trap fisheries for lobsters. The priority actions included monitoring and control, characterizing fisheries systems, the assessment of stocks status, ecosystem impacts, and governance. Lessons learned: the EAF and the Ecosystem-based Management (EBM) were not yet understood properly; the baseline report was not properly disseminated and this might result in a non-willingness of some stakeholders to participate; it was necessary to put better communication into practice, and there was need to work on a specific communication plan and strategy, although the comanagement system put into practice, through the establishment of steering committees, would facilitate stakeholders interactions.

Follow-up: revision of the report on the national consultation and the EAF baseline report considering the contribution of participants; promotion and dissemination of results of the case study. The SAP must be approved by all countries involved.

4. Assessment studies

The authors of the assessment studies that were carried out presented the result of their work. A summary is provided here; the full content of the assessment studies is available in a separate report.

Stock status

Mr Paul Medley presented the review that he had carried out on the available stock assessments for all species that were assessed in Guyana, Suriname and Trinidad waters since 1999. For the main groundfish species, most stocks were considered at least fully exploited and some were likely to be overexploited. The penaeid shrimp stocks in general were likely to be in better condition, but some species were at risk of over-exploitation. The Atlantic seabob was likely to be in good condition in Suriname, and the reasons for this were reviewed. Generally, stock status was difficult to determine in

many species of shrimp and groundfish due to the lack of data and any recent stock assessment. In addition, a preliminary productivity-susceptibility analysis (PSA) on Suriname seabob trawl catch was presented as a possible way to carry out a rapid risk on the large number of species caught in this region.

Mr Macedo and Mr Aragão presented information available in Brazil. In northern Brazil, the shrimp fishery took place along the entire coastline of the region. Near the coast, the fishing fleet operating in shallow waters (estuaries and bays) was made-up of artisanal, small scale and medium scale boats. The landings occurred in many communities along the entire coastline of the region and were important primarily from the point of view of food safety, but also as a source of income for the large mass of fishermen. Catches in these fisheries were composed mainly of seabob shrimp (*Xiphopenaeus kroyeri*), white shrimp (*Litopenaeus schmitti*) and also by juvenile brown shrimp (*Farfantepenaeus subtilis*), as well as the diversity of species that composed the bycatch.

Industrial fishing was addressed primarily for the brown shrimp (*F. subtilis*) and was oriented to the external market. The landings increased until 1987/1988, reaching the historical record of 6 900 tonnes of tails, but since then it has been falling, reaching only 2 400 tonnes of tails in 2005. The decline of the landings was mainly due to the reduction of the fleet, driven by economic reasons. An important recovery, however, was observed in 2006, when the level of landings reached 4 400 tonnes of tails. In the following years, the maintenance of the low level of fishing effort resulted in landings oscillating between 1 081 tonnes in 2010, and 1 990 tonnes in 2008.

The level of exploitation of the stock has been maintained at moderate levels since the end of the 1990's ($E = 0.45$), although it has suffered high rates of exploitation in the 1980's, which led to a reduction in population size. The maximum sustainable yield, considered a long term average, was estimated at 4 032 tonnes of tail per year for a fishing effort of 19 370 days at sea. In the last five years, a tendency of recovering of the population biomass was observed, however annual fluctuations were characteristic of the species, probably influenced by the environmental conditions in the region.

Demersal fish in north Brazil were caught by the artisanal and industrial fishery. Gill nets, fixed traps, long lines were utilized in the artisanal fisheries while traps and vertical long liners were used in the red snapper fishery. Several other species were caught as by catch by the industrial shrimp fisheries using double rig trawl. Snapper was among the several species caught, the most important being: red snapper/pargo (*Lutjanus purpureus*); king weakfish/pescada gó (*Macrodon ancylodon*); silver croaker/pescada branca (*Plagioscion squamosissimus*); whitemouth croaker/corvina (*Micropogonias furnieri*); acoupa weakfish/pescada-amarela (*Cynoscion acoupa*); gurijuba (*Hexanematichthys parkeri*). There was little information on the performance of this fisheries or on the level of exploitation of the species, except some studies carried out on the red snapper fisheries with traps that have shown that a high proportion of immature fishes were caught due to the low selectivity of the gear.

Bioeconomic analysis

Mr Juan Carlos Seijo presented the study he had carried out with Ms Lara Ferreira and that compiled existing information on bioeconomic analysis of the shrimp and ground fisheries of the Brazil-Guianas Shelf, and on the update of economic performance of fleets operating in the Gulf of Paria and the Orinoco River Delta. The shrimp trawl fishery of Trinidad and Tobago and Venezuela was considered to be one of the more valuable fishery in the Brazil-Guianas region. One of the more dominant species exploited by the fleets was *F. subtilis* (brown shrimp). Five species of shrimp were harvested by the trawlers of Trinidad and Tobago and Venezuela: *Farfantepenaeus subtilis*; *P. schmitti*; *P. notialis*; *P. brasiliensis*; and *Xiphopenaeus kroyeri*. The study was aimed at analyzing management issues related to the current economic performance of fleets that target shrimp resources in the study region; the current bioeconomic status of the shrimp fishery; and to the bioeconomically sustainable level of effort for each vessel type in the shrimp shared stock fishery.

A comparison of the year 2000 and year 2010 number of vessels of Trinidad and Tobago and Venezuela fleets targeting shrimp species in the Gulf of Paria and Orinoco Delta indicated that: (i) the

artisanal fleets of Trinidad and Tobago (Type I and II) decreased by 10.4 percent during the decade under consideration, from 96 to 86 vessels; (ii) the Venezuelan artisanal fleet increased substantially, from 28 to 155, over this period; (iii) the semi-industrial fleet (Type III) of Trinidad and Tobago decreased from 11 to 8 vessels; (iv) the industrial fleet of Trinidad and Tobago increased from 19 to 27 over the period; and (vi) the Venezuelan industrial fleet, which had 88 vessels in 2000, ceased to operate in 2009. In 2010, the value of bycatch represented 18 percent of the total catch value of the three fleets. It should be pointed out, however, that the contribution of bycatch to total revenues vary among fleets. For the artisanal fleet, bycatch represented 11 percent of their total revenues, while it contributed to 27 and 21 percent to total revenues of semi-industrial and industrial fleets, respectively. In 2010, the calculated total value of shrimp catch and bycatch of the artisanal, semi-industrial and industrial fleets of Trinidad and Tobago was US\$ 5.7 million.

Concerning data availability, catch and effort data was available for the multispecies multifleet shrimp fishery of the Gulf of Paria and Orinoco River Delta. There were considerable information gaps of monthly catch and effort data of the Venezuelan artisanal fleet. Length frequency catch data on different shrimp species harvested by artisanal, semi-industrial and industrial fleets in the Gulf of Paria and Orinoco River Delta ceased to be collected and was needed to reflect current effects on different components of the population age structures. Concerning the seasonal and annual profits of the Trinidad and Tobago fleets, a significant difference was observed between the months where highest profits were obtained by the artisanal fleet (mode: August) against the months of highest profits of the semi-industrial and industrial fleets (mode: March). The intra-annual profits distributions tended to express the sequential nature of artisanal/industrial shrimp fisheries.

Results from the bioeconomic model built for the multispecies multifleet shrimp fishery of Venezuela and Trinidad and Tobago, and the decision table analysis indicated that the effort of each the fleets, should not be expanded further. Decision tables applying criteria with different degrees of risk aversion showed that effort levels should be reduced with parsimony towards maximum economic yield levels to maintain biomass and profits away from risky levels which could result from the effects of climate change and other possible natural and anthropogenic activities, affecting population growth parameters.

5. Governance assessment in the wider Caribbean

Prof Robin Mahon presented the assessment of transboundary governance assessments in the North Brazil Shelf LME. The presentation covered the conceptual development of the CLME approach to governance assessment, the methodology used and the conclusions and recommendations reached. The basic steps in the assessment were to identify key transboundary issues, determine if there was a governance arrangement to address each issue and evaluate the extent to which the arrangements were integrated. The main findings and conclusions of the assessment were as follows.

At the level of the individual arrangements:

- The fisheries arrangement lacked a decision-making stage.
- The Protocol Concerning Pollution from Land-Based Sources (LBS) and Activities process was regional at level of the Wider Caribbean Region (WCR), but there was no mechanism at the fisheries ecosystem level to engage with other issue arrangements at that level.
- Brazil was not part of the Caribbean Regional Seas (Cartagena Convention LBS Protocol for the WCR), although it was part of FAO WECAFC.
- There was no transboundary arrangement for coastal habitat destruction.
- There was no transboundary arrangement for piracy.

Overall, there was no mechanism for integration among issue specific arrangements as needed for an EAF.

The recommendations addressed these issues directly with a view to building an effective subregional ocean governance arrangement.

A group exercise that examined the extent to which 13 principles were considered to be present in the fisheries arrangement was carried out in three groups: (1) directors and senior fisheries officers; (2) Fisheries Department technical staff; and (3) fishing industry and fisher association representatives. The purpose of the exercise was to facilitate the discussions on what actions would be necessary to enhance the presence of those principles deemed to be lacking. The latter group was not very well aware of the arrangement or its operation and were only able to provide a limited assessment. The assessment for the other two groups identified various areas of deficiency that could be improved through dialogue among stakeholders.

6. The SAP and contribution of the case study on shrimp and groundfish

Results from the national consultations held in the different countries were merged according to the typical three categories of issues, as used in the EAF framework: Ecological Well-being, Socio-economic or Human Wellbeing and Ability to Achieve or Governance. The same three groups of participants as above were asked to:

- Ensure that the lists of issues coincided with what was discussed at respective national consultations
- Identify those issues which presented transboundary influences
- Highlight a maximum of five issues per category that were of a significant transboundary priority and must be addressed regionally

The result is summarized in the table below.

Chief Fisheries Officers/Directors	
Component	Issues
Ecological Well-being	<ul style="list-style-type: none"> • Declining stocks of target species • Destruction of breeding grounds and catch of juveniles • High level of bycatch in industrial fishing resulting in impacts on the ecosystem and on the target species of the other fisheries • Juvenile (length under 6") salmon, croaker, blinch, cutlass fish, and snapper caught by trawls and gillnets. Juveniles of commercial species such as the mackerels which are targeted by pelagic gears are caught and discarded by trawlers • Habitat damage
Human Well-being	<ul style="list-style-type: none"> • Insufficient basic infrastructure (landing sites, roads, communications) • Fishers suffer financial losses and injuries/death from interactions with pirates • Poor conditions on board and safety at sea risk • Fishers competing for the same resource and conflicts for space • Inadequate social security (health insurance - workmen's compensation, pension) or no access to social services
Governance	<ul style="list-style-type: none"> • Insufficient zoning to regulate the activity of the different fisheries. Existing regulations are not necessarily based on scientific information • Existing legislation is outdated and inadequate for fisheries management • Insufficient ecological research/scientific information to support management measures and management plans • Inadequate or poor control, surveillance and enforcement • Piracy events occurring regularly and affecting fishermen (robbery, ransom requests)

Fisherfolk	
Component	Issues
Ecological Well-being	<ul style="list-style-type: none"> • Declining stocks of target species • Destruction of breeding grounds and catch of juveniles • Insufficient or limited knowledge on biology on target and non-target species, including catch/effort data and biology • Impacts on estuaries and mangroves: nursery areas and Protected Areas • Habitat damage
Human Well-being	<ul style="list-style-type: none"> • Fishers suffer financial losses and injuries/death from interactions with pirates • Insufficient basic infrastructure (landing sites, roads, communications) • Inadequate social security (health insurance - workmen's compensation, pension) or no access to social services • Dependence on the fishery for a livelihood. Many fishers have no alternative means of employment • Negligible contribution to national GDP. There is potential to increase value added of product and foreign exchange earnings
Governance	<ul style="list-style-type: none"> • Inadequate or poor control, surveillance and enforcement • Inadequate support and resources for the administration • Inadequate flow of information, especially between government and industry • Insufficient capacity in the fishing communities to sustain viable fisherfolk organizations • The effects of Climate Change such as global warming can negatively impact on the abundance and productivity of the resource, and the ability to fish • Piracy events occurring regularly and affecting fishermen (robbery, ransom requests)

Fisheries/Technical Officers	
Component	Issues
Ecological Well-being	<ul style="list-style-type: none"> • Declining stocks of target species • High level of bycatch in industrial fishing resulting in impacts on the ecosystem and on the target species of the other fisheries • Insufficient or limited knowledge on biology on target and non-target species, including catch/effort data and biology • Destruction of breeding grounds and catch of juveniles • Habitat damage
Human Well-being	<ul style="list-style-type: none"> • Poor conditions on board and safety at sea risk • Insufficient basic infrastructure (landing sites, roads, communications) • Contamination of fish • Loss of employment due to decrease in catch and seasonality • Inadequate social security (health insurance - workmen's compensation, pension) or no access to social services
Governance	<ul style="list-style-type: none"> • Currently there are no functional multistakeholder management measures and management plans • Inadequate or poor control, surveillance and enforcement • Insufficient ecological research/scientific information to support management measures and management plans • Problems arising from the multisectoral use of fishing grounds • Piracy events occurring regularly and affecting fishermen (robbery, ransom requests)

The main comments that were made after the presentation of the results were the following:

- Safety at sea was not highlighted as an issue by the fisherfolk group, but rather by fisheries/technical officers and chief officers/directors. This may be due to the critical nature of accidents observed. This issue also included discipline onboard and the conditions onboard, which fisherfolk might accept as non-substantial
- Most fishermen seemed to live on a day-to-day basis
- Education about social security was a necessity

- CRFM had done a poverty study in ten selected CARICOM countries
- An industry overview must be done regarding harvesting, processing and marketing
- Fishers in many countries did not have insurance (in French Guiana, if a fisherman was injured at sea, he may be entitled to 100 percent compensation).

There was a strong overlap between issues listed by the different groups and it was decided to merge them so as to come up with only one exhaustive table.

Component	Main issues
Ecological Wellbeing	<ol style="list-style-type: none"> 1. Declining stocks of target species 2. Destruction of breeding grounds and catch of juveniles 3. Damage caused to habitat by trawling activities 4. Insufficient or limited knowledge on biology on target and non target species 5. High level of bycatch, including of juveniles of commercially important species, in industrial fishing 6. Pollution impacts on estuaries and mangroves: nursery areas and Protected Areas <p style="text-align: right;"><i>2, 3 and 6 are somewhat similar.</i></p>
Human well-being	<ol style="list-style-type: none"> 1. Inadequate social security 2. Insufficient basic infrastructure 3. Poor conditions on board and safety at sea 4. Fishers competing for same resources and conflict for space 5. Dependence on fisheries for the livelihood – no alternative means of employment 6. Loss of employment (decreasing catch and seasonality) 7. Low contribution of fisheries products to national GDP. There is potential to increase value added of product and foreign exchange earnings 8. Contamination of fish 9. Insufficient skilled workers with specific expertise in different fields
Governance	<ol style="list-style-type: none"> 1. Poor control surveillance and enforcement 2. Piracy 3. Insufficient zoning to regulate the activity of the different fisheries and other sectors 4. Insufficient ecological research/scientific information to support management measures and management plans 5. Existing legislation is outdated and inadequate for fisheries management 6. Inadequate support for administration and management of fisheries 7. Inadequate flow of information, especially between government and industry 8. Insufficient capacity in the industry to sustain viable fisherfolk organizations 9. No functional multi-stakeholder management committees that could be involved in the planning process 10. Effect of climate change/global warming

Ms Walker provided an overview of the current status of the SAP. She presented the vision that was agreed upon: “A healthy marine environment in the wider Caribbean providing benefits and livelihoods for the wellbeing of the Caribbean people through good governance and management of its resources”, highlighting that it was very broad and encompassed several different sectors (not only fisheries). Ms Walker also presented the ecosystem quality objectives for the three different ecosystems of the CLME region (reefs, continental shelf, pelagic) and presented the interventions that were proposed, so far, for the different fisheries operating in these ecosystems: the flyingfish fishery; the lobster and conch fisheries; the reef fish fisheries; and the shrimp and groundfish fisheries. Ms Walker also explained what type of indicators would be used in the SAP, according to the timeframe of the proposed interventions (process indicators for short term, stress reduction indicators for medium term and environmental indicators for long term). Finally, Ms Walker presented the SAP timeline, indicating that a draft would be available in December 2012, to be presented at the CLME steering committee in early 2013 and for possible ministerial endorsement by April 2013.

The interventions for shrimp and groundfish fisheries that were proposed so far for inclusion in the SAP were then presented in detail. The participants were requested to continue the group work by discussing these interventions and adding to them when they felt that they did not reflect entirely the priorities they would like to see included in the SAP. The result is summarized in the table below that includes the current interventions and the inputs by the three groups.

Current proposed interventions in the SAP	New inputs/proposal from the technical officers	New inputs/proposal from the fisherfolks	New inputs/proposal from the directors of fisheries
<p>1. Strengthening the regional/subregional collaboration in resource assessment and management, including intersectoral links</p> <p>a. Update and harmonize fisheries-related legislation at subregional level</p> <p>b. Subregional EAF Management plans developed for shared fishery resources</p> <p>c. Up scaling of early results: broader implementation of identified best practices for sustainability and fisheries management tools in the sub-region (allocation of user rights for fisheries management, zoning, no-take zones, TACs, logbooks, etc.)</p> <p>d. Strengthen participatory approach in fisheries management as part of EAF implementation and enhance public awareness on sustainable use of marine ecosystems</p> <p>e. Strengthen the knowledge base on fisheries resources ecology and mapping of essential habitats</p> <p>2. Identification of alternative livelihoods, including aquaculture and inland fisheries</p> <p>a. Development of subregional frameworks for aquaculture development</p> <p>b. Upscaling of best practices/lessons learnt within the region and from other regions</p>	<p><u>Ecological Wellbeing:</u></p> <ol style="list-style-type: none"> 1. Take measures to reduce fishing; need to maintain fishery income (increasing value/unit product; alternative employment, etc.) 2. Closed-seasons; technical enhancements for gear (selectivity, improved methods); rehabilitation of important habitats (nurseries, breeding grounds) 3. (Tied into 2.) 4. Collection of long-term data (monitoring; catch/effort) and short-term data (project specific data; growth data parameters). Gathering and assimilating traditional knowledge about fishery 5. More evaluation of BRDs, move-on rules <p><u>Human WellBeing:</u></p> <ol style="list-style-type: none"> 1. Education on importance of ss programs; legislate that ss be mandatory 2. Autonomous cooperatives which manage government-built facilities; required to pay fees to utilize facilities (personal investment) 3. Education and training (swimming, safety protocols, utilization of safety equipment); legislate that owners ensure the security of their fishermen <p><u>Governance:</u></p> <ol style="list-style-type: none"> 1. Improve VMS/GSM & and SMS infrastructure 2. Need to redefine Piracy in a legal sense (where and when is theft instead piracy; high seas vs. EEZ) 3. Ensure that fisherfolk are represented in regional organizations 	<ol style="list-style-type: none"> 1. Closed seasons for target species to allow for the replenishment of the stocks 2. Establishment of fishing zones and monitoring and enforcement 3. Same as above 4. Need for the strengthening of the knowledge base 5. Zoning as a short term to medium term. Following by no take zone and the reduction of the fleet trawl – long term measure 6. Interagency arrangement to address the pollution issue 7. Need for an education and awareness programme for fishers on the importance of social security 8. Need for the strengthening of fisherfolks coops/associations to better manage and maintain the fisheries infrastructure 9. More monitoring and enforcement at sea 	<ol style="list-style-type: none"> 1. Freeze existing fishing effort – No increase to ALL fishing effort or size of fleet with a view to future reduction beyond existing level 2. Enforce existing regulation to regulate fishing in breeding grounds. Establish regulations for the protection of breeding grounds 3. Promote BAT (e.g. BRD, otter boards, and TEDs) for environmentally friendly gear based on research and collaboration with stakeholders 4. Encourage industrial sector to meet effluent stds. Develop environmental quality stds for receiving environment 5. Encourage fishing community to contribute to social security on an in kind basis with the government 6. Modernization of the fleet to meet OSHA safety and working standards 7. Establish minimum standards for wages and time spent at sea i.e. decent working conditions for fishers 8. Divestment from the fishing sector, promotion of the alternative livelihoods 9. Establish of a firm framework for the zoning, demarcation of territories for management of fisheries 10. A communication strategy to facilitate the flow of information and feedback (i.e. workshops, consultations, extension services, training etc.). To incorporate a multisectoral approach at the regional level

The comments that were provided after the presentation were as follows:

- The initial interventions that were proposed were very broad. The new proposals made by the groups were more detailed, but they now need to be included in the broader interventions. A discussion was held on the difference between intervention, action and management measure. It appeared that the workshop participants were willing to propose practical actions, whereas the interventions required in the SAP needed to be broad and focussed on governance.
- Each country may have practical short-term plans that it would like to implement immediately in line with the long-term actions of the SAP. There would be an opportunity for this to happen during the wait for the implementation of SAP. There may be an opportunity for technical assistance from FAO for these short term plans.
- Agriculture would be around after mineral resources were depleted. As such, governments needed to make agriculture and fisheries a more important aspect in countries. Focus must shift in order to raise the profile of agriculture, fisheries and aquaculture sectors.
- There was a desire for the countries to continue working with the FAO. This would entail continual discussions. However, each respective country must take feedback and discuss focal points with the respective administrations in order to move forward with the SAP objectives.
- There would only be one SAP for all the ecosystems involved (reef, shelf and pelagic). All participating countries must agree to the SAP (at least 23 countries).

7. What's next?

It was agreed that the issues and actions should be merged and reformulated when necessary in order to be included in the interventions that were already proposed for the continental shelf, in line with the requirements of the CLME Project.

Finally, the project proposal of REBYC-II LAC (Sustainable management of bycatch in Latin America and Caribbean trawl fisheries) that is under finalization, was presented by Mr Petri Suuronen (FAO). The major goal of the proposed project is to achieve more sustainable use of fisheries resources by (i) facilitating collaborative governance; (ii) introducing cost-effective solutions to minimize trawling impacts; (iii) identifying effective incentives for a change; (iv) identifying alternative livelihoods; and (v) seeking balance between environmental wellbeing and human wellbeing. A large and diverse group of stakeholders playing a role in bottom/shrimp trawl fisheries in the region should be engaged. These includes national fisheries authorities, private fishing sector (*fishers, processors and retailers*), regional fisheries organizations, regional fisheries projects, NGOs and others. Tailored and cost-effective measures are needed to address the problems and to ensure that benefits are enhanced and risks are reduced.

The private sector should be engaged to participate in developing cost-effective best practices and adaptive comanagement arrangements to effectively manage bycatch and reduce ecosystem impacts. To effectively engage the private fishing sector (small and large scale), it is required that the critical barriers be properly understood and fishing sector's needs recognized. Mechanisms should be identified for creating adequate incentives for a change (e.g. market-based measures, reduction of operational costs, better utilization of sustainable bycatch, value adding). Alternative fishing practices, fisheries and other livelihoods should be identified and demonstrated. Primary stakeholders' knowledge and capacity on bycatch, and adaptive collaborative management should be improved. Data collection processes on bycatch, discards and seabed impacts should be developed and standardized.

The Project PIF (concept note) should be submitted to GEF in early 2013. The Project Plan should be prepared in 2013 and the project should be executed in 2014-2017. Most activities in the project were planned to be executed in selected fisheries in the Caribbean Large Marine Ecosystem and adjacent regions. Some case-studies, however, should be implemented on the Pacific coast because of the high importance on bottom/shrimp trawl fishing. Countries that are likely to participate in the project included Brazil, Colombia, Costa Rica, Mexico and Suriname. Mr Suuronen informed the meeting

that there is still room for one additional country that had the capacity to carry out a useful pilot study that could benefit the region.

8. Closing remarks

Ms Bianchi thanked all participants for their active involvement in the workshop and recalled that the actions discussed should be synthesized and, wherever necessary, reformulated for appropriate inclusion in the CLME-SAP. Ms Bianchi emphasized on the need for action and results with the motivation garnered from these meetings and highlighted the importance of building on the momentum that was created during the case study.

Ms Walker also thanked the countries for their continued commitment for sustainable fisheries management and reiterated the importance of implementing the EAF. She also expressed her gratitude to the Ministry of Food Production of Trinidad and Tobago for hosting the meeting.

Appendix 1 – List of Participants

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Appendix 2 – Agenda

Day 1 - 16 October 2012

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|--------------|--|
| 9.00 – 9.20 | Opening of the workshop <ul style="list-style-type: none"> · Welcome Addresses –FAO, CLME, CRFM · Opening statement by the Trinidad & Tobago Authorities |
| 9.20 – 10.00 | <ul style="list-style-type: none"> · Introductory Remarks - Overview of the roadmap and activities carried out during the project period and workshop objectives · Election of Chair · Adoption of the agenda · Introduction of participants · Housekeeping |

Session 1: Synthesis of activities carried out and outcomes of national consultations

Objective: Review of the Case Study roadmap and activities; and present and discuss outcomes of the activities carried out in the participating countries, including the main results, lessons learned and top priorities

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|---------------|--|
| 10.00 – 10.15 | Overview of the CLME-SAP |
| 10.15 – 10.30 | Coffee/tea |
| 10.30 – 10.45 | Overview of the Ecosystem Approach to Fisheries Principles |
| 10.45 – 11.15 | Trinidad & Tobago |
| 11.15 – 11.45 | Guyana |
| 11.45 – 12.15 | Surinam |
| 12.15 – 12.45 | Brazil |
| 12.45 – 13.45 | Lunch |
| 13.45 – 14.15 | French Guiana |

Session 2: Ecological wellbeing issues and priorities

Objective: Present the shrimp and groundfish stock assessment studies and synthesize, discuss and agree on top priority issues and actions related to ecological well-being for inclusion in the SAP

- | | |
|---------------|---|
| 14.15 – 14.45 | · Presentation of the assessment study on status of the shrimp and groundfish stocks in the North Brazil Shelf Large Marine Ecosystem |
| 14.45 – 15.00 | · Presentation of the assessment study on status of the shrimp and groundfish stocks in the Brazilian waters of the North Brazil Shelf Large Marine Ecosystem |
| 15.00 – 15.15 | Definition of groups |
| 15.15 – 16.30 | Group work (coffee/tea will be available) |
| 16.30 – 17.15 | Report to plenary by groups |
| 17.15 – 17.45 | Discussion |

Day 2 - 17 October 2012

Session 3: Governance issues and priorities

Objective: Synthesize, discuss and agree on priority issues and actions related to governance for inclusion in the SAP and complete the governance assessment

08.30 – 09.00	Presentation of the governance assessment and current gaps
09.15 – 09.30	Definition of groups
09.30 – 10.00	Group work
10.00 – 10.15	Coffee/tea
10.15 – 11.00	Group work (cont.)
11.00 – 12.00	Report to plenary by groups
12.00 – 12.30	Discussion
12.30 – 13.30	Lunch

Session 4: Human wellbeing issues and priorities

Objective: Present the bioeconomic assessment studies and synthesize, discuss and agree on top priority issues and actions related to human well-being for inclusion in the SAP

14.00 – 14.30	· Presentation of the bioeconomic assessment of the shrimp and groundfish fisheries in the project area
14.30 – 14.45	· Presentation of the bioeconomic assessment of the shrimp and groundfish fisheries in the Brazilian waters of the North Brazil Shelf Large Marine Ecosystem
14.45 – 15.45	Definition of groups
15.45 – 16.30	Group work (coffee/tea will be available)
16.30 – 17.00	Report to plenary by groups
17.00 – 17.30	Discussion

Day 3 - 18 October 2012

Session 5: Follow-up and synergies

Objective: Discuss the follow-up actions and identify synergies with ongoing or future initiatives

08.30 – 10.00	Presentation of the CLME-SAP: process, current status and discussion
10.00 – 10.15	Coffee/tea
10.15 – 10.45	SAP discussion (cont.)
10.45 – 11.15	Sustainable management of bycatch in the Caribbean and Latin American multispecies bottom / shrimp trawl fisheries, the REBYC II initiative: status and potential synergies
11.15 – 11.45	Case study on shrimp and ground fish follow-up actions
11.45 – 12.00	Wrap-up and closure
12.00 – 13.00	Lunch

This document presents the results of a wrap-up workshop that was organized in the framework of the Case Study on the Shared Stocks of the Shrimp and Groundfish Fishery of the Guianas-Brazil Shelf of the Caribbean Large Marine Ecosystem Project (CLME). It is the last of ten reports that were produced as a result of the case study activities. These documents summarize the outputs of the different steps undertaken to mainstream the Ecosystem Approach to Fisheries (EAF) in the management of the shrimp and ground fish resources of the Northern Brazil Shelf Ecosystem.