GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Naoko Ishii
CEO and Chairperson

January 21, 2016

Dear SCCF Council Member:

FAO as the Implementing Agency for the project entitled: ***Regional (Antigua And Barbuda, Dominica, Grenada, St. Kitts And Nevis, St. Lucia, Trinidad and Tobago, St. Vincent and Grenadines): Climate Change Adaptation in the Eastern Caribbean Fisheries Sector*** , has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with FAO procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by the SCCF Council in March 2014 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by FAO satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.TheGEF.org. If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Naoko Ishii
Chief Executive Officer and Chairperson

Attachment: GEFSEC Project Review Document
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee

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REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND: SCCF

For more information about GEF, visit TheGEF.org

PART I: PROJECT INFORMATION

Project Title: Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project			
Country(ies):	Antigua and Barbuda, Dominica, Grenada, St. Kitss and Nevis, Saint Lucia, St. Vincent and the Grenadines, Trinidad and Tobago	GEF Project ID:	5667
GEF Agency(ies):	FAO	GEF Agency Project ID:	621550
Other Executing Partner(s):	Main Executing Partner(s): 1. Fisheries Division of the Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs , Antigua and Barbuda 2. Fisheries Division of the Ministry of Agriculture and Fisheries, Dominica 3. Fisheries Division of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment, Grenada 4. Department of Marine Resources of the Ministry of Agriculture, Marine Resources and Cooperatives, St Kitts And Nevis 5. Department of Fisheries Division of the Ministry of Agriculture, Food Production, Fisheries, Co-operation and Rural Development, Saint Lucia 6. Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry, St Vincent And The Grenadines 7. Fisheries Division of Ministry of Land and Marine Resources, Trinidad and Tobago 8. Western Central Atlantic Fishery Commission (WECAFC) 9. Caribbean Regional Fisheries Mechanism (CRFM) 10. Caribbean Network of Fisherfolk Organizations (CNFO) 11. University of the West Indies (UWI) 12. CARIBSAVE partnership 13. The Nature Conservancy (TNC)	Submission Date: Re-submission date:	23 July 2015 1 October 2015 16 November 2015 29 December 2015
GEF Focal Area (s):		Project Duration (Months)	48
Name of Parent Program (if applicable): ➢ For SFM/REDD+ ☐ ➢ For SGP ☐	NA	Agency Fee ($):	518,700

A. FOCAL AREA STRATEGY FRAMEWORK

Focal Area Objectives	Expected FA Outcomes	Trust Fund	Grant Amount ($)	Co-financing ($)
CCA-1	Outcome 1.2: Livelihoods and sources of income of vulnerable populations diversified	SCCF	1 215 000	12 154 000

	and strengthened. Outcome 1.3 Climate-resilient technologies and practices adopted and scaled up.			
CCA-2	Outcome 2.1: Increased awareness of climate change impacts, vulnerability and adaptation. Outcome 2.2: Access to improved climate information and early-warning systems enhanced at regional, national, sub-national and local levels. Outcome 2.3: Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor, and evaluate adaptation strategies and measures.	SCCF	2 996 000	19 732 500
CCA-3	Outcome 3.2: Policies, plans and associated processes developed and strengthened to identify, prioritize, and integrate adaptation strategies and measures.	SCCF	1 249 000	5 655 500
Total			**5 460 000**	**37 542 000**

B. PROJECT FRAMEWORK

Project Objective: To increase resilience and reduce vulnerability to climate change impacts in the eastern Caribbean fisheries sector, through introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount ($)	Confirmed Co-financing ($)
1. Understanding and awareness of climate change impacts and vulnerability in the fisheries sector	All outputs are TA	**Outcome 1.1** Increased awareness and understanding of climate change impacts and vulnerability *Target:* *Indicator 6 AMAT* Regional vulnerability assessment for the local level developed and carried out in five project countries *Target:* *Indicator 5 AMAT*: 1 500 people will have an increased awareness of climate change impacts on the fisheries sector and adaptation practices.	**Output 1.1.1:** Assessment on climate change vulnerability in the fisheries sector developed and implemented at regional, national and local level assessed **Output 1.1.2**: Models that describe fisheries abundance and accessibility **Output 1.1.3:** Findings of vulnerability assessments and models disseminated at regional, national and local level to improve understanding	SCCF	944 000	11 484 833
2. Increasing		**Outcome 2.1:**	**Output 2.1.1:** Strengthened	SCCF	2 725 000	19 063 333

fisherfolk, aquaculturists and coastal community resilience to climate change and variability	2.1.1. INV 2.1.2 TA 2.1.3 INV 2.2.1 INV 2.2.2 TA	Fisherfolk and fish workers not equipped to take advantage of existing or alternative livelihoods or diversification options **Outcome 2.2:** Improved resilience of aquaculturists *Target:* *Indicator 3 AMAT:* -4,200 people (men and women) will benefit from adoption of diversified, climate resilient livelihood options by means of adaptation measures; alternative livelihoods and capacity building (40% female) *Indicator 4 AMAT:* -1,400 people will adopting adaptation technologies (20% female)	ICT capacity of fisherfolk and CNFOs **Output 2.1.2:** Strengthened fisherfolk and CNFO capacity and associated equipment delivered **Output 2.1.3:** Exchange programs on fisheries co-management and adaptation technology **Output 2.2.1** Existing aquaculture centers rehabilitated and new aquaculture centers established **Output 2.2.2** Strenghtened capacity of aquaculturists in climate change adaptation measures and adaptive technologies			
3. Mainstreaming of climate change adaptation in multi-level fisheries governance	3.1.1. INV 3.1.2 TA	**Outcome 3.1:** Climate change adaptation mainstreamed in multilevel fisheries governance *Target:* *Indicator 10 AMAT:* the capacities of five (5) national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies is improved with five points *Indicator 12 AMAT:* - National policies and plans to identify, prioritize and integrate adaptation strategies and measures in five (5) countries are strengthened with 5 points	**Output 3.1.1:** Strengthened institutional regional and national capacity on mechanisms to implement climate change adaptation measures **Output 3.1.2:** Climate change adaptation mainstreamed into policies, plans and associated processes	SCCF	978 000	4 986 334
4.Project Monitoring and Evaluation and Knowledge	All outputs are TA	**Outcome 4.1:** Project implemented. Lessons learned and best practices have	**Output 4.1.1** Project management, monitoring and evaluation system operating and	SCCF	553 000	1 407 500

Management		been documented and disseminated. *Target:* The project has been executed with a results based management approach. Project sustainability has been ensured. *Target:* 2 biannual reports 1 Mid-Term Evaluation 1 Final Evaluation report	providing systematic information on progress in reaching expected outcomes and targets **Output 4.1.2** Project knowledge management system **Output 4.1.2** Midterm and final evaluations; implementation and sustainability strategy adjusted to recommendations.			
			Subtotal		5 200 000	36 942 000
			Project management Cost (PMC)	SCCF	260 000	600 000
			Total project costs		**5 460 000**	**37 542 000**

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME ($)

Sources of Co-financing	Name of Co-financier (source)	Type of Co-financing	Co-financing Amount ($)
National government Antigua and Barbuda	Fisheries Division of the Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs	Cash	1,900,000
National government Antigua and Barbuda	Fisheries Division of the Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs	In-kind	1,350,000
National government Dominica	Fisheries Division of the Ministry of Agriculture and Fisheries	In-kind	1,250,000
National government Grenada	Fisheries Division of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment	In-kind	1,500,000
National government St. Kitts and Nevis	Department of Marine Resources of the Ministry of Agriculture, Marine Resources and Cooperatives	In-kind	1,250,000
National government St. Lucia	Fisheries Division of the Ministry of Agriculture, Food Production, Fisheries, Co-operation and Rural Development	Cash	3,640,000
National government St. Lucia	Fisheries Division of the Ministry of Agriculture, Food Production, Fisheries, Co-operation and Rural Development	In-kind	1,840,000
National government St. Vincent and the Grenadines	Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry	Cash	300,000
National government St. Vincent and the Grenadines	Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry	In-kind	1,200,000
National government Trinidad and Tobago	Fisheries Division of Ministry of Land and Marine Resources	Cash	3,900,000
National government Trinidad and Tobago	Fisheries Division of Ministry of Land and Marine Resources	In-kind	15,600,000
University of the West-Indies	CERMES	Cash	102,000
University of the West-Indies	CERMES	In-kind	110,000
Caribbean Regional Fisheries Mechanism		In-kind	400,000

TNC		Cash	200,000
CARIBSAVE		In-kind	1,000,000
FAO/WECAFC		Cash	1,000,000
FAO/WECAFC		In-kind	1,000,000
Total Co-financing			**37,542,000**

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in $)		
				Grant Amount (a)	Agency Fee (b)[2]	Total c=a+b
FAO	SCCF		Regional	5,460,000	518,700	**5,978,700**
Total Grant Resources				**5,460,000**	518,700	**5,978,700**

[2] Indicate fees related to this project.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount ($)	Co-financing ($)	Project Total ($)
International Consultants	405 000	0	405 000
National/Local Consultants	0	0	0
Total consultants	405 000	0	405 000

G. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? **No**

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF

A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.

No changes from PIF. Trinidad and Tobago has now submitted their Second National Communications (SNC) to the UNFCCC. Please refer to the Sub-section 1.1.5 of the FAO-GEF Project Document for further details.

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities.

As advised by the SCCF team, the project has been re-aligned with the simplified GEF-6 Climate Change Adaptation Strategy. Table A of this CEO Endorsement Request (CEO ER), tracking tool indicators, and target indicators in the

Project Results Framework (see Appendix 1 of the Project Document) are aligned with the revised SCCF Strategy[1] and Tracking Tool[2].

All project countries are eligible for SCCF funding. The project has been endorsed by the GEF Operational Focal Points, on behalf of the seven governments. The seven project countries are all non-Annex I parties. This project is consistent with the SCCF eligibility criteria, because it addresses the priorities identified in preparation of the First (FNC) and Second National Communications (SNC) to the UNFCCC (see section A.1 above and sub-section 1.1.5 in the FAO/GEF Project Document). These recognize the importance of the fisheries sector to food security and livelihoods and employment as well as the vulnerability of the fisheries sector to climate change. This Project proposal is consistent with SCCF criteria because it is cost-efficient and builds on national and regional strategies for climate change adaptation.

The CC4FISH project is at the heart of the GEF / SCCF's mandate. Addressing adaptation priorities of vulnerable Eastern Caribbean countries is urgently needed to reduce climate change impacts and move towards a more resilient fisheries sector. The project is aligned with all three Climate Change Adaptation objectives of the SCCF.

Component 1 is aligned with the Climate Change Adaptation (CCA) Focal Area Objective 2 (CCA-2): *Strengthen institutional and technical capacities for effective climate change adaptation;* in particular with CCA-2 outcome 2.2 (*Access to improved climate information and early-warning systems enhanced at regional, national, sub-national and local levels);* and CCA-2 outcome 2.1 (*Increased awareness of climate change impacts, vulnerability and adaptation).* CCA Tracking tool indicators #5 and 6 have been incorporated in the Project Framework accordingly (see Table B above).

Component 2 is aligned with the CCA Focal Area Objective 1 (CCA-1): *Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change;* in particular with CCA-1 outcome 1.2 (*Livelihoods and sources of income of vulnerable populations diversified and strengthened)*; and CCA-1 outcome 1.3 (*Climate-resilient technologies and practices adopted and scaled up).* CCA Tracking tool indicators #3 and 4 have been incorporated in the Project Framework accordingly (see Table B above).

Component 3 is in line with CCA-2 outcome 2.3 (*Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures)*, and with CCA Focal Area Objective 3 (CCA-3): *Integrate climate change adaptation into relevant policies, plans and associates processes,* in particular with outcome 3.2 (*Policies, plans and associated processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures).* CCA Tracking tool indicators #10 and 12 have been incorporated in the Project Framework accordingly (see Table B above). Component 4 is aligned with CCA-3 as well.

A.3 The GEF Agency's comparative advantage:

No changes from PIF.

A.4. The baseline project and the problem that it seeks to address:

The baseline project and barriers that the project seeks to address have been further analyzed and detailed during the full project preparation. Please see the FAO-GEF Project Document section 1.1. b) *Climate change vulnerability and problems;* 1.1.1 b) *Baseline projects and investments;* and b) *Remaining barriers to address threats on CC vulnerabilities.*

A.5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The project aims to increase resilience and reduce vulnerability to climate change impacts in the eastern Caribbean fisheries sector, through introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists.

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1 https://www.thegef.org/gef/sites/thegef.org/files/documents/GEF.LDCF_.SCCF_.16.03.%20Programming%20Strategy%20on%20Adaptation%20to%20Climate%20Change%20for%20the%20LDCF%20and%20the%20SCCF.%205-20-14.pdf

2 https://www.thegef.org/gef/tracking_tool_LDCF_SCCF

The SCCF additional financing of USD 944,000 for Component 1 will support the regional design and implementation of vulnerability assessments at the local level in selected project sites; the development of a model to assess sargassum impacts on dolphinfish and flyingfish fisheries; risk assessment modelling for pelagic (and demersal) fisheries with climate change and variability utilization; and design and implementation of a communication strategy to widely disseminate the findings.

The regional partners CARIBSAVE, CERMES, FAO and TNC will provide an amount of USD 522 500 (in-kind) and USD 119 000 (in cash), mainly for the support and technical supervision of vulnerability assessment development; and modelling assessments.

The national Fisheries Divisions will co-finance an amount of USD 7,873,333 in kind, corresponding to the time of local staff to assist in conducting vulnerability assessments, modelling and supporting awareness-raising for key stakeholders and the general population on the findings from the activities. The national Fisheries Divisions will co-finance an amount of USD 2,970,000 in cash, corresponding to business as usual budgets, equipment and in-country travel of staff as well as hire on consultants.

The SCCF additional financing of USD 2,725,000 in Component 2 will be directed to carry out the training programmes, develop adaptive capacity and develop and implement climate adaptive technology and develop new aquaculture centres and rehabilitate existing ones.

The regional partners CARIBSAVE, CERMES, CRFM, FAO and TNC will provide an amount of USD 640,000 (in-kind) mainly for the support and technical supervision of training, workshop and exchange programs. They will provide USD 75 000 (cash), mainly for activities under projects related to building resilience of coastal communities

The National Fisheries Divisions will co-finance an amount of USD 12,618,333 (in-kind), corresponding to the time of local staff to carry out training, workshops (e.g. on business skills, safety at sea and improving food handling and safety) and develop protocols in terms of early warning systems and DRM protocols. The National Fisheries Divisions will co-finance an amount of USD 5,730,000 (cash) corresponding to business as usual budgets, equipment and in-country travel of staff as well as hire on consultants.

The SCCF additional of USD 978,000 in Component 3 will be directed to carry out the training programme, support integration of Ecosystem Approach to Fisheries (EAF), Disaster Risk Management (DRM) and CCA into policies at the national level and support communication for climate change adaptation and public awareness. SCCF funds will provide additional financing to mainstream adaptation activities in national governments' regular budgets and staff time allocation (detailed in Table 8, Prodoc). At project completion, the 7 countries are expected to have trained government staff that is able to identify, prioritize, implement, monitor and evaluate adaptation strategies in the fisheries sector (see output 3.1.1, Appendix 1 Prodoc). In addition, adaptation strategies will be mainstreamed into national policies and plans of the fisheries sector (see output 3.1.2). Fisheries policies and plans have budget allocations provided by the National Fisheries Agencies, or equivalent, in the seven countries. By the end of the project, fisheries policies and plans will be adaptive and in line with EAF principles in the 7 countries.

The regional partners CARIBSAVE, CERMES, CRFM, and FAO will provide an amount of USD 340,000(in kind) and USD 108,000 (in cash), mainly for the support and technical supervision of training, workshop and exchange programs. The National Fisheries Divisions will co-finance an amount of USD 3,498,334 (in-kind), corresponding to the time of local staff to help implement integrate EAF, DRM and CCA into the policies at national level, support training, workshops and communication on public awareness. The National Fisheries Divisions will co-finance an amount of USD 1,040,000 (cash) corresponding to business as usual budgets, equipment and in-country travel of staff as well as hire on consultants.

The SCCF additional financing of USD 553,000 for Component 4 will be directed to M&E activities, including monitoring project progress and fulfillment of indicators, midterm and final external evaluations, project systematization and preparation of dissemination materials.

The regional partners CARIBSAVE, CERMES, CRFM, and FAO will provide an amount of USD 707 500 (in-kind) and USD 700 000 (cash). This is mainly to accumulate and provide information to reach the monitoring project progress reports as well as the external evaluations, and to support systematization and preparation of dissemination materials.

The SCCF additional financing of USD 260,000 for Project Management will be directed to Project management activities.

The regional partners CARIBSAVE, CERMES, CRFM, and FAO will provide an amount of USD 300,000 (in-kind) and USD 300,000 (cash). This is mainly to provide technical support to the Regional Project Coordinator and the Operational and Administrative Officer.

Kindly see the full Additional Reasoning in sub-section 1.1.1 *d) Additional reasoning* of the Project Document.

Adaptation benefits

The main project's beneficiaries will be 2800 small scale fisherfolk and aquaculturists and their household members (including at least 20 percent women) who through climate change adaptation will improve their livelihoods, their resilience in the face of climate change, their food security, and will receive higher incomes per family through increased fisheries production. The 2800 producers will benefit from demand-driven technical training, improved safety-at-sea knowledge and measures, improved access to technology, and an increased awareness on climate change impacts and the vulnerability of the fisheries sector.

Indirect beneficiaries of the project will be at the household and community level because a climate resilient fisheries sector generates positive impacts on coastal communities at a larger scale. The wider public will also be indirect beneficiaries, as they will receive information on climate change vulnerability and adaptation efforts by the fisheries sector. Awareness raising and training materials will be made available to the public for free through on-line sources. In terms of influencing public policy and youth these factors can be critical for successful longer term outcomes.

Please refer to Section 2.5 *Adaptation Benefits* of the Project Document for a full description.

Changes in the results framework compared to the PIF

The objective of the project remained largely unchanged yet the components (and subsequent outputs) have been re-organized to ensure streamlining as requested by the STAP. Project components 2, 3 and 5 as described in the PIF have been merged into one component (Component 2). The previous Component 4 has now become Component 3. A new component (Project M&E and Knowledge Management) has been added, at the request of the project countries. This has now become component 4. The Project Results Framework now reflects the full integration among CCA 1, CCA2, and CCA3. Therefore there are some adjustments in the structure of the outputs between PIF and CEO endorsement:

Component 1:

- Output 1.1 has been split over 1.1.1 and 1.1.3 as the strengthening of understanding of climate change impacts at the regional level fits into the new output 1.1.1 while the communicating thereof is incorporated under 1.1.3
- Output 1.3 and 1.4 have been incorporated into output 1.1.2 as the development of downscaled models currently incorporates both the biophysical as well as the socio-economic impacts.
- Output 1.5 is incorporated partly into output 1.1.1, 2.1.2 and 2.2.1 as participatory data collection and planning through pilot projects is part of these three outputs.

Project components 2, 3 and 5 as described in the PIF have been merged into one component (Component 2).

- Output 2.1 is now incorporated under output 2.1.2
- Output 2.2 and 2.3 are under 2.1.1

- Output 3.1 is now incorporated under various outputs (Output 2.1.1., 2.1.2; and 2.1.3; output 3.1.1 and 3.1.2) as the CNFO plays a role in all of these outputs while the CRFM play a role under 2.1.2 and output 3.1.1 and 3.1.2)

- Output 4.1 is incorporated under 2.1.2 and 2.1.3 as well as 3.1.2 as lessons learned and best practices shared take place in various ways and in various formats (e.g. exchange programs and educational material) throughout these different outputs.

- Output 4.2, 4.4 and 4.5 are now under output 3.1.1 as this relates to mainstreaming of climate change and implementation of EAF.
- Output 4.3 is incorporated under output 3.1.2 as this relates to mainstreaming of climate change policies and plans.
- Output 4.6 is now under output 3.1.1 and 3.1.2

Component 5 of the PIF, which related to aquaculture development and resilience, is now under component 2, outcome 2.2.

- Output 5.1 and 5.2 are under 2.2.1
- Output 5.3 and 5.4 are under 2.1.3

The table below summarizes the new numbering of Outputs as a result of the above-mentioned changes:

PIF	CEO endorsement
Output 1.1	Output 1.1.1 and 1.1.3
Output 1.2	Output 1.1.2
Output 1.3 and 1.4	Output 1.1.2
Output 1.5	Output 1.1.1 and 2.1.2 and 2.2.1
Output 2.1	Output 2.1.2
Output 2.2 and 2.3	Output 2.1.1
Output 3.1	Output 2.1.1, output 2.1.2; output 2.1.3; output 3.1.1 and 3.1.2
Output 3.3 and 3.4	Output 2.1.2
Output 4.1	Output 2.1.2 and 2.1.3
Output 4.2	Output 3.1.1
Output 4.3	Output 3.1.2
Output 4.4	Output 3.1.1
Output 4.5	Output 3.1.1
Output 4.6	Output 3.1.1 and 3.1.2
Output 5.1 and 5.2	Output 2.2.1
Output 5.3 and 5.4	Output 2.1.3

Please refer to Sections 2.2 *Project Objectives*, 2.3 *Expected Project Outcomes* and 2.4 *Project Components and Outputs* of the FAO-GEF Project Document for a detailed description. The Project Results Framework in Appendix 1 includes adaptation benefit indicators and targets at outcome level.

As a consequence of the regrouping of some Outputs and more detailed development of the project interventions there has also been some changes in the resources distribution between the PIF and CEO endorsement stages. Please refer to the Results Budget in Appendix 3 of the FAO-GEF Project Document for further details.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

The risks identified in the PIF were further developed in the Project Document based on risk analysis in the seven National Project Design Reports. Please refer to Appendix 4 "Risk Matrix" of the Project Document for the full risk assessment table.

A.7. Coordination with other relevant GEF financed initiatives

FAO, WECAFC, and the National co-executing Partners will coordinate and collaborate with implementing and executing agencies on a range of ongoing initiatives and projects related to fisheries governance and management in the region so as to identify opportunities and facilitate mechanisms for achieving synergies with other relevant GEF-supported projects (see table below), as well as with projects supported by other donors (see section 1.1.1a in Project Document).

Project	Project Name & Description	GEF Agency	Approx. implementation

countries involved		(executing agencies/ partners)	period & Status
All seven project countries	**CLME+** The "Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems" (CMLE+) Project is in final stage of development based on the Strategic Action Programme (SAP) and agreed under the first phase of the CLME (Caribbean Large Marine Ecosystem) project. The project will assist in the Wider Caribbean Region in improving the management of their shared Living Marine Resources through an EBM (ecosystem based management) approach. Facilitate the implementation of the 10-year politically endorsed *Strategic Action Programme for the Sustainable Management of the Shared Living Marine Resources of the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME$^+$ SAP)	**UNDP (UNEP, OSPESCA, CRFM, WECAFC/FAO)** GEF International Waters funded	*2015-2019* * *ProDoc approved*
Trinidad and Tobago	**REBYC-II LAC:** The "***Sustainable Management of By-catch in Latin America and the Caribbean Trawl Fisheries***" is a 5-year project that is seeking to enhance the management of by-catch and conservation of 'blue forest' habitats in Latin America and the Caribbean bottom/shrimp trawl fisheries through effective public and private sector partnership and adoption of best practices that support sustainable livelihoods. It is anticipated that the project will provide an opportunity for a major scaling up and strengthening of participatory and sustainable fisheries and by-catch management within a globally important fisheries sector. (GEF ID 5304)	FAO/ WECAFC	*2015-2020* **Project Identification Form approved; ProDoc under development*

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

B.1.1 Project implementation and management arrangements

The project management structure will ensure the participation of key stakeholders during project planning, implementation and M&E through its decision-making structures: Executing Agency, the Project Coordination Unit (PCU) and the Project Steering Committee.

The WECAFC Secretariat, under the overall supervision of FAO Sub-regional Coordinator for the Caribbean, will provide on behalf of FAO for the services as regional technical executing partner responsible for coordination and the overall technical execution of the project in close collaboration with national co-executing partners. This will include the following responsibilities: (i) technical implementation of regional project activities and support to the national co-executing partners in the execution of national activities; (ii) the daily management of the project; (iii) monitoring of day-to-day project progress and achievement of results; and (iv) financial management and planning of the procurement of goods, minor works and services, by FAO.

The PCU will consist of a Regional Project Coordinator (RPC) assisted by an administrative assistant on day-to-day matters and receiving support from the operations, travel and administration units at the FAO Subregional Office for the Caribbean. Technical assistance to the PCU will be provided by the regional partners, FAO Headquarters services and the WECAFC Secretariat staff.

The Project Steering Committee (PSC) will be set up as a political-technical structure for planning and consensus-building in support of project execution and coordination. The PSC will take decisions on the overall project management and will be in charge of ensuring the project strategic approach for the operational tasks. The PSC members will be a representative from WECAFC Secretariat and National Project Coordinators (NPCs) or alternate

competent officers designated by the participating governments and regional partner organization representatives, the FAO BH and LTO. The PSC will take decisions on the overall management of the project and will be responsible for maintaining the strategic approach of the project's specific operational tasks. Its functions include the following: (i) general supervision of the progress of the project and the achievement of expected results through the semiannual PPR; (ii) decision-making with regard to the organization, coordination and execution of the project; (iii) facilitate cooperation among National Co-Executing Partners, FAO, Regional Fisheries Bodies (RFBs) and other institutions and organizations participating in the project; (iv) bring to the attention of PCU other activities underway or planned to facilitate the collaboration between the project and other programmes, projects and initiatives related to climate change adaptation; (v) ensure co-financing is provided in a timely and efficient manner; (vi) review semi-annual Project Progress Reports (PPRs) and financial reports, and approve Annual Work Plan and Budgets (AWP/Bs); and (vii) provide comments on Terms of References (TORs) for the mid-term and the final evaluations and the draft evaluation reports as well as decide on and support actions to be taken to follow up on recommendations. The RPC will act as Secretary to the PSC. The PSC will normally meet once a year, although exceptional meetings (e.g. during the first year of start-up, if required) could be called. The host country for the PSC meeting will change annually (with no country repeating) and the host country for the meeting will provide a Chairperson.

For a full description of the project implementation arrangements, kindly see Section 4 of the FAO/GEF Project Document.

B.1.2 Stakeholder involvement plan

The stakeholder mapping carried out during project preparation is presented in the table below, including their roles and participation in project implementation.

Stakeholders	Interests/Roles/Responsibilities in the project
Government	
National fisheries authorities 1. Fisheries Division of the Ministry of Agriculture, Lands, Housing and the Environment, **Antigua and Barbuda** 2. Fisheries Division of the Ministry of the Environment, Natural Resources, Physical Planning & Fisheries, **Dominica** 3. Fisheries Division of the Ministry of Agriculture, Forestry and Fisheries, **Grenada** 4. Department of Marine Resources of the Ministry of Agriculture, Marine Resources, Cooperatives and Constituency Empowerment, **St Kitts And Nevis** 5. Fisheries Division of the Ministry of Agriculture, Food Production, Fisheries and Rural Development, **St Lucia** 6. Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry, **St Vincent And The Grenadines** 7. Fisheries Division of the Ministry of Food Production, **Trinidad and Tobago**	National Fisheries Authority and Operational Focal Point to GEF. Co-financier. Overall coordination between project objective, outcomes and institutional agreements, and policies and plans of the Government of the seven project countries, with regard to the marine sector. Data management, analysis, policy, planning, implementation and education. Executing partners of the project.
Departments of Emergency Management, or Office of Disaster Preparedness or Management (variation in nomenclature)	Disaster Risk Management and Climate Change Adaptation capabilities with partners and coordinating response and recovery operations in order to protect the people, environment and economy and ensure a disaster resilient fisheries sector Component 2) can assist in developing early warning systems; disaster risk protocols, drills and training Component 3) can assist in incorporating DRM into national fisheries policies

Ministries of Environment (unless already included under Ministries mentioned above)	Is the agency in charge of planning, promotion, co-ordination and overseeing the implementation of environmental policies and programmes (including integration of fisheries sector; Marine Protected Areas development and implementation). Component 3) can assist in incorporating EAF, CCA and DRM in fisheries policies and integrating climate change in environmental policies
Defence Force/Coast Guards	The Coast Guard's role is search and rescue. Component 2) Support safety-at-sea training and implementation; support and involvement in early warning systems and disaster risk training
Local government in coastal communities	Local Governments can help support Component 1) collect data for vulnerability assessments and awareness building Component 2) local training in business skills safety-at-sea; alternative livelihoods. Component 3) public outreach and awareness programs

Research institutes	
University of the West Indies -CERMES	The Centre for Resource Management and Environmental Studies (CERMES) promotes and facilitates sustainable development in the Caribbean and beyond. Regional project partner and will provide research and technical support. Component 1) -Design and implementation of vulnerability assessments at the regional, national and local level; development of a model to assess sargassum impacts on the dolphin fish and flying fish populations; communication Component 2) -Facilitating exchanges by fisherfolk to countries/communities in which EAF, CCA and DRM/co-management are implemented Component 3) - Assistance to develop a framework to integrate EAF, DRM and CCA into the policies at regional level and the national level and support of mainstreaming these topics into fisheries management; and public awareness and outreach Project partner
University of the West Indies - CIRP	The Department of Electrical and Computer Engineering, Saint Augustine, Trinidad & Tobago has developed the *mFisheries* mobile application. This is a suite of mobile applications developed for persons involved in fisheries such as fisherfolk, processors, retailers, wholesalers and consumers. *mFisheries* aims to develop capacity in the Caribbean to pursue opportunities arising from the provision of innovative mobile-enabled services for its poor communities, and to provide related empirical data and analysis to inform Caribbean policy and regulation. Will support Mfisheries development and implementation in component 2.
Caribbean Institute for Meteorology and Hydrology (CIMH)	CIMH aims to assist in improving and developing the Meteorological and Hydrological Services and creating the awareness of the benefits these services generate for the economic well-being of the CIMH member states. Component 1 and 2) The DEWETRA platform is a real-time integrated system for hydro-meteorological forecasting, monitoring and prevention. This system helps to build up-to-date and reliable risk scenarios. Their data on e.g. flooding vulnerability of coastal zones in the Caribbean region and the component in DEWETRA called 'wave watch' can support vulnerability assessments, climate modelling and support early warning system development
State/community colleges	Local research institutes: Component 1 and 3) help carry out vulnerability assessments and data analysis; support communication on vulnerability assessment for adaptation and public awareness and training programmes
International and Regional Cooperation	
Food and Agriculture Organization (FAO)	GEF Project Implementing Agency. Provision of technical assistance on fisheries planning, climate change adaptation and sustainable management of

	natural resources, rural and coastal community development, aquatic biodiversity preservation, sustainable aquaculture and fishery production. Support of methodologies according to international standards and best-practices. Support and monitoring project implementation.
Western Central Atlantic Fishery Commission (WECAFC)	Regional fishery commission established under FAO. Provision of technical and policy advice on fisheries and aquaculture as well as fisheries governance. Regional project partner. Can support in the various components of the project, but specifically in Component 3) Harmonization of fisheries policies, management and regulations in the region, and dissemination of results of the project throughout the region.
Caribbean Regional Fisheries Mechanism (CRFM)	Regional organization that promotes and facilitates responsible utilization of the region's fisheries and other aquatic resources. Regional project partner. In this project CRFM will provide technical support for Component 1) Risk assessment modelling for pelagic (and demersal) fisheries with climate change and variability Component 2) Development of underutilized and unfamiliar species Component 3) development of a protocol integration DRM and CC into CCCFP
Caribbean Network of Fisherfolk Organisations (CNFO)	CNFO aims to improve the quality of life for fisherfolk and developing a sustainable and profitable industry through networking, representation and capacity building. Project partner. Component 2) support and involvement in training and capacity building activities and exchange programs.
Caribbean Community Climate Change Centre (CCCCC)	The CCCCCC coordinates the CARICOM response to climate change. Can support with supply of data and technical expertise for all components.
Caribbean Disaster Emergency Management Agency (CDEMA)	CDEMA is the leading disaster risk management organization within CARICOM. It seeks to reduce the risk and loss associated with natural and technological hazards and the effects of climate change to enhance regional sustainable development. Can support all components with data on vulnerability of disaster risks, support development of Disaster Risk Management and Risk Reduction strategies; and support the mainstreaming of DRM into national fisheries policies
Private sector	
Fish processing companies (retailing and exporting)	They represent the national level producers (mainly small-scale and medium scale producers). They will participate in Component 2) development of underutilized and unfamiliar species; improvement of post-harvesting processing; marketing of aquaculture
Aquaculture companies	They represent the national level producers. Can support component 2) rehabilitation of existing aquaculture centres and new aquaculture centres established.
Grassroots / resource user/ civil society organizations	
Local environmental NGOs, other NGOs, CBOs	Local NGOs in relation to the fisheries sector in the seven project countries are dedicated to awareness raising processes, organization and participation for community self-management and environmental protection; and education. Support to all Project components with information exchange and implementation.
Fisherfolk organizations	Fisherfolk organisations are collectives that aim to improve the livelihoods and well-being of fisherfolk (men and women), seek to engage in decision making in fisheries management (at the national and international level); and educate fisherfolk. Fisherfolk organizations (at local, national and regional levels) will be involved in all project components with information exchange; capacity building activities and participation in fisheries planning, decision-making and management.
International and regional NGOs	
The Nature Conservancy (TNC)	Leading international NGO aimed at conserving the lands and waters globally. It manages programs of conservation of natural and cultural heritage, conservation of marine ecosystems in the Caribbean, and participation and environmental education. Project partner. Through its work on vulnerability assessments in the region and marine conservation the organization will be

	actively contributing to component 1 and component 2.
CARIBSAVE partnership	International NGO focused on sustainable development and climate change. Through its work on vulnerability assessments in the region and work on policies and practices the organization participates in all three components. Project partner.
Caribbean Natural Resources Institute (CANARI)	The organization promoting and facilitates equitable participation and effective collaboration in the management of natural resources in the Caribbean region. The organization has extensive experience in capacity building of fisherfolk organizations; and strengthening of national policies. CANARI will participate in components 2 and 3

B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF):

Social sustainability and socioeconomic benefits are central in this project. The project's main beneficiaries are 2 800 people with decreased vulnerability, including 1 120 women, who through climate change adaptation will improve their livelihoods, their resilience in the face of climate change, their food security, and will receive higher incomes per family through increased fisheries production. The 2 800 people will benefit from a myriad of technical training, improved safety-at-sea knowledge and measures, improved access to technology, and an increased awareness on climate change impacts and the vulnerability of the fisheries sector.

Indirect beneficiaries of the project will be at the household and community level because a climate resilient fisheries sector generates positive impacts on coastal communities at a larger scale. The wider public will also be indirect beneficiaries, as they will receive information on climate change vulnerability and adaptation efforts by the fisheries sector. Awareness raising and training materials will be made available to the public for free through on-line sources. In terms of influencing public policy and youth these factors can be critical for successful longer term outcomes. Project's expected adaptive benefits at a local scale are:

Short and medium term benefits:

- More sustainable fish production and higher net incomes (from deployment of FADs, responsible aquaculture development and development of business proposals to facilitate full utilization of key commercial and under-utilized species targeting new and underutilized fisheries stocks);
- Improvement of food security as a result from increased production of fish (marine capture and aquaculture). This will generate a positive impact on poverty and local food insecurity;
- Greater income for fishers as a result of improved fish handling and application of food safety measures;
- Increased adoption of risk mitigation and adaptation measures, such as fisheries insurance, health and life insurance in fisheries as well as access to social security.
- Less vulnerability of fishers livelihood and greater resilience to climate change as a result of capacity training (e.g. business skills and safety-at-sea training);
- Training local stakeholders by supporting the establishment and strengthening of associations and organizations, which will enable increased and meaningful participation in management, planning and monitoring activities in the selected pilot sites

Food security is a crucial benefit and will be promoted in components 1, 2 and 3. In component 1 the vulnerability assessments will address food insecurity through climate change. In component 2 food security of fisherfolk and coastal communities will be addressed through the development of new fisheries methods and practices adapted to climate change and possible promotion of underdeveloped fisheries; improvement of certain processing facilities and providing food safety training will result in less post-harvest losses; and the development and implementation of new fishing gears (e.g. FADs/ smart FADs). The project will also promote rehabilitation of existing aquaculture centres and new aquaculture centres, which will increase sustainable fish and food production (in the case of aquaponics) and thus promote food security. In component 3 mainstreaming EAF, CCA and DRM into fisheries management and planning-legislation and developing the related practical organisational capacity also addresses food security as the EAF strives to reconcile the conservation and the use of the resources including for food security purposes.. The EAF aims to meet the

goals of satisfying societal and human needs for food and economic benefits through management actions that focus on responsible fisheries and long-terms sustainable utilization of the fish stocks and aquatic resources in general.

This project will support gender equality and gender mainstreaming at institutional and community levels. The project will focus on promoting participation of women, empowering them to foster their participation in planning and decision making and to improve their productivity, income and living conditions. Participation will be promoted through multi-sectoral workshops, consultation and validation processes to be applied to the development of the different project activities, particularly through the vulnerability assessments carried out in component 1 and the public awareness program (Component 1); the improvement of improving processing facilities and providing improved food safety training, which results in less post-harvest losses and improved livelihoods of processing workers, which are mostly women (component 2); and the marketing of unfamiliar and underutilized fish species (component 2). Participation will also be promoted in component 3, where the activities in relation to the participatory policy development and planning processes will require the active collaboration, ownership and buy-in by women stakeholders. Developing practical organisational capacity through training of fisheries stakeholders for mainstreaming CCA and DRM into EAF management plans and co-management learning by doing will also involve women. The outreach activities via public awareness activities will also involve women both as trainers as well as recipients. At least 20 percent of the beneficiaries of component 1, 2 and 3 will be women. The data will be disaggregated by gender for monitoring differential impacts of the project, and women fishers, fish processors and retailers will be particularly involved and represented in all project activities.

B.3. Explain how cost-effectiveness is reflected in the project design:

i) Analysis conducted during full project preparation

During full project preparation diverse climate change adaptation strategies and methodologies were analyzed with a view to assess their cost/effectiveness and suitability for application in the various countries involved. The project strategy of increasing resilience and reducing vulnerability to climate change impacts in the eastern Caribbean fisheries sector, through introduction of adaptation measures in fisheries management, capacity building of fisherfolk and aquaculturists as well as implementation of EAF and mainstreaming of climate change in fisheries management was selected after considering the following strategies:

Relying solely on global fisheries models

The current modelling exercises on the impacts of climate change on the marine ecosystem are mostly global in nature. They can project the impacts of climate change on global fish production by 2050, yet the projections cannot be easily downscaled to the regional or national level. Global models of these types often overlook the vulnerability of SIDS as the data and assessment methodologies used are not downscaled to the level of SIDS. While the global models generate very interesting insights they cannot provide insights into the impacts of climate change for e.g. key species in the region and hence guide policy. As no model is available for sargassum events or their impacts on different types of fisheries (pelagics versus demersal fisheries) assessing the impacts of climate change on the marine ecosystem at the Eastern Caribbean level is not possible. Countries vulnerabilities and strategic options for adaptation are expected to differ depending on their dependence on key species, their type of fishing gear, fishing methods and other factors. To address climate change impacts on key species it is critical to also carry out these activities at the regional level. While initially the finer resolution approach at regional level may be more costly and require more efforts (because it is more detailed and specific) than a global analysis, it is cost-effective in the longer-term because it can generate targeted recommendations for the regional and national levels for improved fisheries and aquaculture policy and management in the face of climate change and variability.

Use of mFisheries app to improve safety-at-sea

Data from the International Disaster Database underscores that Caribbean SIDS are highly vulnerable to natural disasters such as storms and hurricanes. The extreme weather events, which are expected to increase in intensity create high economic losses, deaths and also impact infrastructure ranging from landing sites to post-harvest facilities and transport routes in the region. Improving communication and safety-at-sea by means of technological innovations is becoming increasingly important as there is no denying that within the last five years the world has witnessed the rapid

growth and development of new technologies. Mobile telephony in particular has gained the most ground as is evident by high penetration levels of mobile phones especially among low income earners and traditionally marginalized population clusters such as fishing communities. The mFisheries tool refers to a collection of context-appropriate productivity programs intended to be used by small-scale fisherfolk. The suite has different applications and includes, inter alia: a virtual market place; At-Sea Safety Support; Emergency Response System; Navigational Aid; and Audio-visual Training.

The At-Sea Safety and Navigation utilities comprise four components: SOS, Compass, GPS and at-sea tracking. SOS, the commonly used description for the international morse code distress signal, sends immediate pre-defined notifications in the form of email and text messages and automatically initiates a voice call to the Coast Guard of a particular country when initiated by a user. In the pilot country Trinidad and Tobago, where the tool is used the coast guard has responded swiftly to calls of distress. This application as well as the Emergency Response System app are thus expected to relief the impacts of storms and hurricanes in terms of human and economic loss. In a timely fashion fisherfolk will be able to respond in case of an approaching storm and return to shore and secure their assets. Although the start up costs of the design and development of the tool is costly as it needs to be tailored specifically the local context in each country and thus requiring a high level of local participation the use of the tool will be very cost-effective in the mid- term.

Aquaculture and marine fish production

Investment in aquaculture and improving the sustainability of marine capture fisheries is likely to increase the amount of available fish for consumption. The growing population in the project countries would require increased fish and fisheries products imports, in a time when debt to GDP ratios of many of the participating countries has reached unhealthy and unsustainable levels. If aquaculture would remain at the current low level, without the CC4FISH project, risks involved would be that the price of fish is considered too high for most private parties, while publicly financed aquaculture demonstration facilities would be under-utilized and their maintenance would be limited to damage repairs. The food import bill of the Eastern Caribbean countries would continue to increase, as over-exploitation of fisheries resources would continue, further reducing catches and aquaculture production would not be able to fill part of the increasing gap between supply and demand. The project approach proposed is deemed to be the most cost-effective to increase resilience and reduce vulnerability to climate change impacts in the eastern Caribbean fisheries sector. The proposed SCCF project will demonstrate the benefits of adaptation interventions in the fisheries and aquaculture sector, not just in terms of production and improved safety of fishers but also in terms of social, economic and ecological contexts.

ii) Selected on-the-ground adaptation investments and adaptation technologies to be promoted by the Project

a) Fishing technologies

Adaptation technologies and best-practices in capturing fisheries have been assessed during the full project preparation. The Project will invest SCCF and co-financing resources in the following technologies and techniques in order to address climate change adaptation and increase small-scale fisher and communities' resilience in the project intervention sites:

- Better design and construction of fishing vessels (to increase safety-at-sea for fishers - e.g. practices from FAO *Fisheries and Aquaculture Technical Paper 517*[3] will be applied).
- Introduction and promotion of bio-degradable panels in lobster and fish traps, as well as proper markings; these allow that lost traps (e.g. after a storm or hurricane which can be expected to increase in intensity due to climate change) will open after some weeks and do not continue to fish forever. Ghost fishing will be reduced as a result.
- Gear identification using locally appropriate simple marking methods will facilitate estimation of losses, returning found traps and more responsible behavior of fishers.
- Introduction of lower-impact and more-selective fishing gear. In terms if fishing gears and technologies, such as moored Fish Aggregating Devices (FADs) (incl. Smart FADs) and vertical long lines, these will be improved and promoted to facilitate the sustainable (in economic and ecologic terms) capture of highly migratory large

[3] See http://www.fao.org/3/a-i0625e.pdf

pelagic fish species and underexploited marine species in the region.

- Introduction of circle hooks in long-lining will reduce by-catch and allow catch-and-release of species that are endangered/threatened and of low market value, e.g. certain shark species and marlins, contributing to a more sustainable sector.
- Communication equipment for extreme weather early warning and signaling distress will be installed on small-scale fishing vessels facilitating rescue at sea.
- Design and application of the *mFisheries* apps to be used by fishers. The suite of apps has different applications and includes, inter alia: a virtual market place; At-Sea Safety Support; Emergency Response System; Navigational Aid; and Audio-visual Training. The At-Sea Safety and Navigation utilities comprise four components: SOS, Compass, GPS and at-sea tracking. SOS, the commonly used description for the international morse code distress signal, sends immediate pre-defined notifications in the form of email and text messages and automatically initiates a voice call to the Coast Guard of a particular country when initiated by a user, thus greatly improving safety-at-sea for fishers.
- Four-stroke outboard engines will be promoted over two stroke outboard engines in small-scale fisheries as these are more economical in terms of fuel use and less polluting, while their durability is now at similar levels as two stroke engines.
- Demonstrations/pilot tests with the use of solar panels on fishing vessels to secure safety-at-sea and fish quality maintenance will be organized
- Through legal and policy changes, the use of destructive gears and overcapacity in certain fisheries (e.g. queen conch and lobster) will be addressed. Some methods will be prohibited or responsible alternatives introduced to increase sustainability.
- Safe harbours and boat hauling systems in fishing ports will be re-designed and re-configured to reduce losses and damage during tropical storms and hurricanes.

The introduction of technologies will be in line with the FAO Code of Conduct for Responsible Fisheries and the Ecosystem Approach to Fisheries (EAF), ensuring that all interventions will be done in a responsible manner.

b) Aquaculture technologies

In the area of aquaculture there is an aquaculture demonstration facility on one of the islands (St Kitts and Nevis) that is built at a location that is not climate-proof. The demonstration facility is not protected from storms/waves and uses excessive amounts of fossil fuels to keep water pumps operating. If small infrastructural changes in the design of the demonstration system are made it can better withstand storms and the risk of losing fish would be significantly reduced. Dependence on pumps would be reduced as well. The infrastructural changes anticipated involve: pond design (in/outlet structures reconstruction), hatchery transfer to another building, construction of a small dyke, lining of ponds to reduce seepage, installation of solar panels to run the water pumps, water filtering equipment installation (to reduce inflow of seaweeds/sargassum etc.).

In the CC4FISH project it is anticipated that two new aquaculture demonstration centers will be built; the planning, siting, design and construction methods used will ensure that the new demonstration centers (focusing not just on aquaculture, but aquaponics instead) will be sustainable from an economic, social and environmental perspective. Specific climate change adaptation interventions foreseen for these new centers include: e.g. selection of species for production that can withstand though environmental conditions (e.g. tilapia, catfish), use of basins/tanks that require limited maintenance and last long, use pumps on solar panels, limit freshwater use/evaporation from ponds through covers/shelters.

C. DESCRIBE THE BUDGETED M &E PLAN:

Monitoring and evaluation activities will follow FAO and GEF monitoring and evaluation policies and guidelines. The table below summarizes the project Monitoring and Evaluation Plan. For further details please see the FAO-GEF Project Document, sections 4.5 and 4.6.

Type of M&E Activity	Responsible Parties	Time-frame	Budget
Inception Workshop	Regional Project Coordinator (RPC), FAO Subregional for the Caribbean (FAO SLC) (with support from the FAO Lead Technical Officer - LTO, and FAO-GEF Coordination Unit)	Within three months of project start up	USD 25,000
Project Inception Report	RPC, cleared by LTO, Budget Holder (BH), and the FAO GEF Coordination Unit	Immediately after the workshop	-
Supervision visits and rating of progress in PPRs and PIRs	RPC; FAO (FAO SLC, LTO). FAO-GEF Coordination Unit may participate in the visits if needed.	Annual or as required	FAO visits will be borne by GEF agency fees Project Coordination visits shall be borne by the project's travel budget
Project Progress Reports (PPR)	RPC, with contributions of project partners and other participating institutions	Six-monthly	-
Project Implementation Review report (PIR)	Drafted by the RPC, with the supervision of the LTO and BH. Approved and submitted to GEF by the FAO-GEF Coordination Unit	Annual	FAO staff time financed though GEF agency fees. PCU time covered by the project budget
Co-financing Reports	RPC with inputs from other co-financiers	Annual	-
Technical reports	RPC and FAO (LTO, other services)	As appropriate	-
Mid-term Evaluation	External Consultants, FAO Office for Evaluation in consultation with the project team including the FAO GEF Coordination Unit and other partners	At mid-point of project implementation	USD 40 000 for external, consultancy. FAO staff time and travel costs will be financed by GEF agency fees.
Final evaluation	External Consultants, FAO Office for Evaluation in consultation with the project team including the FAO GEF Coordination Unit and other partners	At the end of project implementation	USD 40 000 for external, consultants and associated costs. FAO staff time and travel costs will be financed by GEF agency fees.
Terminal Workshop	RPC, FAO (supported by LTO, BH, and the FAO GEF Coordination Unit)	In the last 4 months before project termination	USD 20,000
Terminal Report	RPC, FAO (BH, LTO, the FAO GEF Coordination Unit and TCS reporting Unit)	Three months before the end date of the project.	USD 5,000
Total Budget			**USD 130,000**

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):): (Please attach the Operational Focal Point endorsement letter(s) with this form. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/DD/YYYY)*
Diann Black Layne (Antigua and Barbuda)	GEF Operational Focal Point	Ministry of Foreign Affairs	05/14/2015
Lloyd Pascal (Dominica)	GEF Operational Focal Point	Ministry of Environment, Natural Resources, Physical Planning And Fisheries	05/06/2015
Timothy N.J. Anthoine (Grenada)	GEF Operational Focal Point and Permanent Secretary	Ministry of Finance, Planning, Economy and Energy	05/22/2015
Lavern Queeley (St Kitts and Nevis)	GEF Operational Focal Point	Ministry of Sustainable Development	29/5/2015
Caroline Eugene (St Lucia)	GEF Operational Focal Point	Ministry of Sustainable Development, Energy, Science and Technology	05/26/2015
Janeel Miller-Findlay (St Vincent and the Grenadines)	GEF Operational Focal Point	Ministry of Health, Wellness and the Environment	05/06/2015
Gayatri Badri Maharaj (Trinidad and Tobago)	GEF Operational Focal Point	Environmental Management Authority	05/18/2015

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
for Gustavo Merino Director, Investment Centre Division Technical Cooperation Department FAO Viale delle Terme di Caracalla 00153, Rome, Italy	Sameer Karki	29 December 2015	Raymon Van Anrooy		Raymon.vananrooy@fao.org
Jeffrey Griffin Senior Coordinator, FAO GEF Coordination Unit. Investment Centre Division. FAO				+3906 57055680	GEF-Coordination-Unit@fao.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

The Project Results Framework can be found in the Appendix 1 of the FAO/GEF Project Document.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Responses to STAP comments

Number	STAP Comments	Responses
1	The current text states the SCCF funding will contribute to various components, without specifying how. STAP strongly encourages describing the relationships between the proposed SCCF project and the baseline projects, clarifying what outputs will be accomplished with the different funding streams, and the management arrangements (including roles and responsibilities) to ensure strong coordination among the various partners.	1. The additional reasoning has been further elaborated during full project preparation. Kindly see Section 1 of the FAO GEF Project Document (Prodoc). The baseline projects are covered under sub-section 1.1.1a of the Prodoc. The different outputs and the different funding streams are addressed in sub-section 1.1.1.c of the Prodoc. Baseline analysis shows that there has been little progress to date in implementing climate change adaptation practices at the national and local level to date. There is a high level of recognition of current and likely future impacts of climate change on the fisheries sector but this has not yet led to practical actions on the ground at a large scale. Project implementation arrangements are detailed in Section 4 of the Prodoc.
2	Page 28 mentions that Dominica, Grenada, Saint Lucia and Saint Vincent, and the Grenadines were selected to participate in the Pilot Program for Climate Resilience (PPCR) of the Climate Investment Fund. It would be helpful to understand the relationship between the proposed project and the activities that will be undertaken in the PPCR.	2. The baseline projects (including the PPCR) are discussed in section 1.1.1a. The PPCR is not aimed specifically at fisheries and the fisheries sector is only one of their target areas. There are overlaps with the CC4FISH projects, however, possible within component 2 and component 3 as both aim to engage fisherfolk organizations with policy processes and decision-makers to facilitate the implementation of key regional fisheries policies. Both project will be complementary and will coordinate actions to find synergies and share lessons learned for the four overlapping project countries. For the CC4FISH project involving fisherfolk organizations is only one of the many elements and activities in component 2 and 3 as it will also e.g. enable exchange programs to learn on successful adaptation and implementation of EAF.
3	STAP encourages including information and data on the evidence of impacts of hurricanes on fishers and on stocks. In addition, it would be helpful to provide: a. information and data to support the statements on page 11 about changing rainfall patterns and flooding; b. a description of and results from the assessment study mentioned on page 12; c. a description of the information generally collected in damage assessments conducted after every major disaster (page 14); and d. information on the numbers of accidents and fatalities.	3a. Under sub-section 1.1.a of the Prodoc, information on changing rainfall has been detailed. Information on natural disasters (including flooding) is presented in sub-section 1.1.b. (see Vulnerability #2). 3b. The assessment study examined the barriers to adaptation that are being faced by fisheries sector to cope with climate change effects. The list of barriers that this project will address is carefully detailed under sub-section 1.1.1.b of the Prodoc. 3c. Under sub-section 1.1.b of the Prodoc (see Vulnerability #2) the information available on hurricane damage (in general) and to the fisheries sector (where available) is presented. Kindly note that Centre for Resource Management and Environmental Studies (CERMES) of the University of West Indies (UWI) sustains that there is no uniform method available for collecting data on hurricane impacts on the fisheries sector. This is one of the knowledge barriers the Project will help address through Components 1 and 3. 3d. The information is presented under sub-section 1.1.b (vulnerability #2) of the Prodoc.
4	It would be helpful to have a more complete picture of the current situation for aquaculture, comparable to the	4. Aquaculture is discussed for each country under sub-section 1.1.b (vulnerability #6) of the Prodoc. The sustainability of aquaculture developments within the project is covered

	other paragraphs on livelihoods. In addition, STAP encourages FAO to provide additional information on how the project would ensure that any aquaculture implemented would be sustainable.	under sub-section 2.7 of the Prodoc. It focuses on responsive support to initiatives in which the private sector in several countries has already invested.
5	The proposed project states it will use an ecosystem approach to fisheries. It would be helpful to have a description of the key aspects of this approach that will be implemented.	5. A brief explanation of the Ecosystem Approach to Fisheries (EAF) is explained in sub-section 2.1 of the Prodoc. The activities in relation to the implementation of EAF in practice and fisheries policies and plans are discussed under sub-section 2.4 of the Prodoc (see the description of Component 3).
6	STAP appreciates the efforts to leverage ICT for supporting fishermen and fisheries. The availability of smartphones and the ability of the platform to support fishermen's information needs may be further elaborated during the course of project development.	6. The role of ICT within this project (mainly via the *mFisheries* initiative) and the ability of their apps to support, *inter alia*, improved safety-at-sea and information needs of fisher folk is discussed in sub-section 2.4 (see in particular outcome 2.1) as well as in sub-section 2.6 of the Prodoc. A key point is that the Caribbean Network of Fisherfolk Organisations is keenly supportive of expanding ICT applications and has encouraged the involvement of resource users in all participating countries.
7	The adaptive alternative to component 1 states that climate models will be used to improve projections of biophysical parameters, but does not provide information on which models, which emission and socioeconomic scenarios, time slices, etc. Such information would be helpful.	7. The objective of the models is to describe and project fisheries abundance and accessibility in the face of climate change. This is discussed, including the types of models used and the fish species under examination, under sub-section 2.4 (see in particular output 1.1.2) and in sub-section 2.6 of the Prodoc. Technical specifications and model downscaling are dynamic considerations under constant review by the UWI climate studies group, include socio-economic impact scenario's and are subject to change.
8	Component 1 also mentions the SCCF project will expand on MARSIS. STAP encourages FAO to include in the full proposal how that will be done.	8. The project will not further expand on MarSIS as at the national stakeholder consultations no need for this activity was identified. Geospatial information is generally becoming more readily available.
9	In component 2, STAP encourages FAO to provide further detail linkages between the proposed project and NOAA and CDEMA. In addition, the text on mFisheries is not quite clear; will the project build on this application and, if so, how? How will locale-specific information be determined? Further, STAP recommends including consideration of how use of communication technologies could affect stocks, and proposed solutions for when negative impacts could arise.	9. The use of new ICT tools by fisherfolk will be promoted and enable them to have access to real-time data and information from reliable meteorological agencies (e.g. CIMH, NOAA) and response agencies such as CDEMA. The role of CDEMA is further discussed under sub-sections 1.1.c and 1.1.3 of the Prodoc (see Table 7 and 8 for a detailed description of stakeholders). Concerning *mFisheries,* see response to point 6. Local-specific information will be determined by means of workshops with fisher folk, fisherfolk organisations and the CNFO. Pilot projects in this regard including the workshops have already been carried out in Tobago where the app is currently being tested. The concerns on the use of communication technologies (e.g. smart FADs) and their potential impacts on stocks are addressed under sub-section 2.4 of the Prodoc (see output 2.1.1).
10	In component 3, STAP encourages FAO to provide further information on: a. Whether the participants in the fisher	10 a The participants in meetings/ workshops and trainings will be representative of all fisher folk. Fisher folk include market traders and processing workers and therefore include women. Meetings/trainings/workshops will have different topics and objectives (e.g. vulnerability awareness raising) and thus also address coastal community members,

	meetings/workshops are representative of all fisherfolk, including women; b. The effectiveness of an ecosystem approach to fisheries, and where, when, and how it will be implemented; c. How the project will assist in developing innovative approaches, with a description of each; and d. Who will decide what practices will be designated "best practices" and the criteria for making that determination.	representatives from civil society organisations and government agencies. These will therefore also include women. See also the response to STAP's comment #16 for further information on gender mainstreaming in the CC4FISH project. 10 b see response to STAP's comment #5. 10 c Kindly see the description detailed in sub-section 2.7 of the Prodoc. 10.d 'Best practices' in this project are based on: 1) applying successful practices and climate change adaptation activities already carried out in the region or in other parts of the world; and research (and consequent publications on 'best practices') that have been carried out on 'best practices'. An example is the current implementation of biodegradable lobster panels in the region which improves the sustainability of the resource and is based on profound research as well as pilot studies.
11	In component 4, STAP encourages FAO to provide further information on: a. How the project will address that investments by the Fisheries Divisions and line Ministries neglect the potential impacts of climate variability and change; b. Who will decide what practices will be designated "best practices" and the criteria for making that determination; and c. How the project partners will ensure the dissemination of best practice adaptive technologies and management measures.	11 a The CC4FISH project will address the neglect of Fisheries Divisions and Ministries to the potential impacts of climate change and variability by supporting a variety of activities. The project will support streamlining of climate change in fisheries policies and plans; and support the implementation of EAF (including co-management to enable fisherfolk to assume a greater role in the management of the resource) 11b Kindly see response to STAP's comment #10d above. 11c The dissemination of best practice adaptive technologies are carried out in myriad ways: a) by facilitating exchange programs (see output 1.1.3 and outcome 2.2 in Appendix 1 of the Prodoc) by fisherfolk to countries/communities in which EAF, CCA and DRM/co-management in small-scale fisheries are succeeding and alternative livelihoods are carried out; b) by building on to the *mFisheries* pilot projects currently carried out; c) by building on to the successful Fish Aggregation Devices (FAD) experiences (e.g in Dominica) and carrying out exchange programs on the development and deployment of FADs; and d) by carrying out training and exchange programs for development of aquaculture (e.g. by using the training facilities on aquaponics in Antigua and Barbuda and building on to their experience).
12	In component 5, STAP encourages FAO to provide information on the number of facilities that will receive small-scale support.	12. At this stage in the project it is not possible to describe this level of detail and are scheduled to be further worked out during the inception workshop. However, financing of this project will support development of new, or rehabilitate existing aquaculture centers, in six out of the seven project countries.
13	STAP encourages FAO to provide further details on how the extra-budgetary support sought will be sustained after the project.	13. The financial and economic sustainability of the project is discussed under sub-section 5.3 of the Prodoc.
14	On page 22, the text is presumably providing a series of indicators for monitoring and evaluating the outputs and outcomes. It would be helpful if these would be taken up in the descriptions of the appropriate components; e.g. a description of how the 2000 most vulnerable small-scale fisherfolk will be identified,	14. The SCCF tracking tools indicators have been mainstreamed into the Project Results Framework to clearly establish baselines, milestones, and targets, per outcome and output. Kindly see Appendix 1 of the Prodoc, which also identifies means of verification, timeline and roles and responsibilities of monitoring project indicators. Regarding in particular the identification of the specific target groups, kindly note that groups will differ per activity and country. Targeted groups/population will be identified

	trained, and tested. A similar comment for the 200 staff mentioned three bullets down.	during Inception in Project Year 1.
15	STAP strongly encourages strengthening the proposal in terms of adaptive risk management. It is often unclear whether outcomes and outputs are focused solely on reducing current vulnerability or are also intent on increasing the capacity for adaptive management as the climate continues to change. Further, it would be helpful to have a better understanding of the mainstreaming aspects of the project.	15. Kindly see sub-section 2.4 of the Prodoc, in which outcomes and outputs are discussed in detail, including adaptive risk management. Reducing vulnerability and increasing capacity can often go hand in hand. The current description of activities within the three components highlight how the vulnerability will be reduced while adaptation management will be improved in the fisheries sector. Mainstreaming of climate change in fisheries policies and plans is a key element of the Project and is further detailed under sub-section 2.4 of the Prodoc.
16	STAP welcomes the mention of the importance of gender, and looks forward to seeing this aspect further developed in the full proposal. It would be helpful to include criteria for ensuring women, youth, and other vulnerable groups are included in project activities.	16. Gender mainstreaming has been carefully considered during full project preparation. Kindly note that the EAF is based on 3 pillars: i) biophysical; ii) socio-economic' and iii) governance. Pillars ii) and iii) are gender-sensitive. The EAF is at the basis of this project adaptation proposal. Kindly see more details in the description of Component 1, 2 and 3 (sub-section 2.3 and 2.4 of the Prodoc), the Adaptation benefits sub-section 2.5 and the social sustainability sub-section 5.1 of the Prodoc.. The inclusion of youth is also discussed in sub-section 2.5 of the Prodoc.
17	Other issues include: a. A list of acronyms would be helpful. b. References for statements of fact would be helpful. FAO is encouraged to include relevant information on weather and climate trends and projections from the IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (2012), instead of the IPCC 4th Assessment Report. c. For components 2 and 3, some of the text in the baseline scenario appears more relevant to the adaptation alternative, such as using mobile phones as part of an early warning response plan. d. On page 20, presumably FAO intended to say that fisheries management projects would not be silo type.	17 a. Kindly see the List of Acronyms on page 8 of the Prodoc. b. It is our view that the project document is now adequately referenced. All references are listed in footnotes in the text. Reference to the SREX 2012 report is made under sub-section 1.1b. of the Prodoc as well as various references to chapters of the most recent IPCC 5th Assessment report (AR5). c. These suggestions are taken into consideration and followed up in Component 2. d. The statement was referring to the baseline scenario if the project would not take place. So yes, the CC4FISH project would support fisheries management not to be 'silo' type.

Responses to GEFSEC comments

No pending comments to GEFSEC

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[4]

A. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

NOT APPLICABLE

B. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

Table C.1

	Project Preparation Grant approved at PIF: US$ 150,000				
Oracle code	**Description**	**Name of Consultant**	**Budgeted amount**	**Amount spend**	**Variance**
5011	**Salaries Professional***		**8,491**	**8,491**	**0**
	Financial and operations officer				
5543	**Local consultants**				
	Expert 1: Antigua And Barbuda		5,000	0	
	Expert 2: Dominica	Marie Jose Edwards	5,000	5,214	
	Expert 3: Grenada	James Finlay	5,000	5,214	
	Expert 4: St Kitts and Nevis	Patrick Williams	5,000	5,214	
	Expert 5: St Lucia	Marie-Louise Felix	5,000	5,214	
	Expert 6: St Vincent and The Grenadines	Reynold Murray	5,000	5,214	
	Expert 7: Trinidad and Tobago	Terrence Phillips	5,000	5,214	
	Expert 8: Liaison Assistant	Bertha Simmons	5,000	7,516	
5570	**Total consultants**		**40,000**	**38,800**	**1,200**
5650	**Contracts**		**35,000**	**43,000**	**(8,000)**

[4] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

	CERMES/UWI				
5684	**Travel**		**31,500**	**30,508**	**992**
	National and international travel				
5905	**Workshops**		**35,009**	**24,785**	**10,224**
	Seven national consultations		7,560		
	Two regional workshops		27,449		
5024	**Expendable Equipment**		0	**1,529**	**(1,529)**
5028/ 5040	**General Operating Expenses**		0	**300**	**(300)**
	Total PPG Budget		**150,000**	**147,413**	**2,587**

DETAILED EXPENDITURE OF PPG RESOURCES

The PPG resources have been used to collect baseline information at national and regional level, carry out a stakeholder analysis, a capacity needs assessment for fisherfolk and their organizations in relation to fisheries adaptation to climate change, and an analysis of the regional governance systems and institutional arrangements related to climate change adaptation in the fisheries sector.

Fisheries and aquaculture experts were contracted in each of the 7 project beneficiary countries to assist the national level counterparts in collecting and putting together their national design reports. The University of the West Indies (UWI) was contracted to assist with the above assessments and analyses and the participatory formulation of the project document.

Two participatory workshops were conducted with the key stakeholders to prepare the full Project Document. The inception workshop of the Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (CC4FISH) -project preparation phase- was held in Bridgetown on 25-27 November 2014, while the Results Framework workshop of the CC4FISH took place in Bridgetown on 17-19 March 2015. Both events were hosted by the FAO Subregional Office for the Caribbean and were attended by respectively 28 and 21 national level experts, national focal points, and stakeholders from partner institutions, projects and FAO.

The PPG phase funds have been used as detailed in Table C.2. The Table C.2 follows the budget lines that are quantified in Table C.1 above.

Table C.2

Budget item	Description of use of funds

Travel	National consultants/experts and national focal points of the project beneficiary countries to Barbados to participate in the 2 project preparation workshops
Consultants	In each of the 7 project countries one national consultant was contracted (for 25 working days each) to assist the counterparts in collecting baseline information, preparing baseline/national design reports, organizing national-level stakeholder meetings and consultations, and assisting the partners in preparing the co-financing letters. Moreover one regional consultant was contracted to support liaison between the countries, ensure timely delivery of outputs and necessary formal letters between FAO and the countries and partners, and assists with logistical and operational aspects of the various workshops.
Contracts	A Letter of Agreement (LOA) was signed with UWI, which carried out the stakeholder analysis, capacity needs assessment, analyzed governance systems, supported the organization of regional and national level workshops/stakeholder consultations, Document, assisted Antigua and Barbuda with their national design report and prepared the workshop reports. In addition, UWI consolidated the full Project Document, the CEO ER, and filled-in the Tracking Tools under FAO's technical supervision.
Training	Two regional workshops were held in November 2014 and March 2015 in Barbados. In the period January–March 2015, seven national stakeholder consultations were held - one in each of the participating countries.
GOE	General operating expenses for workshops.
Budget Officer	Administrative support and guidance was provided in the budget preparation and operational, monitoring and reporting design of the full project document

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

Not Applicable

FAO / GEF PROJECT DOCUMENT

PROJECT TITLE: CLIMATE CHANGE ADAPTATION IN THE EASTERN CARIBBEAN FISHERIES SECTOR PROJECT (CC4FISH)
SYMBOL: GCP/SLC/202/SCF-

Recipient Countries: Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Trinidad and Tobago.

Resource Partner: Global Environment Facility/ Special Climate Change Fund

FAO project ID: 621550 **GEF/LDCF/SCCF Project ID: 5667**

Main Executing Partner(s):

1. Fisheries Division of the Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs , **Antigua and Barbuda**
2. Fisheries Division of the Ministry of Agriculture and Fisheries, **Dominica**
3. Fisheries Division of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment, **Grenada**
4. Department of Marine Resources of the Ministry of Agriculture, Marine Resources and Cooperatives, **St Kitts And Nevis**
5. Department of Fisheries of the Ministry of Agriculture, Food Production, Fisheries, Co-operation and Rural Development, **Saint Lucia**
6. Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry, **St Vincent And The Grenadines**
7. Fisheries Division of Ministry of Land and Marine Resources, **Trinidad and Tobago**

Other executing partners:

- Western Central Atlantic Fishery Commission (**WECAFC**)
- Caribbean Regional Fisheries Mechanism (**CRFM**)
- Caribbean Network of Fisherfolk Organizations (**CNFO**)
- University of the West Indies (**UWI**)
- **CARIBSAVE partnership**
- The Nature Conservancy (**TNC)**

Expected EOD (starting date): September 2015

Expected NTE (End date): August 2019

Contribution to FAO's Strategic Framework	a. **Strategic objective/Organizational Result:** Component 2 will contribute to SO1 (help eliminate hunger, food insecurity and malnutrition). Component 1, 2 and 3 will contribute to SO2 (sustainable provision of goods and services from agriculture, forestry and fisheries); SO4 (inclusive and efficient agricultural and food systems) and SO5 (increase the resilience of livelihoods to threats and crises) b. **Regional Result/Priority Area:** Climate change and environmental sustainability

GEF Focal Area: Special Climate Change Fund (SCCF) – Climate Change Adaptation (CCA)

SCCF Strategic Objectives: CCA 1, CCA-2, and CCA-3

Environmental Impact Assessment Category : A B ✓ C	
Financing Plan: GEF/SCCF allocation:	USD 5 460 000
Co-financing:	
Government of Antigua and Barbuda	USD 3 250 000
Government of Dominica	USD 1 250 000
Government of Grenada	USD 1 500 000
Government of St. Kitts and Nevis	USD 1 250 000
Government of Saint Lucia	USD 5 480 000
Government of St. Vincent and the Grenadines	USD 1 500 000
Government of Trinidad and Tobago	USD 19 500 000
WECAFC	USD 2 000 000
CRFM	USD 400 000
TNC	USD 200 000
CARIBSAVE Partnership	USD 1 000 000
University of the West-Indies	USD 212 000
Subtotal Co-financing:	USD 37 542 000
Total Budget:	**USD 43 002 000**

EXECUTIVE SUMMARY

The seven countries participating in the *Climate Change Adaptation in the Eastern Caribbean Fisheries Sector* (CC4FISH) project in the Eastern Caribbean – Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago – are highly dependent on the fisheries sector for food security, livelihoods and household income. The sector is expected to be severely impacted by climate change and variability through slow-onset changes as well as extreme weather events. Many of the root causes for climate change and climate variability originate outside of the Caribbean region, yet the consequences are expected to be severe for the region and for the fisheries sector in particular. Coastal communities and fisherfolk (men and women involved in all aspects of the sector) are considered to be particularly vulnerable to the impacts of climate change.

In addition to the threats of climate change, the fisheries sector is already suffering from other pressures such as: overfishing, loss of habitat, pollution, disturbance of coral reefs, and invasive species, with climate change further exacerbating these problems. While the project cannot alter the projections for climate change in the region, it can address the barriers to adaptation in order to increase resilience and reduce vulnerability to climate change impacts.

The barriers this project will address:

Barrier 1: Insufficient understanding and awareness of climate change vulnerability of the fisheries sector at the regional, national and local level

Barrier 2: Limited fisherfolk, aquaculturists and coastal community resilience to climate change and variability

Barrier 3: Ineffective mainstreaming of climate change adaptation in fisheries at multi-level fisheries governance

Addressing these barriers will benefit the people who depend on the Eastern Caribbean fisheries sector at individual, household, community, national and regional levels.

The **Project's Objective** is:

To increase resilience and reduce vulnerability to climate change impacts in the Eastern Caribbean fisheries sector, through introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists.

The project will facilitate regional collaboration by seeking institutional, technological and developmental solutions that are appropriate at the local level, and which will contribute at the same time to the creation of Adaptation Benefits in the region. The involvement in the project of diverse actors from the fishing and aquaculture industries, and other stakeholders from the public sector, private sector, civil society, academia and Regional Fishery Bodies (RFBs) is key to its successful implementation. Fisherfolk, aquaculturists and coastal communities are key stakeholders and at the heart of this project at the local level where the project will promote adequate adaptation measures in the face of climate change. The project will promote regional collaboration through existing RFBs such as the Western Central Atlantic Fishery Commission (WECAFC) and the Caribbean Regional Fisheries Mechanism (CRFM) to strengthen these institutional arrangements.

The project will be implemented through the following components:

Component 1: Understanding and awareness of climate change impacts and vulnerability

- Assessment on climate change vulnerability in the fisheries sector carried out regional, national and local level;
- Models that describe fish abundance and accessibility developed;
- Findings of vulnerability assessments and models disseminated at regional, national and local level to improve understanding of climate change impacts.

Component 2: Increasing fisherfolk, aquaculturists and coastal community resilience to climate change and variability

- Strengthened ICT capacity of fisherfolk and CNFOs;
- Strengthened fisherfolk and CNFO capacity (in business skills, insurance schemes, coping with loss, rapid response and boat hauling) and associated equipment delivered;
- Strengthened capacity for full utilization of key commercial and under-utilized species;
- Exchange programs on fisheries co-management and adaptation technology implemented;
- Existing aquaculture centres rehabilitated and new aquaculture centres established;
- Strengthened capacity of aquaculturists in climate change adaptation measures and adaptive technologies.

Component 3: Mainstreaming of climate change adaptation in multi-level fisheries governance

- Strengthened regional and national institutional capacity on mechanisms to implement climate change adaptation measures
- Climate change adaptation mainstreamed into policies, plans and associated processes

Component 4: Project management, monitoring and evaluation, information dissemination and communication

- Project implemented, lessons learned and best practices documented and disseminated

Not all project countries will implement exactly the same activities, as some outputs are more relevant to some countries than to others. Food and Agriculture Organization (FAO) is the Global Environment Facility (GEF) agency responsible for supervision, provision of technical guidance and financial execution and operation of the project. The project's executing partners are WECAFC and the national fisheries authorities. The project will be implemented in close collaboration with the CRFM and other partners such as the University of the West Indies (UWI), The Nature Conservancy (TNC), Caribbean Natural Resources Institute (CANARI), Caribbean Network of Fisherfolk Organisations (CNFO) and CARIBSAVE. The project will also collaborate with other relevant GEF-financed regional initiatives such as the CLME+ project and REBYC-II LAC and the Caribbean Regional Track of the Pilot Program for Climate Resilience (PPCR). Fisherfolk, aquaculturists and coastal communities are the direct beneficiaries of the project through its goals and achievements.

The Project Coordination Unit (PCU) will be hosted by the Secretariat of the WECAFC located in FAO Subregional Office for the Caribbean (FAO-SLC). The project has a duration of four years and a total budget of USD 43 002 000 consisting of USD 5 460 000 of GEF/SCCF funding and USD 37 542 000 of co-financing.

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LIST OF ACRONYMS

AIMS	Atlantic, Indian, Mediterranean and South China Sea
AMAT	Adaptation Monitoring and Assessment Tool (SCCF)
AWP/B	Annual Work Plan and Budget
BH	Budget Holder
CARICOM	Caribbean Community and Common Market
CATS	Caribbean Aqua–Terrestrial Solutions
CEO	Chief Executing Officer (GEF)
CERMES	Centre for Resource Management and Environmental Studies
CC4FISH	Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project
CCA	Climate Change Adaptation
CCCCC – 5Cs	Caribbean Community Climate Change Centre
CCCFP	Caribbean Community Common Fisheries Policy
CCRF	Code of Conduct for Responsible Fisheries
CDM	Comprehensive Disaster Management
CDEMA	Caribbean Disaster Emergency Management Agency
CIMH	Caribbean Institute for Meteorology and Hydrology
CLME	The Caribbean Large Marine Ecosystem (GEF project)
CNFO	Caribbean Network of Fisherfolk Organisations
COFI	Committee on Fisheries
COTED	Council for Trade and Economic Development
CRFM	Caribbean Regional Fisheries Mechanism
CSO	Civil Society Organizations
GDP	Gross Domestic Product
DRM	Disaster Risk Management
EAF	Ecosystem Approach to Fisheries
FAO	Food and Agriculture Organization of the United Nations
FAO-SLC	FAO Subregional Office for the Caribbean
FD	Fisheries Division
FFO	Fisher Folk Organisation
FNC	First National Communication (UNFCCC)
FPMIS	Field Project Management Information System
GEBs	Global Environmental Benefits
GEF	Global Environment Facility
IP	Implementation Plan
IPCC	Intergovernmental Panel on Climate Change
IUU	Illegal, Unreported and Unregulated
JICA	Japanese International Cooperation Agency
LME	Large Marine Ecosystem
LTO	Lead Technical Officer
LTU	Lead Technical Unit
LoA	Letter of Agreement
MMA	Marine Management Areas
M&E	Monitoring and Evaluation
NEER	North Equatorial Recirculation Region
NEMO	National Emergency Management Organisation
NGO	Non-Governmental Organizations
NPC	National Project Coordinator
NPSC	National Project Steering Committee
PCU	Project Coordination Unit
PIF	Project Identification Form (GEF)

PIR	Project Implementation Review
PPCR	Pilot Program for Climate Resilience
PPG	Project Preparation Grant (GEF)
PPR	Project Progress Report
PRODOC	Project Document
PSC	Project Steering Committee
PY	Project Year
RFB	Regional Fisheries Bodies
REBYC II LAC	Sustainable management of bycatch in Latin America and Caribbean trawl fisheries (GEF project)
RPC	Regional Project Coordinator
SIDS	Small Island Developing States
SNC	Second National Communication
SSF Guidelines	Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication
OECS	Organisation of Eastern Caribbean States
TAC	Technical Advisory Committee
TCI	Investment Centre Division (FAO)
TNC	The Nature Conservancy
TOR	Terms of Reference
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VA	Vulnerability Assessment
WECAFC	Western Central Atlantic Fishery Commission
WRI	World Resource Institute

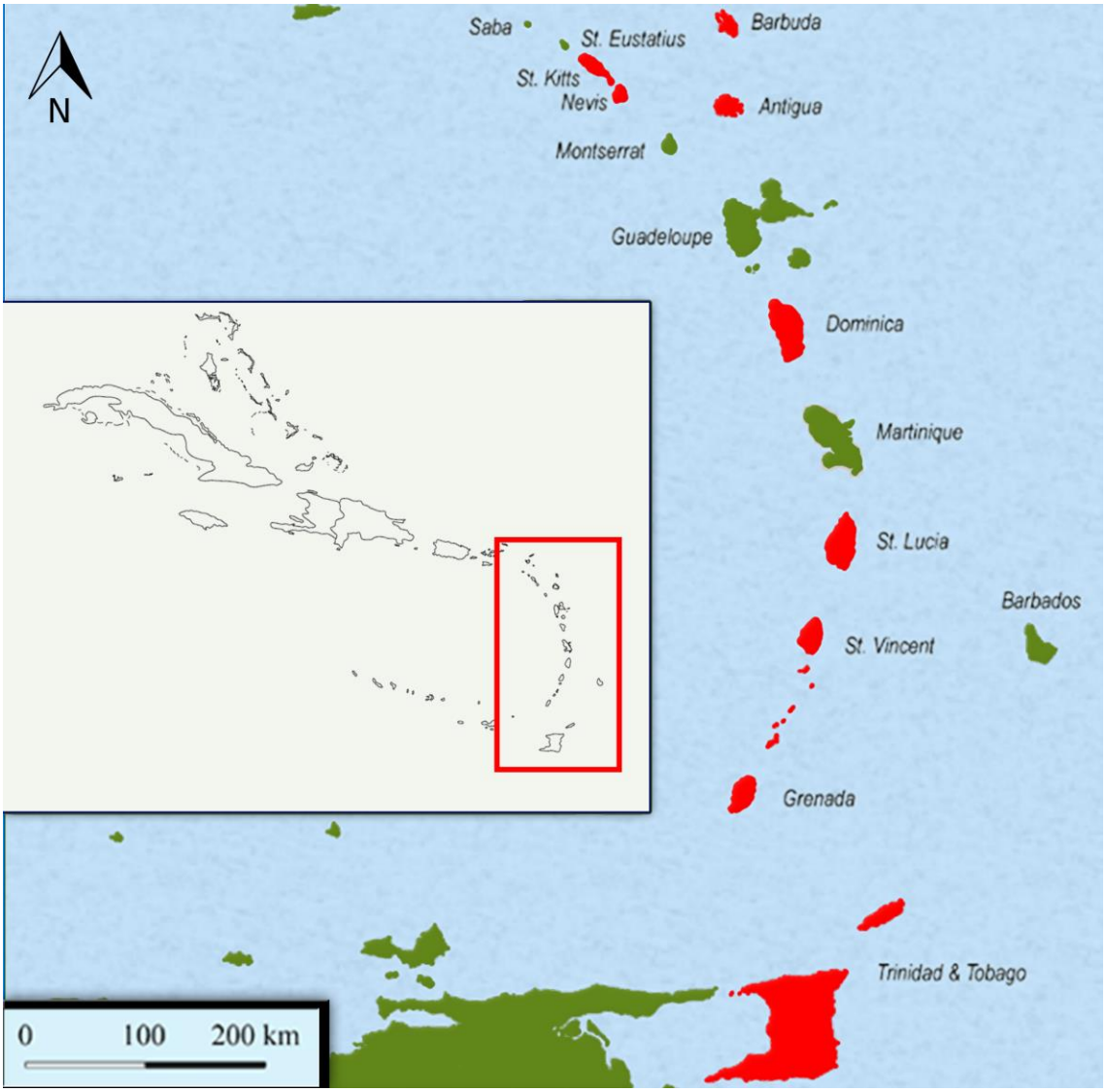
SECTION 1 – RELEVANCE

1.1 GENERAL CONTEXT

a) General context development

The seven countries participating in the *Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (CC4FISH) project* – Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago – are small island developing states (SIDS) in the Eastern Caribbean (Figure 1).

Figure 1: Location of the seven Eastern Caribbean project countries *(coloured red)*



Climate change is one of the most serious threats facing all Caribbean countries. Projections for the Caribbean region by the Caribbean Community Climate Change Centre (CCCCC) and the recent AR5 report of the Intergovernmental Panel on Climate

Change (IPCC) in 2014[1] underscore the urgent need for more attention to adaptation measures. Projections are that:

1. Sea levels are likely to continue to rise on average during the century around the small islands of the Caribbean Sea. However, projections are not precise as there are few long-term sea level records available for islands such as the Caribbean SIDS. Also, detecting variability caused by climate change, rather than temporary conditions such as storm waves and surges, deep ocean swell and tidal cycles, is very difficult.
2. All Caribbean islands are very likely to warm during this century. Downscaled projections for the Caribbean regions indicate an increase in temperature of 1–4 °C.[2]
3. The warming is likely to be somewhat smaller than the global annual mean warming in all seasons.
4. Rainfall will increase during the latter part of the wet season in the northern Caribbean but with drier conditions in the southern Caribbean, and with drying in the traditional wet season. Lengthening of seasonal dry periods and increasing frequency of drought are expected to increase demand for water across the region.
5. It is likely that intense tropical cyclone activity will increase (but tracks and the global distribution are uncertain).
6. Short-term variability in rainfall patterns (e.g. as caused by El Niño Southern Oscillation events) will likely continue. The prevailing warmer conditions may make the convection associated with the short-lived events more intense. In general, climate change will produce a warmer, dryer (in the mean) region with more intense hurricanes, and possibly more variability.

There is increasing concern over the direct and indirect impacts of climate change and climate variability on marine capture fisheries.[3] Climate change impacts such as sea surface temperature increases, ocean acidification, increased intensity of storms, and sea level rise are expected to trigger a series of biophysical and socio-economic impacts on national and regionally shared fisheries.[4]

Of the 51 SIDS worldwide, 23 are located in the Caribbean region. Caribbean SIDS are highly vulnerable to climate change as they are low-lying, small, economically vulnerable, and located where most unfamiliar weather patterns may be due to climate

[1] *What is in it for Small Island Developing States*? IPCC AR 5 2014

[2] These projections are made under the emissions scenarios used in the previous IPCC *Fourth Assessment Report* (SRES A2 and B2, which are respectively relatively high- and low- emissions scenarios)

[3] Brander, K. (2010). Impacts of climate change on fisheries. *Journal of Marine Systems*, *79*(3-4), 389–402; Cheung et al. (2010). Large-scale redistribution of maximum fisheries catch potential in the global ocean under climate change. *Global Change Biology*, *16*(1), 24–35.

[4] Allison, E., Perry, A., Badjeck, M.-C., N Adger, Brown, K., Conway, D., Dulvy, N. (2009). Vulnerability of national economies to the impacts of climate change on fisheries. *Fish and Fisheries*, *10*(2), 173–196; Mahon, R. (2002). Adaptation of Fisheries and Fishing Communities to the Impacts of Climate Change in the CARICOM Region Issues paper

change.[5] Significant impacts from climate variability and change are expected to be experienced in the coastal and marine environments of the Caribbean region over the next several decades. As fisheries are integrated social-ecological systems, climate change will impact human society, marine resource ecology and the links between them. Research has shown the fisheries sector of Caribbean SIDS to be highly vulnerable in comparison to the other two SIDS groups (Pacific and AIMS).[6] Within Caribbean SIDS, the Lesser Antilles (to which the seven project countries belong) are amongst the most vulnerable SIDS.[7]

Fisheries in the Eastern Caribbean provide important ecosystem services:

- Animal protein for the people of the islands, as particularly many coastal communities consume fish as their main source of protein;
- Food security in general, reducing the needs for imports of food by countries that already import between 70 and 80% of the food consumed;
- Livelihoods as the fishing industry and fisheries products trade generate direct and indirect employment;
- Aquatic habitat conservation as more and more fishers are involved in reef protection programmes, Marine Protected Areas (MPA) management and the general stewardship of the aquatic resources;
- Culture and aesthetics as featured domestically and in tourism marketing; and as
- Sources of income to governments through license fees, taxes, and foreign exchange earnings from exports.

Fisheries in the Eastern Caribbean are mostly small-scale, with only Trinidad and Tobago having an industrial fleet operating from the country. However, some other countries also have flagged industrial fishing and transhipment vessels that are operating in the high seas of the Atlantic and other oceans. The fisheries sector in the seven countries supports the socio-economic viability of coastal communities by providing direct employment and benefits to over 15,000 fishers and their dependents.[8] The sector also provides employment in seafood processing (especially for women) and ancillary services (e.g. boat building and repair). The contribution of the fisheries sector to Gross Domestic Product (GDP) in the seven countries is relatively minor according to official statistics. It should be noted, however, that GDP is calculated from the ex-vessel value of fish landed, and this underestimates the economic value of fisheries in the Caribbean.[9] One study showed that as fish moved through the various market pathways

[5] Guillotreau, P., Campling, L., & Robinson, J. (2012). Vulnerability of small island fishery economies to climate and institutional changes. *Current Opinion in Environmental Sustainability*, *4*(3), 287–291; Nurse, L., McLean, R., Agard, J., Briguglio, L., Duvat, V., Pelesikoti, N., & Tompkins, E. (2014). Small islands. In IPCC (Ed.), *Impacts, adapation and vulnerability* (pp. 1–60)

[6] Monnereau, I., R. Mahon, P. McConney, L. Nurse, R. Turner and H. Vallès. 2015. Vulnerability of the fisheries sector to climate change impacts in Small Island Developing States and the Wider Caribbean. Centre for Resource Management and Environmental Studies, The University of the West Indies, Cave Hill Campus, Barbados. CERMES Technical Report No. 77: 88pp.

[7] Monnereau et al. 2015.

[8] This figure includes full time and part time employment in the harvest sector.

[9] Masters, J. 2012. CRFM Statistics and Information Report - 2010.

to the consumer the additional value was 2.6 times that at the start of the value chain [10] (see table 1).

Table 1: Fishery dependency in project countries

Countries	Fish catch volume (in MT)[11]	Fish nutrition (fish as % animal protein) (2009)[12]	Fisherfolk as % national labour force	Number of Fishers engaged in marine fisheries[13]	Number of processing sector workers[14]	Number of fishing vessels[15]	Fisheries sector % of GDP (2010)
Antigua and Barbuda	3 500	23.6	3.80	1 521	50	388	1.2
Dominica	550	16.9	4.00	1 584	50	650	0.7
Grenada	2 974	28.1	6.22	2 805	75	770	1.4
St. Kitts and Nevis	19 304	21.2	4.21	756	50	254	0.4
Saint Lucia	1844	17.8	2.91	2 556	376	402	0.7
St. Vincent and the Grenadines	813	11.0	5.09	2 500	500	737	0.5
Trinidad and Tobago	12 839	14.7	0.01	3 477	250	1 918	0.5

Fishers in these islands target demersal species (mostly reef fish and crustaceans), as well as coastal and oceanic pelagic fishes such as flying fish, dolphinfish, tuna, Spanish mackerel, King mackeral and swordfish. Aquaculture production in the region is currently limited and most developed in Belize and Jamaica. However, aquaculture is under development in some Eastern Caribbean countries. Due to the high dependence in the Caribbean on marine resources[16] and the high vulnerability of fisherfolk and fisheries infrastructure in the coastal zone, plus increasing intensity of extreme-weather events, there is rising concern over the consequences of climate change and climate variability for the fisheries sector in the region. Consequently, effective adaptation measures for the fisheries sector are particularly critical for sustainable livelihoods, improved food security and conservation of marine resources. Although there are several climate change adaptation and capacity-building activities in the region, very few of these focus on the fisheries or aquaculture sectors.

b) Climate Change vulnerability and problems

Climate change impacts such as sea level rise, increasing coastal water temperatures (often resulting in coral bleaching), ocean acidification, and increasing frequency and

[10] Mahon, R., Parker, C., Sinckler, T., Willoughby, S. and Johnson, J., 2007. The Value of Barbados' Fisheries – A preliminary assessment. Fisheries Division, Ministry of Agriculture and Rural Development, Barbados, Fisheries Management Plan Public Information Document No. 2

[11] Latest available data from Fisheries Divisions (2012-013)

[12] FAO, 2009. Food balance sheets and fish contribution to protein supply.

[13] Latest available data from Fisheries Divisions

[14] Based on the seven National Project Design Reports, years vary but latest available.

[15] Latest available data from Fisheries Division.

[16] See Nurse 2011; Monnereau et al. 2013; Monnereau, Mahon, Mcconney, & Nurse, 2013.

strength of extreme events such as tropical storms, hurricanes and droughts pose significant threats to the region's coastal zones, maritime areas and economies. Yet, the direct (usually ecological) and indirect (both social and ecological) pathways that exist between climate change or variability and the potential impacts on the fisheries sector are not well known. Globally, impacts will vary across regions and countries as a result of their differing exposure (including anthropogenic climate change natural climate variability), sensitivity and level of adaptive capacity.[17] Adaptation and Disaster Risk Management (DRM) to climate change focusses on reducing vulnerability and increasing resilience to the potential adverse impacts of climate extremes and slow-onset changes, even though risks cannot fully be eliminated.[18] Despite the differences in vulnerability of the fisheries sector between regions and nations the Eastern Caribbean SIDS are similar in these respects and form a well-defined group suitable for collaboration in adaptation.[19]

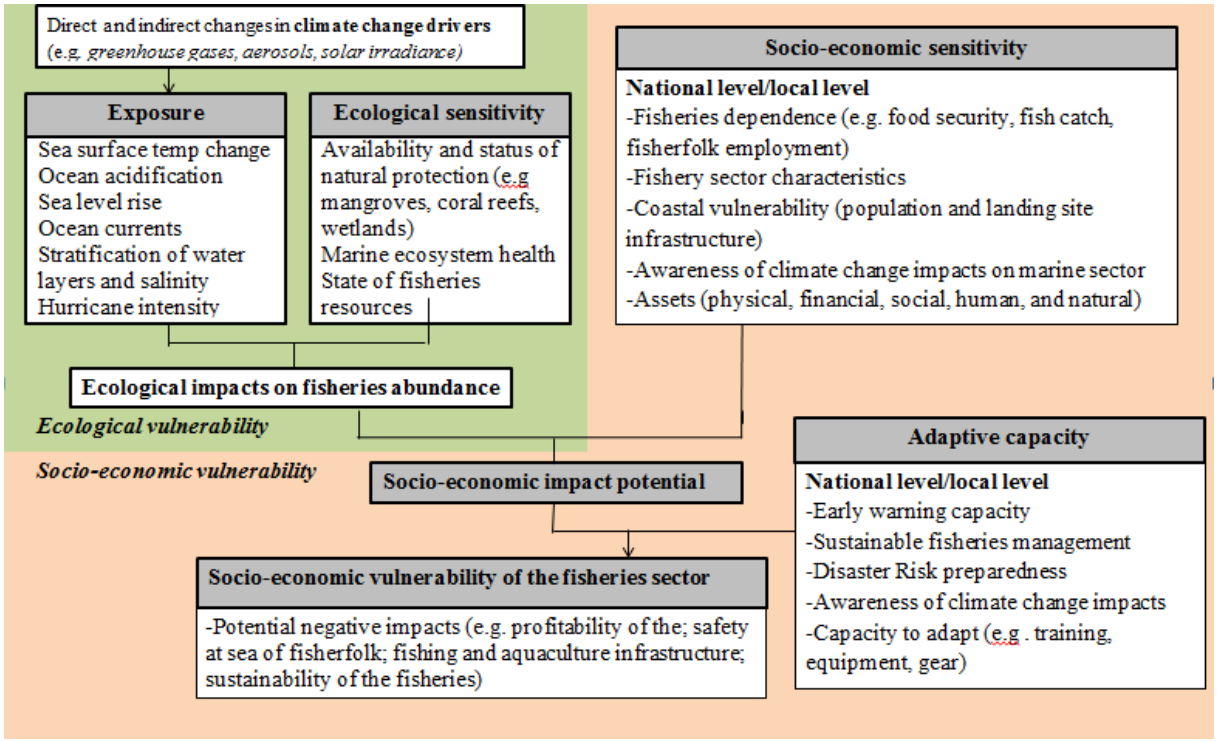
In line with IPCC definition, vulnerability of the fisheries sector to climate change impacts can be conceptualized as having three key components: exposure, sensitivity and adaptive capacity (see Figure 2). Exposure is the degree to which a system is stressed, related to factors external to the sector as well as internal. Sensitivity is the level of susceptibility to harm from climate change and is affected by the level of resource-dependence, as well as the state of resources and ecosystems and adaptive capacity helps to offset climate change impacts. Both adaptation and adaptive capacity occur at multiple scales (local, national, regional and international). Successful adaptation often requires linkages across these different scales. Figure 2 shows the ecological and socio-economic vulnerability of the fisheries sector in relation to climate change and the linkages between the different components (exposure, sensitivity and adaptive capacity). The components and their sub-components are highly inter-related. Such complexity is most appropriately addressed by attending to all of the components in an integrated approach.

[17] Allison, E., Perry, A., Badjeck, M.-C., N Adger, Brown, K., Conway, D., Dulvy, N. (2009). Vulnerability of national economies to the impacts of climate change on fisheries. *Fish and Fisheries*, *10*(2), 173–196; Barange, M., Merino, G., Blanchard, J., Scholtens, J., Harle, J., Allison, E., Jennings, S. (2014). Impacts of climate change on marine ecosystem production in societies dependent on fisheries, *4.*

[18] IPCC 2012. Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

[19] Monnereau et al. 2015

Figure 2: Framework of socio-economic vulnerability of the fisheries sector



Key challenges that the fisheries sector in the Eastern Caribbean is facing and that climate change adaptation projects need to address include:

1. Uncertain impacts on fisheries production and livelihoods
2. Increasing storm and hurricane impacts on coasts
3. Appropriate vulnerability assessments for adaptation planning
4. Declining coral reef health in the Caribbean region from multiple sources
5. Insufficient capacity building for fisherfolk organizations
6. Low levels of aquaculture investment and production
7. Inadequate fisheries planning and management and need for better mainstreaming of climate change in fisheries policies

These vulnerabilities in the Eastern Caribbean fisheries sector are further examined below.

1. Uncertain impacts on fisheries production and livelihoods

The ecological impacts of climate change on fisheries and aquaculture are expected to be largely negative. The key findings of the IPCC (2014)[20] show that the projections are that climate change will negatively affect the fisheries sector on a global scale. These changes include (but are not limited to): fish redistribution in which fish populations are shifting

[20] Pörtner et al. (2014). Ocean Systems (Chapter 6: 411-484); and Hoegh-Guldberg et al. (2014). The Ocean (Chapter 30) both in (2014). In IPCC (Ed.), *Impacts, adapation and vulnerability.*

away from tropical latitudes; high local extinction rates in the tropics and semi-enclosed seas; fish size changes: large fish will have a smaller maximum body size due to reduced oxygen capacity of seawater; coral bleaching events affecting fisheries biomass of coral reefs, abundance and productivity; and harmful algal blooms could cause mass die-offs of wild and farmed fish. Although its effects on marine organisms are not fully known, ocean acidification is expected to be a limiting factor in the development of corals, as well as other organisms with calcium carbonate shells and exoskeletons.[21] In projections regarding the redistribution of maximum fisheries catch potential[22] by 2050 due to climate change, the global map shows the potential yield for the Caribbean region will decline up to 40%. Differences within the region can be expected, however, between different types of fisheries and locations. Pelagic fishes are expected to be more resilient to climate change impacts, and might even become more abundant in some areas, whereas demersal fishes are expected to be solely negatively impacted.[23] However, the data generated by these types of global models projecting the impacts of sea surface temperature change on maximum potential yield of fisheries [24] are too coarse to be used at a regional or national scale and show a high level of uncertainty. There have to date not been downscaled modeling on the impacts of sea surface temperature change projections on commercially targeted fish stocks in the Caribbean region and their consequences on livelihoods.

2. Increasing storm and hurricane impacts on coasts

In the Caribbean region between 1980 and 2007, nearly 98 percent of disasters, 99 percent of casualties and 99 percent of economic losses related to natural hazards were caused by recurrent meteorological, hydrological and climate-related events, primarily tropical cyclones and storm surges, floods, droughts and extreme temperatures. These natural disasters are expected to be further exacerbated as a result of climate change.[25] This can already be observed in the increasing frequency and severity of extreme weather events experienced since the 1970s (Source: Collymore, 2011

) (see Figure3).[26]

[21] Nurse, L. (2011) The implications of global climate change for fisheries management in the Caribbean. *Climate and Development*, *3*(3), 228–241

[22] Cheung et al. 2010 have projected changes in global catch potential for 1066 species of exploited marine fish and invertebrates from 2005 to 2055 under climate change scenarios. Cheung et al. (2010). Large-scale redistribution of maximum fisheries catch potential in the global ocean under climate change. *Global Change Biology*, *16*(1), 24–35

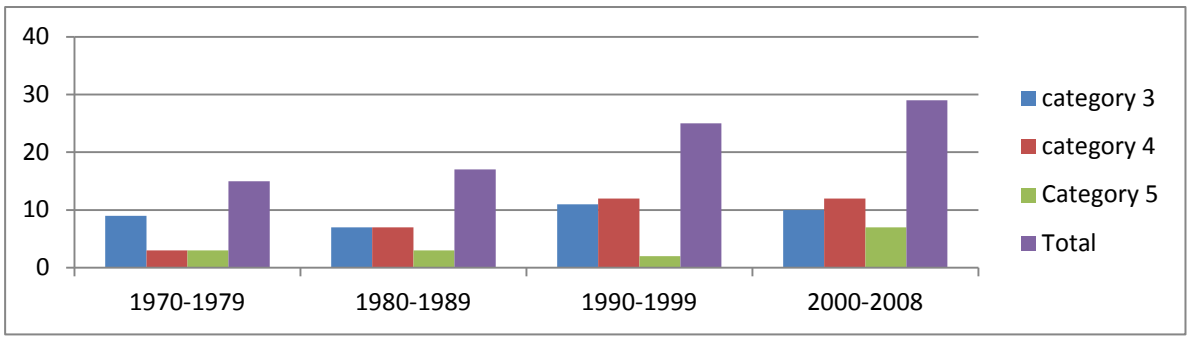
[23] Rijnsdorp, A. D., Peck, M. A., Engelhard, G. H., Mo¨llmann, C., and Pinnegar, J. K. 2009. Resolving the effect of climate change on fish populations. – ICES Journal of Marine Science, 66: 1570–1583.

[24] See 13 and Barange et al. 2014.

[25] World Metereological Organization, 2011

[26] Collymore, J. (2011) Disaster Management in the Caribbean: Perspectives on institutional capacity reform and development. Environmental Hazards 10 (1): 6-22

Figure 3: Major hurricanes in the Caribbean by decade (1970-2009)



Source: Collymore, 2011

The natural hazards[27] affecting Caribbean SIDS are mainly storms and hurricanes. The region experiences annual losses due to natural hazards in the order of USD 3 billion. More than 68 percent of these losses are in the social and productive sector.[28] Additionally 60 percent of the population of the region resides in the coastal zone while 70 percent of all economic activity takes place within 3 km of the coastline. For the seven project countries the percentage of storms and hurricanes of the total number of natural disasters between 1900-2015 was 76 percent. In the seven project countries the 35 storms and hurricanes between 1990-2015 caused 83 fatalities; approximately 320 000 people were affected and caused damages of approximately USD 6.5 million.[29]

Storms and hurricanes pose particular threats to the fishing sector as they cause flooding and destruction of landing sites, destruction of boats and gears, economic losses in terms of lost fishing days and reduce the safety of fishers. In 2010 Hurricane Earl, for example, caused a total damage of USD 122 000 to the fishing sector in terms of loss and damage of boats, gear destruction and loss of gear in Antigua and Barbuda. Disaster management in fisheries has been mainly response-oriented with activities, programmes and interventions not being aimed at adaptation.[30] Early warning systems are not adequate in the seven countries and effective communication, especially among disaster management authorities, fisheries authorities and coastal communities, has often faced challenges that pose threats to the fisheries sector as a whole and particularly to the lives and assets of fisherfolk. Limited safety-at-sea training and equipment combined with inadequate uptake of technology cause fisherfolk to suffer high risks. Although the FAO[31] has argued that safety at sea should be part of any sustainable and responsible fisheries management system, safety at sea in terms of training, equipment and early warning systems are not prominent in small-scale fisheries management plans in the Eastern Caribbean. In addition, in the seven project

[27] International Disaster Database http://www.emdat.be/database
[28] Collymore, J. (2011).
[29] International Disaster Database http://www.emdat.be/database
[30] Collymore, J. (2011).
[31] FAO (2007). Regional workshop on safety at sea in artisanal and small-scale fisheries in Latin America and the Caribbean. FAO Fisheries Report nr. 851.

countries the equipment needed to haul boats into safer areas and the infrastructure for safe harbours is limited. These pose great risks to economic assets that may or may not be insured. The limitations on insurance availability and access for small-scale fisheries and aquaculture constrain disaster risk reduction responses to climate change and variability.

3. Appropriate vulnerability assessment for adaptation planning

Vulnerability assessments based on a range of biophysical and socio-economic indicators have become the main means to establish who and what is vulnerable to the negative impacts of climate.[32] They are considered to be particularly relevant now that these impacts are increasingly being observed. [33] Fisheries sector vulnerability assessments have been carried out at the national level worldwide and within the Caribbean region.[34] The results show that the Caribbean region is highly vulnerable to climate change and suggest that the fisheries sector in Caribbean SIDS is more vulnerable than in other SIDS (Pacific and AIMS). The same study also suggests that the fisheries sector in Eastern Caribbean states is particularly vulnerable. The local level of variability by site within countries (e.g. characteristics of landing sites, poverty, and access to resources needed to adapt fishing boats and gear) is, however, not taken into account. An understanding of local level situations is crucial in designing appropriate, location-specific climate change adaptation strategies. There is at present, no regional framework for assessing climate change vulnerability of the fisheries sector at the local level that can easily be applied in fishing communities across the region. Development and implementation of a regional framework across fisheries communities will provide valuable inputs for further adaptation strategies of the fisheries sector.

4. Declining coral reef health in the Caribbean region from multiple sources

Coral reef ecosystems are vital to the economies of Caribbean countries. For food, for natural coastal protection and as a basis for tourism, people in the Caribbean are dependent on the services that reefs provide.[35] Storms and hurricanes can damage and remove corals from a reef through direct wave action, or cause indirect damage through abrasion, blocking light and smothering by depositing sediment and rubble. According to the World Resource Institute (WRI) the Eastern Caribbean's coral reefs are at extremely high risk from overfishing and pollution (see Figure 4).[36] Overfishing caused steep reductions in the populations of herbivores, especially large parrotfishes, which are the most effective grazers on Caribbean reefs. Overfishing these important grazers, often in combination with high inputs of nutrients from run off, sewerage pollution and other external factors, has degraded many Caribbean reefs.[37] Climate change, increasing ocean acidification and thermal stress will also affect coral reefs and lead to more

[32] Klein, R. J. T. (2009). Identifying Countries that are Particularly Vulnerable to the Adverse Effects of Climate Change : An Academic or a Political Challenge ? *Carbon and Climate L. Rev.*, *1*, 283–291; Tschakert, P., van Oort, B., St. Clair, A. L., & LaMadrid, A. (2013). Inequality and transformation analyses: a complementary lens for addressing vulnerability to climate change. *Climate and Development*, *5*(4), 340–350.

[33] Hinkel, J. (2011). "Indicators of vulnerability and adaptive capacity": Towards a clarification of the science–policy interface. *Global Environmental Change*, *21*(1), 198–208

[34] Monnereau, et al., 2015.

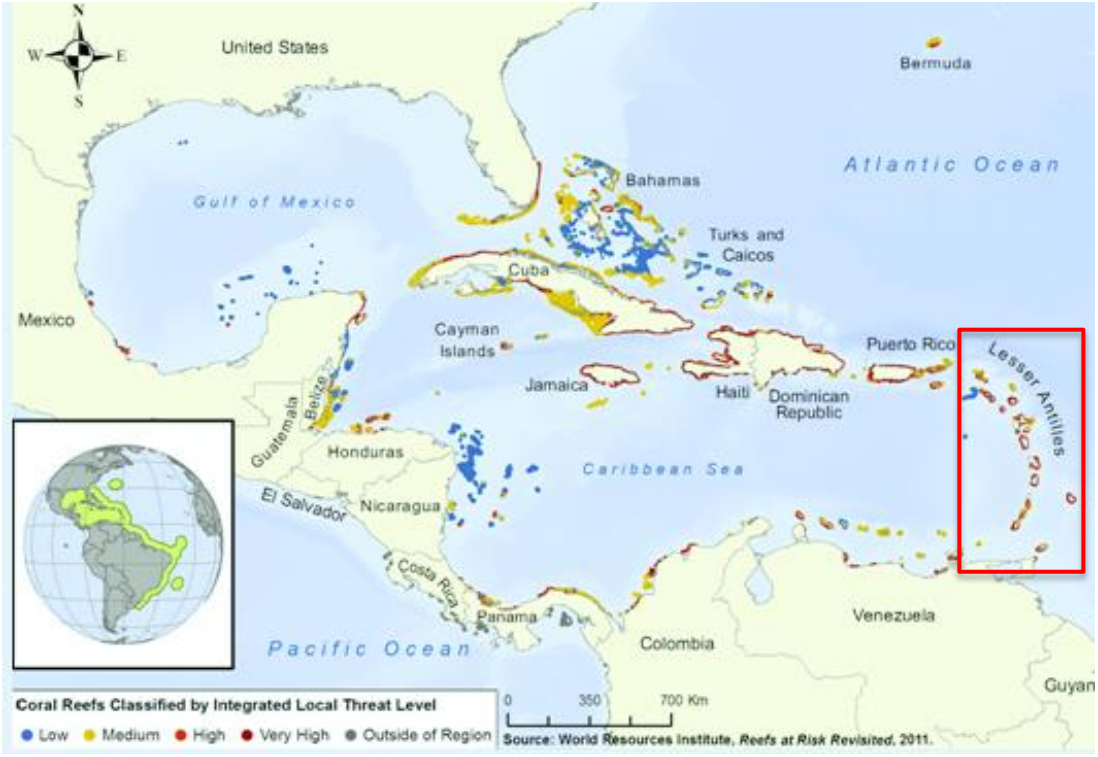
[35] Jackson J, Donovan M, Cramer L, Lam V (editors). (2014) Status and Trends of Caribbean Coral Reefs: 1970-2012. Global Coral Reef Monitoring Network, IUCN, Gland, Switzerland.

[36] Burke, L. et al. 2011. Reefs At Risk Revisited. World Resources Institute.

[37] Jackson et al. 2014.

extensive coral bleaching. Although natural resources managers can do little to directly reduce greenhouse gas emissions that are causing climate change, enhancing fisheries management to mainstream climate change adaptation is crucial for reef fishery resilience.

Figure 4: Threat levels for coral reefs in the Caribbean Sea (*box is Eastern Caribbean)*



Source: Burke et al. 2011. Reefs at Risk Revisited

5. Insufficient capacity building for fisherfolk organizations

Promotion of fisheries co-management in order to enhance sustainable utilization of resources is considered very important in the region. This calls for empowering resource user groups through building their capacity to partner with government in the collaborative management of resources. There have been numerous attempts in the Caribbean to establish networks of civil society organisations in order to increase their voice in decision- and policy-making for the use and management of the natural resources on which many Caribbean people depend for their livelihoods. There are currently 103 fisher folk organizations (FFOs) in the 7 project countries of which 62 are active, 20 are inactive and the status of the remainder is unknown. In one country, St. Kitts and Nevis there are no FFOs active. Approximately 4 549 fisher folks are members of the 62 active FFOs which suggests that approximately 30% of fisherfolk in the seven countries are member of an active FFO.

Table 2: Fisher folk organisation characteristics in the seven project countries

Country	Number fisher folk organisations	Number active fisher folk	Membership total of active FFOs	Total number fishers	Percentage of fishers member of

		organisations			FFO
Antigua and Barbuda	4	4	369	1 521	24
Dominica	15	13	473	1 584	30
Grenada	11	8	221	2 805	27
St. Kitts and Nevis	6	0	0	756	0
Saint Lucia	15	13	473	2 556	19
St. Vincent and the Grenadines	3	3	230	2 500	9
Trinidad and Tobago	49	20	2783	3 477	80
Total	**89**	**62**	**4 549**	**15 199**	**30**

Source: National Project Design Report

The Caribbean Network of Fisherfolk Organisations (CNFO) and the FFOs have had limited success in empowering resource user groups through building their capacity to partner with government in the collaborative management of resources .[38] Common weaknesses in the region include: low institutional cohesion and lack of cooperation among the members of FFOs; insufficient training and awareness building for fisheries governance; ineffective or no participation of fisherfolk organizations in fisheries decision making processes at national level; limited knowledge about relevant climate change policies and potential adaptation strategies at both the national (FFOs) and regional levels (CNFO).[39]

6. Low levels of aquaculture investment and production

Aquaculture (freshwater, brackish water and marine) is globally the fastest growing food-producing sector, and the latest figures for worldwide aquaculture show that it contributes 42 percent of total fish production for human consumption.[40] Aquaculture has become increasingly important in meeting the deficit created by declining capture fisheries and is trying to meet the increasing demand for fish in domestic and international markets due to lifestyle and economic factors. Aquaculture could assist in the Eastern Caribbean in terms of food security, employment and foreign exchange earnings, yet it is still underdeveloped. The aquaculture sector is not well developed in the Caribbean region, with significant development limited to countries like Jamaica and Belize (CRFM 2011). In the seven project countries, the sector is in its infancy state in Saint Lucia, Trinidad and Tobago, Dominica and Antigua and Barbuda (see Table 3).

Table 3: Aquaculture development in the seven project countries

Countries	Number of aquaculture workers	Aquaculture development
Antigua and Barbuda	5	Sea moss (*Gracilaria* spp.) farming is being cultured in small quantities. There are several aquaponic farms (Nile tilapia *O. Niloticus*) and one aquaponics demonstration facility
Dominica	5	The Asian freshwater prawn (*Macrobrachium Rosenbergii*) and the Nile tilapia (*O. Niloticus*) are presently cultured. Seamoss (*Gracilaria* spp.) is

[38] Phillips, T. 2015 GCFI Proceedings conference November 2014. Fisherfolk organisations influencing policy and building capacity in the Caribbean Community (CARICOM)
[39] Phillips, T. 2015; National Project Design Reports.
[40] FAO (2014). The State of World Fisheries and Aquaculture: opportunities and challenges. 2014.

		also cultured in bays
Grenada	2	Small seamoss farm and a small backyard tilapia farm
St. Kitts and Nevis	1	Only one research project on culturing tilapia in ponds near the ocean using seawater
Saint Lucia	72	Aquaculture production of tilapia (*O. Niloticus*), freshwater prawn (*Marcrobrachium rosenbergii*) and seamoss (*Gracilaria* spp.)
St. Vincent and the Grenadines	2	Seamoss farm on Union Island
Trinidad and Tobago	76	The Fisheries Division continues to carry out experimental work on developing viable systems for the culture of tilapia

Source: National Project Design Reports and Masters, J. 2012. CRFM Statistics and Information Report - 2010.

In recent years however aquaculture development has been prioritized by various governments in the Eastern Caribbean states and as a consequence some countries developed policies and strategies in support of responsible development of the sector.[41] It is clear however that some of the existing aquaculture sites are not well-located and suitable for further development. Aquaculture development needs to take climate change impacts such as increasing intensity of storm and hurricanes, and consequent increased risk of damage from waves, rain and wind, into consideration. The enabling policy framework to mainstream climate variability and change into aquaculture is often lacking.

7. Inadequate fisheries planning and management

Fisheries production is expected to be highly impacted by climate change while the sector is already under threat from overfishing, loss of habitat, pollution and invasive species. The fisheries sector production in the Caribbean region has declined some 40 percent over the last two decades.[42] An assessment of the exploitation levels of commercially harvested fish stocks revealed that the Western Central Atlantic region, to which the Eastern Caribbean islands belong, is the most overexploited region in the world in terms of fisheries exploitation levels. Some 54 percent of the commercially harvested fisheries stocks in this region are overexploited or depleted and an estimated 41 percent of the stocks are fully exploited at present.[43] Illegal, unreported and unregulated (IUU) fishing compounds the problems. These factors make it all the more critical to introduce or re-establish effective fishery management that incorporates climate change adaptation (CCA). Effective governance and enabling policy are thus necessary to make fisheries more resilient to climate change. However, there are shortcomings in this regard in the region.[44] These include:

[41] McConney, Charlery, & Pena, 2013 . *Climate Change Adaptation and Disaster Risk Management in Fisheries and Aquaculture in the Caribbean Region.* Volume 2 Regional Strategy and Action Plan. *CRFM Technical & Advisory Document*, No. 2013 / 8.
[42] FAO (2014). *The Sustainable Intensification of Caribbean Fisheries and Aquaculture.* Factsheet 3.
[43] FAO (2014).
[44] CRFM (2013). Issues Paper nr. 1. *Adoption and Implementation of the Agreement Establishing the Caribbean Community Common Fisheries Policy*. CRFM, 2013. McConney, P., J. Charlery, M. Pena. *Climate Change Adaptation and Disaster Risk Management in Fisheries and Aquaculture in the Caribbean Region.* Volume 1 – Assessment Report. *CRFM Technical & Advisory Document*, No. 2013/6. 100 p. FAO (2015). *Review of current fisheries management performance and conservation measures in the WECAFC area*. FAO Fisheries and Aquaculture Technical Paper 587.

1 There is minimal attention to the Code of Conduct for Responsible Fisheries (CCRF) and other relevant international and regional policy guidance in most countries which hinders adaptation;

2 As the ecosystem approach to fisheries (EAF) is accepted but not yet widely practiced in the Caribbean, the interactions among stakeholders need to be considered afresh in mainstreaming CCA and DRM into fisheries and aquaculture management;

3 Benefits of applying good governance and co-management principles have been widely discussed, but in the Caribbean there are few success stories as yet;

4 As CCA and DRM are not yet mainstreamed in fisheries policies and plans at the national level, the notion that the key contributor to building adaptive capacity and resilience is good fisheries management has not been institutionalised.

As illustrated above, vulnerability of the fisheries and aquaculture sectors to climate change cannot be isolated from deficiencies in their management and development in general. The key climate-induced problems are closely associated with the usual problems of fisheries management that climate change further aggravates. The above examples of climate change impacts on the vulnerability of the fisheries sector in the Eastern Caribbean reinforce the need for urgency to increase resilience and reduce vulnerability through comprehensive adaptation measures.

c) *Institutional and policy framework*

The seven countries in this project are all signatories to the *United Nations Convention on the Law of the Sea (UNCLOS)* and the *United Nations Framework Convention on Climate Change (UNFCC)*. Globally, there is increasing attention to the need for sustainable development and to take into account its three pillars of environmental, economic and social sustainability as expressed in the United Nations Conference on Sustainable Development Rio+20 outcome document *The Future We Want.*[45] Throughout and since the Rio+20 process there has been a growing appreciation that the world's oceans and seas and SIDS require more in depth attention and coordinated action. This is reflected in various initiatives such as the:

- UNDESA expert group meeting on Oceans, Seas and Sustainable Development
- Third International Conference on SIDS
- Work of the Global Ocean Commission
- Global Partnership for Oceans
- Prominence of oceans and seas in the UN five-year Action Agenda 2012-2016
- UN Sustainable Development goal #17 to "*Conserve and sustainably use the oceans, seas and marine resources for sustainable development*"

During the last few decades, there has been progressive recognition of the need for ecosystem-based approaches, including attention to the human dimensions, to ocean governance and fisheries management, such as EAF and similar approaches. The 1995 CCRF provides a comprehensive framework for sustainable fisheries in an ecosystem context and this voluntary instrument is widely referred to in regional and national fisheries policies, including in the Eastern Caribbean countries. Also connecting global

[45] UN 2012 Resolution adopted by the General Assembly on 27 July 2012 A/RES/66/288*

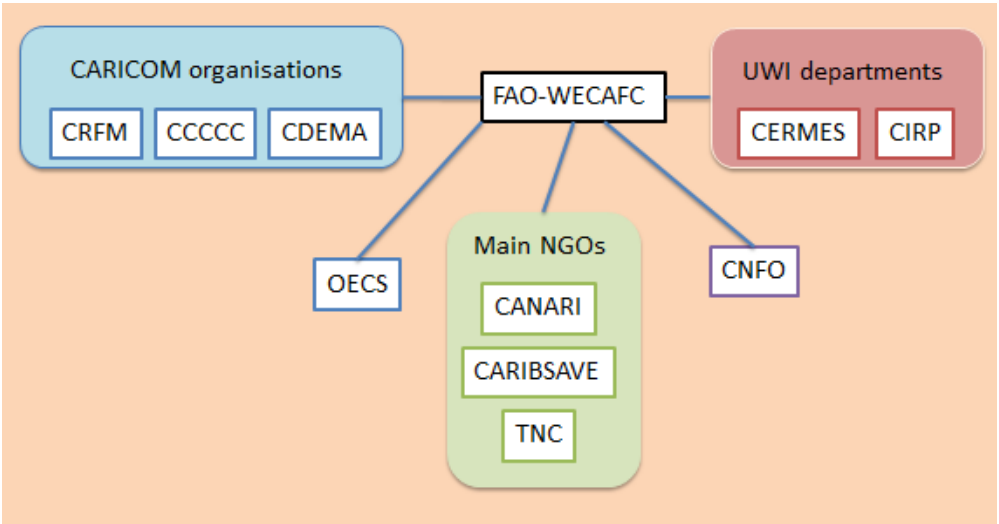
to regional policy, the Caribbean Community Common Fisheries Policy (CCCFP) was approved by the CRFM Ministerial Council in 2014 and has been endorsed by the Council for Trade and Economic Development (COTED) as the definitive fisheries policy for the Caribbean Community. In its preamble the CCCFP makes reference to commitments under UNCLOS, UNFCCC, the CCRF and other international and regional instruments that frame the institutional and policy setting for this project.

The objective of the CCCFP is to promote the sustainable development of fishing and aquaculture industries in the Caribbean through:[46]

1. Institutional strengthening, including capacity building of Participating States and legislative modernization;
2. Harmonized measures and operating procedures for sustainable fisheries management, and the administration of the fishing industry;
3. Effective monitoring, control, and surveillance systems to deter IUU fishing
4. Build the institutional capabilities of Participating Parties at multiple levels;
5. Integrated ecosystems management;
6. Quality assurance and sanitary and phytosanitary systems.

For this project a number institutions are of crucial importance (Figure 5). We make the distinction between the FAO Subregional office for the Caribbean known as the *Western Central Atlantic Fishery Commission* (WECAFC), organisations belonging to the Caribbean Community and Common Market (CARICOM), the *Organisation of Eastern Caribbean States* (OECS), different departments of the University of the West Indies (UWI) involved, as well as the Non-Governmental Organisations (NGOs) and the *Caribbean Network of Fisherfolk Organizations* (CNFO). The UWI departments, NGOs and CNFO will be further discussed in section 1.1.3 (Table and Table).

Figure 5: Regional institutions of importance in the CC4FISH project



There are two main regional fishery bodies (RFBs) in the project region; WECAFC and the *Caribbean Regional Fisheries Mechanism* (CRFM). The objective of WECAFC, a commission established in 1973 under FAO's constitution, is to promote effective

[46] CRFM, 2014. Issues Paper nr. 5. The CARICOM Common Fisheries Policy and the S.A.M.O.A. Pathway: Connecting the Dots

conservation, management and development of living marine resources in the area of competence of the commission and to address common problems faced by member countries. FAO's WECAFC is the only RFB with a true regional coverage and membership of all countries in the wider Caribbean region. It has 34 members (including also the European Union and the USA) and all seven project countries are members. WECAFC is headquartered in Barbados within the FAO Subregional office for the Caribbean (FAO-SLC) that will host the CC4FISH project coordination unit (PCU), providing for close integration with other regional fisheries-related initiatives.

The CRFM is the other major RFB and one of three CARICOM organisations of particular importance to this project. The CRFM has 17 members, including the seven project countries. The CRFM was officially inaugurated under CARICOM in 2003. It is an inter-governmental organization with its mission being to promote and facilitate the responsible utilization of the region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region. The CRFM consists of three bodies – the Ministerial Council; the Caribbean Fisheries Forum; and the CRFM Secretariat which all have distinct responsibilities and mandate.

The second CARICOM organization of importance to this project is the *Caribbean Community Climate Change Centre* (CCCCCC) that coordinates the CARICOM response to climate change, working on effective solutions and projects to combat the environmental impacts of climate change and global warming. It provides climate change-related policy advice and guidelines to the CARICOM Member States through the CARICOM Secretariat and to the British Caribbean Overseas Territories and is archive for regional climate change data and documentation.

The third, the *Caribbean Disaster Emergency Management Agency* (CDEMA), is the leading disaster risk management (DRM) organization within CARICOM. It seeks to reduce the risk and loss associated with natural and technological hazards and the effects of climate change to enhance regional sustainable development. Since its creation in 1991 it has taken an independent role in disaster relief for the Caribbean and provides a local response effort and management system to handle the increase of natural disaster in the recent few decades by mobilizing and coordinating relief and mitigating and eliminating (if possible) the immediate consequences of disasters. In recent years, CDEMA has been active in providing assistance to members after the passage of hurricanes and other natural disasters. Its past and current strategic plans show commitment to comprehensive disaster management.

Another organization, of less direct importance to this project, is the *Organisation of Eastern Caribbean States (OECS),* created in 1981 in this sub-region of CARICOM. Its mission is to strengthen cooperation between the Eastern Caribbean States and promote unity and solidarity among themselves. This is an inter-governmental organisation dedicated to economic harmonisation and integration, protection of human and legal rights, and the encouragement of good governance between countries and dependencies in the Eastern Caribbean. It has initiatives addressing natural disasters, climate change and biodiversity but leaves the fisheries and aquaculture aspects largely to CRFM on the provision that the OECS Commission maintains an active role in ensuring that their developmental goals are not prejudiced by this arrangement. In the OECS mandate for sustainable ocean governance it is stated that members agree to take all necessary conservation and management measures in relation to ocean governance

within their legal and policy frameworks. The OECS Commission creates institutional frameworks for regional cooperation in transboundary ocean management; strengthens capacity for development and implementation of ocean law and policy and facilitates the provision of technical services in sustainable ocean resource and marine environmental management. Of the seven project countries only Trinidad and Tobago is not a member state.

In collaboration with the governments of the Caribbean region, and particularly the WECAFC members, FAO is supporting project development activities with the aim of increasing the understanding of the vulnerability of Caribbean fisheries to climate change and implementing adaptation strategies that will enhance the resilience of coastal communities and ecosystems and that are in line with the FAO/CRFM/WECAFC/CDEMA/CCCCC *Strategy and Action Plan for disaster risk management and climate change adaptation in fisheries and aquaculture in the CARICOM region*. The Strategy builds on the CARICOM *Liliendaal Declaration on Climate Change and Development*[47] (which sets out key climate change related interests and aims of CARICOM member states) and the *Comprehensive Disaster Management (CDM) Strategy and Programming Framework 2014-2024* of CDEMA. This Strategy and Action Plan was discussed and endorsed in Kingston, Jamaica on 10-12 December 2012 at technical level by representatives of climate change, DRM and fisheries agencies of 23 countries and overseas territories in the Caribbean region. The Strategy and Action Plan is being shepherded by CRFM and implementation support through various projects is being developed. The CC4Fish project significantly contributes to the joint implementation efforts made by the various partner countries and agencies.

Based on the Liliendaal Declaration, the Implementation Plan (IP) for the Regional Framework was developed. It is entitled *Delivering transformational change 2011–21* and incorporates several global and regional instruments concerning climate change and variability. In the IP it is stated that adaptation and capacity-building must be prioritized and a formal and well-financed framework established within and outside the UNFCCC to address the immediate and urgent, as well as long-term, adaptation needs of vulnerable countries, particularly SIDS.

The global and regional policy and institutional arrangements described above provides a framework that will facilitate cooperation for making the fisheries sector more resilient to climate change in the region. The CRFM and WECAFC have recorded successes in having regional declarations and fishery management recommendations accepted by the countries in the region and can therefore help guide with mainstreaming climate change adaptation policies and measures throughout the Caribbean region.

At the national level, the institutional structures for fisheries management include fisheries and environmental ministerial functions, research institute (in the case of Trinidad and Tobago) and stakeholder associations.

In all seven project countries the Fisheries Division (FD) is housed in a Ministry, most often with agriculture under which fisheries and aquaculture are treated as sub-sectors

[47] For full declaration see http://www.caricom.org/jsp/communications/meetings_statements/liliendaal_declaration_climate_change_development.jsp.

(see Table 4). Fisheries authorities across the seven countries share a similar general organisational structure (see Figure 6).[48]

Figure 6: General institutional arrangements of fisheries authorities in the seven project countries

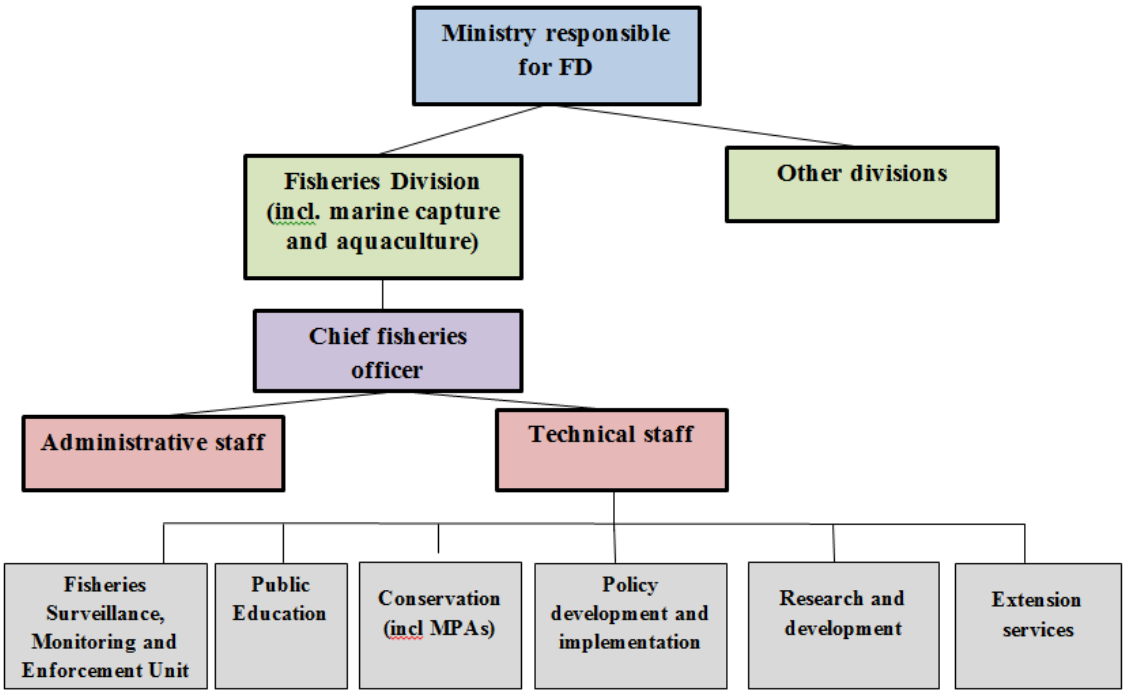


Table 4: Fisheries Divisions' parent ministries in the seven project countries

Country	Parent ministries of Fisheries Divisions
Antigua and Barbuda	Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs
Dominica	Ministry of Agriculture and Fisheries
Grenada	Ministry of Agriculture, Lands, Forestry, Fisheries and Environment
St. Kitts and Nevis	Ministry of Agriculture, Marine Resources and Cooperatives
Saint Lucia	Ministry of Agriculture, Food Production, Fisheries, Co-Operatives and Rural Development
St. Vincent and the Grenadines	Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry.
Trinidad and Tobago	Ministry of Land and Marine Resources

The Fisheries Divisions have similar mandates. Each is the national agency responsible for the sustainable development of the fisheries sector. Their responsibilities include:

- Developing and implementing fisheries policies

[48] Trinidad and Tobago are an exception to this common structure as the fisheries sector is housed under Ministry of Land and Marine Resources yet the Aquaculture Unit is housed under the Ministry of Food Production.

- Translating and implementing other national policies relating to its mandate
- Translating and implementing international policies relating to its mandate
- The development of a viable fisheries sector that is socially, ecologically and economically sustainable
- Data collection and research that underpins sustainable fisheries management
- Creating and maintaining an environment for enhancing productivity in the fisheries sector
- Facilitating the production of safe seafood and food security
- Education and training- developing and implementing public awareness programmes and training stakeholders
- Collaborating with regional and international agencies including CRFM, FAO, European Union, and GEF

In most of the countries the fisheries legislation provides for a statutory multi-stakeholder body such as a Fisheries Advisory Committee. This kind of forum facilitates the stakeholder interaction that favours EAF and adaptation measures. Where such statutory bodies do not exist it is common to have *ad hoc* committees established for coordination and collaboration.

1.1.1 Rationale

a) Baseline projects and co-financing initiatives

As described above the fisheries sector in the Eastern Caribbean countries constitute an important part of national and local economies. However, this is threatened by the impacts of climate change and variability as well as by inadequate fisheries management described previously. The adverse impacts of climate change on ecosystem health and the sustainability of the fisheries sector have been recognized, and efforts are being made to address the deficiencies both regionally and within specific project countries.

I. Baseline Initiatives <u>not</u> serving as co-financing

a) Regional level initiatives

The list below includes ongoing regional schemes that are indirectly related to the CC4FISH Project as the fisheries focus of these projects is very small in most cases and have already been concluded. Kindly see Table 5 below.

Table 5:

Regional initiatives implemented in the Eastern Caribbean (not considered as co-financing for the CC4FISH project)

Main Organization	Regional Baseline Initiative (not serving as co-financing) & timeframe	Objective	Related to CC4FISH Project Component
CARIBSAVE / CDKN/ CCCCC	The Climate and Development Knowledge Network CARICOM Research Programme (2010-2011)	To support competitive, demand-led research that addresses questions of	**1**

		regional priority based on recent climate change work conducted in the region	
SALISES, UWI	Managing Adaptation to Environmental Change in Coastal Communities: Canada and the Caribbean (C-CHANGE) (2009-2014)	To support research on coastal adaptation to environmental change including the impacts of storm surge and sea-level rise on susceptible coastal communities	**1,2**
CCCCC	Special Programme for Adaptation to Climate Change (SPACC) (2007-2014)	To support efforts to implement adaptation measures addressing the impacts of climate change combating biodiversity loss and land degradation in coastal communities	**3**
CERMES	Future of Reefs in a Changing Environment (FORCE) (2010-2014)	To identify the most appropriate management interventions for coral reefs and the governance structures needed for their implementation	**1,2,3**

b) Baseline Initiatives at National Level(s)

In addition to the regional baseline initiatives carried out in the seven CC4FISH countries (see Table 5), the baseline initiatives that have been implemented at national level(s) are shown in Table 6 below. Table 6 also includes the identification of gaps in the baseline scenario, per country.

Table 6:

Baseline initiatives implemented at national level (not considered as co-financing for the CC4FISH project)

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
Antigua and Barbuda Projects and programmes concern vessel monitoring, marine protected areas, fish aggregating devices ad climate change adaptation. As with all other participating countries, the coastal and marine climate-related initiatives are quite recent and not well institutionalised such as through livelihoods diversification, building adaptive capacity, diversifying livelihoods and mainstreaming policy. This recurrent theme is relevant mainly to Components 1 and 2. Related baseline initiatives not providing co-financing in Antigua and Barbuda are detailed below.			
JICA	Radar Development Project (2015-2016)	Developing a radar system for vessel monitoring, but now requires better transponders for boats in order to improve safety-at-sea by means of improved communication and tracking. Resilience can be enhanced and livelihoods improved with the additional technology	2
FAO	Project: "Development of a tilapia hatchery and aquaponics training and demonstration centre - Zero Hunger Challenge – Antigua & Barbuda" (International Zero Hunger Challenge). (2010-2012)	It developed a tilapia hatchery and aquaponics training and demonstration centre to enhance food security. This needs to be followed up to better establish aquaculture and aquaponics as viable enterprises within the diversification of livelihoods	2
CANARI	Strengthening Caribbean fisherfolk networks to participate in governance for food security (2013-2016)	Supports fisherfolk organisations in Antigua and Barbuda to enable them to more effectively participate in fisheries governance and management. However, a climate smart ecosystem approach to fisheries is required that incorporates fisherfolk organisations.	2, 3
IUCN	Biodiversity And Protected Area Management Programme (BIOPAMA) (2012-2016)	Strengthening of institutional capacity of fisheries authorities in understanding biodiversity, livelihood and decision-making related to protected areas. Needs additional data, planning and outreach to mainstream climate change adaptation that supports fisheries.	1, 3
OECS, JICA	Caribbean Fisheries Co-Management (CARIFICO)	FAD fishery development by means of updating regulations to include FAD fishing licenses;	2

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
	Project (2015-2016)	consultation on policies for operating FADs, and fisherfolk have received training in FAD design and construction. However further livelihood enhancement is needed.	
OECS	Reduce Risks to Human & Natural Assets Resulting from Climate Change (RRACC) Project (2011-2015)	Institutional capacity building and addressing information gaps through support for key practitioners in government and related sectors affected by climate change. Yet despite the information there needs to be more emphasis on mainstreaming best practices	3
Dominica The CATS project supports management of the Soufriere/Scott's Head Marine Reserve in the south to improve the management of marine resources and thus improve ecosystem health to support fisheries. The ECMMAN project (see Table 7) provides similar services at the Cabrits National Park with livelihoods support as well. Dominica has proven vulnerable to natural hazards, which needs to be better understood and documented (Component 1). ICT has not been added to the FADs programme. This could reduce the dependence on coastal resources and improve adaptation and collective action, while building upon the cooperative system. Related baseline initiatives not providing co-financing in Dominica are detailed below.			
CANARI	Strengthening Caribbean fisherfolk networks to participate in governance for food security	Capacity of fisherfolk leaders has been strengthened by means of workshops identifying challenges to the nine fisheries cooperatives playing an effective role in fisheries governance and identification of opportunities to counter these challenges and natural hazards such as tropical storms. Re-assessment of vulnerability required.	1, 3
IUCN	BIOPAMA	Workshop to improve MPA management and regional meetings to improve collaboration among countries especially in database use that is relevant to climate models which incorporate biodiversity	1, 3
Caribbean Public Health Agency (CARPHA) and GIZ	Coastal Resources Management and Conservation of Marine Biodiversity in the Caribbean CRMCMB (CATS project) (2013-2017)	Supports management of the Soufriere-Scott's Head Marine Reserve to improve the sustainable use of the marine resources and thus improve overall ecosystem health in the country. Major fishing in the area	3

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
		requires integration into protected area and climate smart planning. To build upon local area management.	
OECS, JICA	CARIFICO Project	Consultation on policy for operating around FADs. Fisherfolk have received training in FAD design and construction. Implementation and improvement of FAD design (e.g. by use of additional buoys to withstand strong currents). Biological data collection by fisherfolk. Need to assess and plan for catch variability due to climate.	2, 3
Mona Office for Research and Innovation (MORI) (UWI)	Caribbean Regional Track of the Pilot Program for Climate Resilience (PPCR) - Strategic Programme for Climate Resilience (2015-2019)	Support for strengthening of data management capacity, identification of data needs for improved analysis of climate change impacts, and information sharing and exchange of best practices. Requires further integration of climate data into the ecosystem approach to fisheries.	1
OECS	RRACC Project	Improvement of infrastructural works along the coast to withstand future flooding due to climate change impacts (sea level rise and increased intensity of extreme weather events) to protect livelihoods.	2
Grenada The At the Water's Edge (AWE) project (see Table 7) has carried out a national and local vulnerability assessment to help better response to current and anticipated impacts related to climate change (extreme weather events and sea level rise). There is an opportunity to build upon these assessments to improve their relevance and that of MPAs to fisheries planning. There is also an opportunity to build upon the physical infrastructure for climate-proofing under the PPCR to make it more compatible with fisheries sustainability. Related baseline initiatives not providing co-financing in Grenada are detailed below.			
UNEP	Capacity building for Coastal Ecosystems-based Adaptation (EbA) in SIDS	Capacity building activities to improve effective stakeholder consultation and participation in the development and decision making of coastal EbA interventions; sharing of best lessons learned. Suitable platform for promoting climate	2, 3

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
		mainstreaming.	
CANARI	Strengthening Caribbean fisherfolk networks to participate in governance for food security	Capacity training of fisherfolk by means of workshops to identify the challenges fisherfolk face in participating in fisheries governance and the key issues to address these challenges. Aimed at incorporating climate into postharvest livelihoods as well.	2
IUCN	BIOPAMA	Training of MPA stakeholders by means of sharing information and best practices to improve sustainable use of fisheries resources.	3
CARPHA and GIZ	CRMCMB	MPA management and public awareness activities were carried out: e.g. organization of a MPA Summer Camp for school children. Useful platform for developing stewardship and mainstreaming the notion of climate smart policies and practices via the youth.	3
OECS, JICA	CARIFICO	Development of FADs and improving existing FAD design (e.g. by additional fenders and pressure buoys to withstand strong currents). Addition of ICT needed to enhance monitoring of effort.	2
Mona Office for Research and Innovation (MORI) (UWI)	PPCR	Support for Integrated Water Resource Management, capacity building at the sector level, and data collection and management which could support early warning systems requested in CC4FISH.	1
OECS	RRACC	Awareness building activities were carried related on general climate change adaptation measures (e.g. infrastructural) in Grenada. Evolving a fisheries-specific focus for outreach needed.	3
CCCCC	Coastal Protection for Climate Change Adaptation in the Small Island States in the Caribbean	Improved management of protected areas, reduction of land-based stressors on coastal marine ecosystems (inside and outside of MPAs). Relevant to	3

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
		consideration of *Sargassum* seaweed high abundance and developing measures for climate adaptation.	
St. Kitts and Nevis The CARIFICO project is deploying nearshore FADs targeting coastal and offshore pelagic fish. These FADs could be enhanced with ICT applications to improve safety at sea of fisherfolk. Marine spatial planning and zoning have been done without including the EAF approach. EAF takes integrated coastal management as starting point. Successful tests in St. Kitts and Nevis may be replicated in neighbouring islands, even outside the CC4FISH project intervention area.			
FAO, GIZ and Ministry of Sustainable Development	Communication strategy and plan for climate change adaptation	Strengthened institutional capacity and climate change adaptation mainstreamed into policies and plans of government agencies is an excellent basis for follow-up activity specific to fisheries.	3
CANARI	Strengthening Caribbean fisherfolk networks to participate in governance for food security	Capacity building activities to develop and/or improve fisherfolk and fish vendors fish handling and processing skills in order to improve adequate facilities for landing, storage, processing and marketing of fish and fish products for improved food security and livelihoods. Value chain analysis leads to improved governance.	2
CARPHA and GIZ	CRMCMB	Development of integrated coastal zone management for St. Kitts and Nevis, including the protection and rehabilitation of marine ecosystems. Critical for integrating ecosystem-based approaches.	3
OECS, JICA	CARIFICO	Supply of materials for construction of FADs; support participation and cooperation with fisherfolk on FAD development, deployment and management. Support for the government on an initiative to change their fisheries laws to include a user fee for the FADs. All contribute to reducing vulnerability to climate change, variability.	2
OECS	RRACC	Development of information to create public awareness	3

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
		activities on climate change impact projections in St. Kitts and Nevis provide platform for fisheries-specific interventions and mainstreaming.	
Saint Lucia The ECMMAN project (see Table 7) is helping Saint Lucia in developing and strengthening its MMAs. The objective is to develop an Eastern Caribbean Regional Networks of MMAs to improve ecosystem health. These areas intersect with active fisheries and more coherent policy is required. Some groundwork has already been done on vulnerability, but information is not enough. New assessment is needed focused on fisheries management and climate change mainstreaming in this sector. Related baseline initiatives not providing co-financing in Saint Lucia are detailed below.			
World Bank	Disaster Vulnerability Reduction Project (DVRP)	Support for infrastructural activities; providing and improving technical assistance for improved assessment and application of disaster and climate risk information to support decision making.	1
CANARI	Strengthening Caribbean fisherfolk networks to participate in governance for food security	Promotes and supports new market opportunities and improves cooperation among fisherfolk and other key stakeholders in lobbying and advocating for change in national fisheries and related policies. Activities to enhance communication among fisherfolk organizations for exchange of information to improve fisheries governance. Provides a good basis for mainstreaming.	2 & 3
CARPHA and GIZ	CRMCMB	Capacity building activities to develop and/or improve negotiation and organisational skills of coastal community members. Improved protection and rehabilitation of marine protected areas	1 & 3
OECS, JICA	CARIFICO	Support for development and deployment of FADs and updating regulations to include FAD fishing licenses. Serves as the basis for sustainable once climate can be taken into account.	2
Mona Office for Research and	PPCR	Monitoring and evaluation of environmental hazards, public	1 & 3

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
Innovation (MORI) (UWI)		awareness activities and support for data collection and management, as well as understanding climate change model projections. This is essential for promoting policy engagement.	
OECS	RRACC	Support for policies and laws that reduce vulnerability to climate stresses and institutional capacity building activities. Requires further attention to policy cohesion amongst marine initiatives.	3
CCCCC	Coastal Protection for Climate Change Adaptation in the Small Island States in the Caribbean	Improved management of protected areas and reduction of land-based stressors on coastal marine ecosystems. Offers a basis for integrating climate into coastal and fisheries management ridge to reef. More concerted action is required to carry this initiative forward using the best available information for planning.	3
St. Vincent and the Grenadines The C-FISH project (see Table 7) is aiming at strengthening community-based fish sanctuaries by providing resources, training and alternative livelihood opportunities St. Vincent and the Grenadines. In all projects implemented in this country, it is challenging the greater geographic distribution of fisheries among very small islands and territories. Related baseline initiatives not providing co-financing in St. Vincent and the Grenadines are detailed below.			
CANARI	Strengthening Caribbean fisherfolk networks to participate in governance for food security	Activities to enhance communication of fisherfolk organisations for exchange of information, collaboration, and development of consensus on policy for the governance of the fisheries sector. Capacity building activities to develop/or improve business and negotiation skills. Emphasises the economic aspects of fisheries and hence to livelihoods and mainstreaming climate smart policy.	2, 3
CARPHA and GIZ	CRMCMB	Capacity building activities to support MPA managers with improved understanding and skills for improved protection	3

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
		and rehabilitation of marine protected areas. Basis for further policy.	
Mona Office for Research and Innovation (MORI) (UWI)	PPCR	Review and expansion of the National Climate Change Adaptation Policy and training and capacity building for improved data capture, collection, and management, for climate change impact assessments purposes. Connected to climate modelling.	1 & 3
OECS	RRACC	Support for policies and laws to reduce vulnerability to climate stresses and institutional capacity building activities. Supports the development of fisheries policy that incorporates climate.	3
CCCCC	Coastal Protection for Climate Change Adaptation in the Small Island States in the Caribbean	Coral reef restoration activities for rehabilitation of coastal ecosystems; study into the installation of artificial reefs. The enhancement of natural systems is an essential ingredient of conservation measures and climate proofing infrastructure.	2 & 3
Trinidad and Tobago The CRFM project "Implementing the CCFP: Positioning and Engaging Fisherfolk Organizations" (see Table 7) has strengthened the fisherfolk organizations in Trinidad and Tobago. Considerable emphasis has been placed on the ICT enhancement of fisheries management as well as integrated coastal management. However, both ICT and fisheries management need to be further developed. Related baseline initiatives not providing co-financing in Trinidad and Tobago are detailed below.			
Institute of Marine Affairs	Pilot study on integrating climate change adaptation (CCA) into coastal zone management (CZM) in South West Tobago	Review of the legislative, policy and institutional information an capacity arrangements related to CZM and climate change in Trinidad and Tobago; Vulnerability and Risk Assessment in Southwest Tobago based on climate variability and climate change scenarios to gather general information on coastal community vulnerability. Links directly to vulnerability assessment and policy.	1 & 3
Ministry of	Feasibility studies for a	Coastal infrastructural works for	2 & 3

Main Organization	Baseline Initiative (not serving as co-financing) & timeframe	Description of activities in project country linked to component	Related to CC4FISH Project Component
Planning and Sustainable Development (Trinidad and Tobago)	risk-resilient coastal zone management program	beach stabilization; information platform development for the design and monitoring of coastal investments; institutional strengthening of coastal zone management plans including mainstreaming of disaster risk management and climate change. Requires further development.	
Ministry of Tobago Development	Small Watercraft Pilot Project Initiative	Support for improved communication among fisherfolk (75 vessels) while at sea (enabling monitoring the weather supported by new ICT developments) enhancing safety-at-sea.	2
CANARI	Strengthening Caribbean fisherfolk networks to participate in governance for food security	Building capacity of national networks of fisherfolk organisations and their individual members to participate in Caribbean fisheries governance and management at the national and regional levels. Fisherfolk organisations seek integration into the policy domain.	2

II. Initiatives serving as co-financing for the CC4FISH Project

a) Regional level initiatives

Table 7 shows the **co-financing** projects and programmes provided by regional organizations, and their relation to the CC4FISH project components**.**

Table 7:

Co-financing from organizations, projects and programmes present in the Caribbean and their relation to CC4FISH project components

Project/Program Title, Timeframe & Objective	Relation to components 1,2,and 3 of CC4FISH	Project Countries (& participating Organizations)	Co-financing by component in cash and in-kind (**bold** is cash/*italics* in kind)
The Nature Conservancy			
At The Water's Edge (AwE) To building coastal resilience in Grenada,	AWE is implementing national and local vulnerability assessments of	Grenada, and St. Vincent and the Grenadines	Component 1: **50,000**

and St. Vincent and the Grenadines. (2011-2016)	coastal communities to the impacts of climate change. This is complementary to Outcome 1.1 of CC4FISH.		
Climate Resilient Eastern Caribbean Marine Managed Areas Network (ECMMAN) To establish Eastern Caribbean Marine Management Areas (MMA) to improving coastal ecosystem health and livelihood opportunities (2013-2017)	ECMMAN is collecting data and information for vulnerability assessment design and modelling (related to CC4FISH outcome 1.1); is strengthening fisherfolk capacity (linked to CC4FISH Outcome 2.1); and strengthening institutional capacity of the fisheries authorities in development and management of MMAs; and developing, managing and sharing platforms for marine resource and protected area data (related to Outcome 3.1).	All seven CC4FISH countries (and OECS, UNEP SPAW-RAC, CARIBSAVE, CNFO, CRFM, PCI Media Impact)	Component 2: **75,000**
Caribbean Marine Biodiversity Program (CMBP) To promote conservation in high priority areas across the Eastern Caribbean (2014-2019)	CMBP is strengthening marine protected areas and promoting sustainable fisheries in five countries. This is complementary to CC4FISH Outcome 3.1	Grenada, and St. Vincent and the Grenadines	Component 3: **75,000**
CARIBSAVE			
The CARIBSAVE Climate Change Risk Atlas (CCCRA); Climate Change, Coastal Community Enterprises, Adaptation, Resilience and Knowledge project; *-Climate Change Vulnerability, Impact*	The CARIBSAVE initiatives are related to outcome 1.1 of the CC4FISH project	Antigua & Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, St. Vincent & the Grenadines	Component 1: *500,000*

And Adaptation Analysis In The Caribbean Region project; *- Global Islands' Vulnerability Research Adaptation Policy Development research project;* *- The Partnership for Canada- Caribbean Community Climate Change Adaptation research project* The project support building knowledge on climate change vulnerability of coastal communities and develop and implement adaptation capacities and response strategies in the Caribbean (2012-2018)			
The Caribbean Fish Sanctuary Partnership Initiative (C-FISH). To strengthen community-based fish sanctuaries (marine reserves or no-take- zones) in the Caribbean (2014- 2018)	C-FISH is strengthening fisherfolk capacity and developing alternative livelihoods (related to CC4FISH outcome 2.1). As well, it is strengthening of institutional capacity of fisheries authorities in developing and management of fish sanctuaries (related to CC4FISH outcome 3.1)		Component 2: *300,000* Component 3: *200,000*
CERMES			
Regular programme of work for research and development (2015-2020)	CERMES is providing access to climate data from various regional projects (related to the CC4FISH outcome 1.1)	All seven CC4FISH project countries, CERMES University of Southern Mississippi, CRFM, CNFO, WECAFC	Component 1: **69,000** *22,500*
Regular programme	CERMES is offering	CERMES, CRFM,	Component 2:

of work for research and development (2015-2020)	expertise on fisherfolk organizations and designing fisherfolk exchange programs (related to the CC4FISH outcome 2.1)	CNFO, CANARI	*20,000*
Regular programme of work for research and development (2015-2020)	CERMES and WECAFC are contributing to meetings and working groups of the CRFM and WECAFC; video and communication products developed by CERMES; Expertise and research in EAF management planning, co-management and fisheries governance (related to the CC4FISH outcome 3.1)	CERMES, CRFM, WECAFC.	Component 3: **33,000** *60,000*
Regular programme of work for research and development (2015-2020)	CERMES is providing inputs into monitoring processes and information systems for assisting learning (related to the CC4FISH outcome 4.1)	CERMES	Component 4: *7,500*
WECAFC/FAO			
Regular programme of work for research and development (2015-2020)	WECAFC is developing fisheries management plans (based on stock assessments and fisheries statistics compilation), disseminating lessons learnt and supporting knowledge management through regional working group meetings, which is related to the CC4FISH outcome 4.1	All seven CC4FISH project countries, WECAFC	Component 4: **700,000** *700,000*
Regular programme of work for research and development (2015-2020)	WECAFC will additionally support project management (e.g. new studies		Project management cost: **300,000** *300,000*

	carried out), which is related to the CC4FISH outcome 4.1.		
CRFM/CARICOM			
Implementing the e Caribbean Community Common Fisheries Policy (CCCFP): Positioning and Engaging Fisher Folk Organizations (2007-)	CRFM will support the engagement of fisherfolk organizations with policy processes and decision-makers for the implementation of key regional fisheries policies facilitated (related to CC4FISH outcomes 2.1 and 3.1)	To adopt and implement the Draft Agreement Establishing the Caribbean Community Common Fisheries Policy	Component 2: *320,000* Component 3: *80,000*

b) National level co-financing initiatives

Table 8 shows the co-financing projects and programmes initiatives provided by project countries, and their relation to the CC4FISH project components

Table 8:

Co-financing initiatives by government (fisheries and coastal management) authorities at national level and their relation to CC4FISH project components

Programmes and institutions providing co-financing at national level	Description of activities in project country linked to component	Component
Antigua and Barbuda		
Fisheries and Coastal Management Authority. Regular work programmes (on-going).	Coastal, fisheries and environmental authorities have very active but under-financed programmes that include protected areas as refuge for fish, conservation of essential habitat and revision of fisheries laws. Hub of the Caribbean Network of Fisherfolk Organisations (CNFO) that spearheads fish engagement regionally	1, 2, 3
Dominica		
Fisheries and Coastal Management Authority. Regular work programmes (on-going).	Dominica has very thorough fisher training that needs to include more climate and disaster content with planning for adaptation. A track record of climate vulnerability has led to high community and industry interest in climate matters.	1, 2, 3
Grenada		
Fisheries and Coastal Management Authority. Regular work programmes (on-going).	Very active MPA programme needs to be integrated with climate and fisheries as more areas are set aside for conservation. Strong capacity for fisher training and ICT to be built upon.	1, 2, 3
St. Kitts and Nevis		
Fisheries and Coastal Management Authority. Regular work programmes (on-going).	Only recently the fisheries authority received a widened mandate and experimented with introducing the ecosystem approach to fisheries. Provides a good basis for integrated planning and the mainstreaming of climate adaptation into fisheries policies.	1, 2, 3
Saint Lucia		
Fisheries and Coastal Management Authority. Regular work programmes (on-going).	The fisheries cooperatives are particularly strong and active. They work closely with the fisheries authority on climate matters. MPA and community-based management approaches are strong. They require support from additional sources to realise their potential.	1, 2, 3
St. Vincent and the Grenadines		
Fisheries and Coastal Management Authority. Regular work programmes (on-going).	The government agencies work closely with NGOs and fisherfolk organisations. The authorities focused upon ocean governance in recent years. This provides a sound basis for policy formulation.	1, 2, 3
Trinidad and Tobago		
Fisheries and Coastal Management Authority. Regular work programmes (on-going).	This country has one of the most capable fisheries and coastal management institutional arrangements among project countries. There is a strong focus on integrated policy and engaging fisherfolk in governance. However, additional	1, 2, 3

Programmes and institutions providing co-financing at national level	Description of activities in project country linked to component	Component
	resources are required for the sustainability of the several fisheries initiatives and incorporation of climate into the frameworks for adaptation and management.	

c) Remaining barriers to address CC vulnerabilities

Barrier 1: **Insufficient understanding and awareness of climate change vulnerability of the fisheries sector at the regional, national and local level.**

At the local, national and regional level there is insufficient data and information on vulnerability to climate change and impacts on fisheries to adequately inform fisheries policy, planning and management. Vulnerability and adaptation assessments have been carried out by three of the project countries in preparation of their Second National Communications to UNFCCC. Yet these vulnerability assessments have not been conducted specifically on the fisheries sector, and are not comparable across communities or countries to facilitate national or regional fisheries planning. There is inadequate understanding of the root causes of vulnerabilities of fisheries-dependent communities and livelihoods, and of factors influencing their ability to adapt to climate change and variability. It is important to appreciate the multidimensional nature of social-ecological vulnerability and identify relevant vulnerability questions in order to focus the vulnerability assessments, also in view of the fact that root causes of vulnerability may be beyond the scope of either climate change or the fisheries sector. In terms of adaptation, it also to be noted that deficiencies not specific to climate or fisheries, e.g. poverty, may constrain adaptive capacity.

The current fisheries data collection and analysis systems do not support developing such vulnerability assessments at the regional and national levels.. The available fisheries-related models[49] on projections on changes in maximum fish yield by 2050 as a result of climate change are not downscaled to the regional or national level. Beyond vulnerability assessments there is a more general need to integrate information from fisheries and climate models for the Eastern Caribbean.

An example of barriers to be overcome is illustrated by the phenomenal sargassum blooms and coastal stranding in recent years, with the seaweed drifts accumulating up to one metre high on beaches. These events negatively impact fisheries and fishing communities by limiting access to fishing grounds, blocking vessel movement in ports, interfering with fishing gear and damaging vessel motors. Moreover, deposits on reefs may be very harmful for corals. On the other side, the seaweed may also potentially provide protection to juvenile fish in important pelagic fisheries and therefore positively affect fisheries, e.g. for dolphinfish. The large amounts of sargassum are most likely

[49] Such as the global models projecting the maximum potential yield of fisheries by 2050 by Cheung et al. (2010). Large-scale redistribution of maximum fisheries catch potential in the global ocean under climate change. *Global Change Biology*, *16*(1), 24–35.

linked to climate variability and change. To date there are no models to help predict sargassum events and impacts on the crucial pelagic fisheries in the Caribbean. Information from vulnerability assessments and innovative models will need to be disseminated to inform the ecosystem-based management of the fisheries sector in the region.

Barrier 2: **Limited fisherfolk, aquaculturists and coastal community resilience to climate change and variability.**

There are several aspects to the suite of barriers that limit fisherfolk, aquaculturists and coastal community resilience to climate change and variability. For example, the absence or inadequacies of early warning systems, such as for rough sea events or storm surge, constrain reduction of fisherfolk and fisherfolk community vulnerability. Other issues include; a lack of awareness of climate change adaptation measures resulting in inappropriate safety-at-sea training that does not take into account projected climate change. Although Fisheries Divisions in the seven project countries provide safety-at-sea training, many fishers are not properly trained in the use of current life-saving equipment (e.g. emergency beacons, global positioning systems) and technology (e.g. smartphone apps). Few opportunities and mechanisms exist to share and exchange information on adaptive technologies and resilience among fisherfolk.

Another barrier is the insufficient uptake of information and communication technology (ICT) that is becoming available for early warning and safety-at-sea partly because fisherfolk lack access to the available software (apps) that specifically address the fisheries sector. Fisherfolk also have inadequate access to, or understanding of, weather data, and information on adaptation measures for risk reduction and management in fisheries. The Caribbean Network of Fisherfolk Organisations (CNFO) does not have the capacity to offer the needed training (e.g. in ICT; safety-at-sea).

Common weaknesses in relation to fisherfolk organization include: insufficient cooperation among the members that constrains collective action in fisherfolk organizations; limited capacity for training and awareness building; and lack of effectiveness and equity in the participation of fisherfolk organizations in governance decision-making processes, such as engaging in EAF for instance. The marketing and distribution sector lacks quality assurance and seafood safety training which results in postharvest losses and low quality fish that could be avoided through technical advances and innovations. These issues may critically affect the ability to adapt to changing species abundance and composition in commercial fish harvests.

Boat owners and fishers have inadequate access to appropriate and affordable risk reduction tools and measures (e.g. insurance, credit, micro-finance, mitigation training, rapid response arrangements). A major barrier is the inadequacy and high cost of insurance for fisheries enterprises. Small-scale fisherfolk lack the typical collateral that credit providers demand and the specific needs of the fisheries sector make common marine insurance policy coverage unattractive to most stakeholders. A very different approach to fisheries insurance in relation to climate change adaptation is warranted, such as is being developed in 2015 under a Blue Growth initiative by a partnership of the World Bank, US Department of State, FAO/WECAFC, CRFM, CNFO, TNC and the Caribbean Catastrophic Risk Insurance Facility (CCRIF) for implementation in 2016.

The fact that the aquaculture sector is generally only marginally developed in the Eastern Caribbean is also considered as one of the barriers that constrain adaptation to climate variability and change. In the seven countries current aquaculture enterprises are often located in high-risk areas, and there is insufficient understanding about climate change adaptation opportunities in aquaculture management. The limited technical capacity in aquaculture, lack of skilled aquaculturists, low commercial availability of high quality feeds and fingerlings or at high prices only, are adding to these barriers. There is also limited awareness and knowledge of climate proof aquaculture technologies and systems. With investment funding being scarce there is an urgent need to accelerate the diffusion of innovation through demonstration and partnerships.

Barrier 3: **Ineffective mainstreaming of climate change adaptation in fisheries at multi-level fisheries governance.**

Effective governance and enabling policy are necessary to make fisheries more resilient to climate change. However, there are shortcomings in this regard in the region and barriers exist in terms of policy and governance which hinders adaptation:

- There is minimal attention to the Code of Conduct for Responsible Fisheries (CCRF) and other relevant international and regional policy guidance in most countries;
- As the ecosystem approach to fisheries (EAF) is not yet widely practiced in the Region, the interactions among stakeholders need to be considered afresh while mainstreaming CCA and DRM into fisheries and aquaculture;
- Benefits of applying good governance and co-management principles have been widely discussed but there are few success stories in the Region;
- The notion that the key contributor to building adaptive capacity and resilience is good fisheries management has not been institutionalised and hence CCA and DRM are not yet mainstreamed in fisheries management.

These shortcomings need to be urgently addressed to support advances in assessments, technology, capacity development and similar for achievements to be sustained. As a consequence, fishing practices and fisheries management (if any) continue as business-as-usual, while fish stocks are being depleted and ecosystems and biodiversity are becoming increasingly vulnerable to climate change and variability. The capacity of national fisheries administrations to deal with cross-sectoral climate change issues is inadequate. Institutional structures in which the various sectors collaborate are often inadequate or dysfunctional. The capacity within (sub-) regional institutions to effectively guide and oversee the introduction of climate change adaptation strategies into fisheries management is insufficient. Incentives are needed to improve and/or change current management practices in several ways including through partnerships and co-management. The practical examples and lessons learned from fisheries management addressing also climate change adaptation in the region need to be disseminated and incorporated into policy.

d) Additional reasoning

The baseline scenario and 'business as usual' prospect in the seven project countries foresees that the fisheries sector continues to become increasingly vulnerable to climate

change while it is already facing other challenges such as overexploitation and habitat degradation. Overexploitation of inshore stocks would continue with high risk of depletion. The adaptive capacity of fisherfolk, aquaculturists and fisherfolk organizations would remain low and aquaculture development would remain minimal. Climate change would not, or would only marginally, be mainstreamed into multi-level governance.

While various initiatives are already being implemented (see regional and country baseline information above), there is currently not any comprehensive initiative taking the diverse aspects of climate change impacts on the fisheries sector into consideration that makes a real difference in the resilience of fisherfolk, aquaculturists and coastal communities. The CC4FISH project will provide the means necessary to make the required transformation.

Component 1: Understanding and awareness of climate change vulnerability in the fisheries sector.

In order to overcome Barrier 1 (see subsection 1.1.b), Component 1 will support the development of a vulnerability assessment framework that enables comparisons at local, national and regional levels and thus enhance the general understanding of what makes fisherfolk and coastal communities vulnerable and resilient to climate change impacts. Component 1 will support the promotion of standardised methods and data collection across the region, which will facilitate information exchanges and allow for comparisons between countries. Component 1 will also utilize downscaled regional models to assess climate change impacts on fisheries abundance and accessibility as to date no such assessment has been carried out.

Component 1 will further conduct awareness-raising for key stakeholders and the general population by distributing the findings of the vulnerability assessment and models at regional, national and local level. This knowledge will help inform policy makers in the process of adequate climate change adaptation of the fisheries sector and include possible incentives to promote wider adoption of climate change adaptation measures throughout the Wider Caribbean region and beyond. Accordingly, a platform for effective climate change adaptation practices in the Eastern Caribbean will be created, building on and strengthening existing structures and processes with particular regard to stakeholder participation. The project will build on and strengthen existing regional collaboration leading to improved understanding of vulnerability to climate change in the fisheries sector and shared strategies for addressing issues.

The regional partners CARIBSAVE, CERMES, FAO and TNC will provide an amount of USD 522 500 (in-kind) and USD 119 000 (in cash), mainly for the support and technical supervision of vulnerability assessment development; and modelling assessments.

The national Fisheries Divisions will co-finance an amount of USD 7 873 333 in kind, corresponding to the time of local staff to assist in conducting vulnerability assessments, modelling and supporting awareness-raising for key stakeholders and the general population on the findings from the activities. The national Fisheries Divisions will co-finance an amount of USD 2 970 000 in cash, corresponding to business as usual budgets, equipment and in-country travel of staff as well as hire on consultants.

SCCF additional financing of USD 944 000 for Component 1 will address the regional design and implementation of vulnerability assessments at the local level in selected project sites; development of a model to assess sargassum impacts on dolphinfish and flyingfish fisheries; risk assessment modelling for pelagic (and demersal) fisheries with climate change and variability; and design and implementation of a communication strategy to widely disseminate the findings.

Component 2: Increasing fisherfolk, aquaculturists and coastal community resilience to climate change and variability

In order to overcome Barrier 2 (see subsection 1.1.b), Component 2 will support the design of a training program for individual fisherfolks, fisherfolk organizations and aquaculturists to prepare them for the implementation of climate change adaptation measures and use of adaptive technologies (via courses, workshops and exchange programs). Under component 2 the project will undertake and promote capacity development among key stakeholders. Particular attention will be given to strengthening organizational structures of fishers and fish workers, including women and youth. The capacity and support required to achieve capacity building of fishers, aquaculturists and fisherfolk organizations are not always readily available within the project countries but can be provided through the project. Component 2 will promote the design and implementation of an ICT platform which can serve as an example for the entire region. It will also support the development of business proposals to facilitate full utilization of key commercial and under-utilized species –and help develop alternative livelihood opportunities. It will strengthen early warning systems and disaster preparedness programs. As aquaculture in the region is still underdeveloped this component will also support the rehabilitation of existing aquaculture centres and development of new ones.

The regional partners CARIBSAVE, CERMES, CRFM, FAO and TNC will provide an amount of USD 640 000 (in kind),mainly for the support and technical supervision of training, workshops and exchange programs. They will provide USD 75 000 (cash), mainly for activities under projects related to building resilience of coastal communities.

The national Fisheries Divisions will co-finance an amount of USD 12 618 333 in kind, corresponding to the time of local staff to carry out training, workshops (e.g. on business skills, safety at sea and improving food handling and safety) and develop protocols in terms of early warning systems and DRM protocols. The national Fisheries Divisions will co-finance an amount of USD 5 730 000 in cash corresponding to business as usual budgets, equipment and in-country travel of staff as well as hire on consultants.

SCCF additional financing of USD 2 725 000 for Component 2 will be directed to carry out the training programmes, develop adaptive capacity, develop and implement climate adaptive technology, and develop new aquaculture centres and rehabilitate existing ones.

Component 3. Mainstreaming of climate change adaptation in multi-level fisheries governance

In order to remove Barrier 3 (see sub-section 1.1.1b.) Component 3 aims to strengthen institutional regional and national capacity on mechanisms to implement climate change

adaptation measures; and mainstream climate change adaptation into policies, plans and associated processes. Component 3 will support the development of a framework to integrate EAF, DRM and CCA into fisheries policies at national and regional level and help develop practical organisational capacity for implementing EAF (training, exchange, workshops etc.). The EAF will provide the basis for technical support to ensure an integrated approach to sustainable fisheries management, capacity building, and poverty alleviation in the context of fisheries policies, both at the national and regional levels that incorporate climate change adaptation. The SCCF funding will allow the project to provide regional and global linkages and expertise; this will facilitate the identification and development of appropriate climate change mainstreaming processes, including possible incentives to promote wider adoption of climate change adaptation measures, as well as monitoring of impacts of the measures promoted. This component also supports communication on climate change adaptation and public awareness and training programmes.

The regional partners CARIBSAVE, CERMES, CRFM, and FAO will provide an amount of USD 340 000 (in kind) and USD 108 000 (in cash), mainly for the support and technical supervision of training, workshop and exchange programs.

The national Fisheries Divisions will co-finance an amount of USD 3 498 333 in kind, corresponding to the time of local staff to help implement integrate EAF, DRM and CCA adaptation into the policies at national level, support training, workshops and communication on public awareness. The national Fisheries Divisions will co-finance an amount of USD 1 040 000 in cash corresponding to business as usual budgets, equipment and in-country travel of staff as well as hire on consultants.

SCCF additional financing of USD 978 000 for Component 3 will be directed to carry out a training programme, support integration of EAF, DRM and CCA into policies at the national level and support communication for climate change adaptation and public awareness. SCCF funds will provide additional financing to mainstream adaptation activities in national governments' regular budgets and staff time allocation (detailed in Table 8, Prodoc). At project completion, the 7 countries are expected to have trained government staff that is able to identify, prioritize, implement, monitor and evaluate adaptation strategies in the fisheries sector (see output 3.1.1, Appendix 1 Prodoc). In addition, adaptation strategies will be mainstreamed into national policies and plans of the fisheries sector (see output 3.1.2). Fisheries policies and plans have budget allocations provided by the National Fisheries Agencies, or equivalent, in the seven countries. By the end of the project, fisheries policies and plans will be adaptive and in line with EAF principles in the 7 countries.

Component 4: Project M&E and knowledge management

Further to the three technical components a fourth component has been prepared for project monitoring, evaluation, and systematizing and dissemination of lessons learned that might be useful for future climate change adaptation initiatives in project countries and other SIDS in the Caribbean or elsewhere. Accordingly, Component 4 will support project M&E, and will address the creation and/or improvement of institutional M&E capacities of executing partners.

The implementation of this component will be co-financed by FAO's contribution of USD 1,400,000, of which USD 700,000 is in-kind and USD 700,000 cash. CERMES will provide co-financing of USD 7,500 (in-kind)

SCCF additional financing of USD 553,000 will support through Component 4: M&E of project progress and achievement of targets, monitoring of risk mitigation measures and identification of new measures to address unforeseen risks, progress reports, mid-term and final evaluations, systematization of lessons learned, and preparation of information materials. Once systematized, lessons learned (successes and failures) will be disseminated through regional partners and might be useful for similar projects.

In addition, FAO will provide USD 300,000 (in-kind) and USD 300,000 (in cash) to support the Project Management structure. See details in the Financial Plans, Section 4.3 of this Project Document.

1.1.2 FAO's comparative advantages

Within the overall mandate of FAO to eradicate hunger and malnutrition, to eliminate poverty and to promote sustainable management of natural resources, the FAO Fisheries and Aquaculture Department develops technical guidance, standards and instruments for a wide range of fisheries management and development issues. The Department provides technical inputs to the Committee on Fisheries (COFI), which is presently the only global inter-governmental forum where major international fisheries and aquaculture problems and issues are examined. COFI is also used as a forum in which global agreements and non-binding instruments are negotiated. FAO has developed the CCRF, as well as technical guidelines on EAF and has led the work on EAF implementation. FAO has also produced codes of practice and standards related to product safety and responsible trade, including guidelines for the eco-labelling of fish and fishery products. A series of instruments and guidelines were also developed on safety at sea, including training manuals and practical advice for fish workers. FAO provides these normative functions but also implements national, regional and international fisheries and climate change adaptation projects world-wide. In terms of activities in the field of climate change adaptation, FAO has been instrumental in the establishment of the Global Partnership for Climate, Fisheries and Aquaculture (PaCFA), which is a voluntary global level initiative among more than 20 international organizations and sector bodies with a common concern for climate change interactions with global waters and living resources and their social and economic consequences. Currently, FAO is supporting as GEF agency the development and implementation of more than 10 climate change adaptation projects in the fisheries sector in different regions and countries. The FAO studies and reports on climate change adaptation in fisheries and aquaculture are highly regarded by the sector stakeholders world-wide.

FAO has a presence in each of the countries of the project, through FAO Representations and national correspondents. Moreover, FAO has a Subregional Office in Barbados (FAO-SLC), which covers all project countries and has specific technical fisheries and aquaculture expertise in-house available in support of project implementation, fisheries management, aquaculture development and policy and planning.

In addition, FAO-SLC hosts the WECAFC Secretariat and has the necessary human resources and equipment inputs available to ensure smooth implementation of the project and delivery of project results, including the submission of project progress and financial reports to GEF.

With regard to regional approaches, FAO has a long history of support to the creation, assisting and strengthening of RFBs and Regional Fisheries Management Organizations. The WECAFC is an example of an active RFB which caters to all its members in the Caribbean region. Moreover, FAO has been providing technical support to GEF Large Marine Ecosystem (LME) programmes, including the CLME project, and will continue to do so. Hence, FAO has an acknowledged global mandate with competences in regard to the technical and developmental areas covered by the CC4FISH project. Gender equality is also central to FAO's mandate to achieve food security for all by raising levels of nutrition, improving agricultural and fisheries productivity and natural resource management, and improving the lives of rural populations. FAO has launched the Policy on Gender Equality: Attaining Food Security Goals in Agriculture and Rural Development to attain this goal.

1.1.3 Participants and other stakeholders

The CC4FISH projects includes seven countries in the Eastern Caribbean region – Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago and a number of regional and international partner organizations (CRFM, CANARI, CARIBSAVE, CNFO, TNC, and UWI). Table9 presents the various public institutions involved in the seven project countries.

Table 9: Government stakeholders at the national level in the seven project countries

Stakeholders	Interests/Roles/Responsibilities in the project
Government	
National fisheries authorities 1. Fisheries Division of the Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs , **Antigua and Barbuda** 2. Fisheries Division of the Ministry of Agriculture and Fisheries, **Dominica** 3. Fisheries Division of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment, **Grenada** 4. Department of Marine Resources of the Ministry of Agriculture, Marine Resources and Cooperatives, **St Kitts And Nevis** 5. Department of Fisheries of the Ministry of Agriculture, Food Production, Fisheries, Co-	National Fisheries Authority and Operational Focal Point to GEF. Co-financier. Overall coordination between project objective, outcomes and institutional agreements, and policies and plans of the Government of the seven project countries, with regard to the marine sector. Data management, analysis, policy, planning, implementation and education. Executing partners of the project.

operation and Rural Development, **Saint Lucia** 6. Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry, **St Vincent And The Grenadines** 7. Fisheries Division of Ministry of Land and Marine Resources, **Trinidad and Tobago** *1.*	
National Departments of Emergency Management, or Office of Disaster Preparedness or Management (variation in nomenclature)	Disaster Risk Management and Climate Change Adaptation capabilities with partners and coordinating response and recovery operations in order to protect the people, environment and economy and ensure a disaster resilient fisheries sector Component 2) can assist in developing early warning systems; disaster risk protocols, drills and training Component 3) can assist in incorporating DRM into national fisheries policies
Ministries of Environment (unless already included under Ministries mentioned above)	Is the agency in charge of planning, promotion, co-ordination and overseeing the implementation of environmental policies and programmes (including integration of fisheries sector; Marine Protected Areas development and implementation). Component 3) can assist in incorporating EAF, CCA and DRM in fisheries policies and integrating climate change in environmental policies
Defence Force/Coast Guards	The Coast Guard's role is search and rescue. Component 2) Support safety-at-sea training and implementation; support and involvement in early warning systems and disaster risk training
Local government and village councils	Local Governments can help support Component 1) collect data for vulnerability assessments and awareness building Component 2) local training in business skills; safety-at-sea; alternative livelihoods. Component 3) public outreach and awareness programs

In addition to the public agencies a variety of stakeholders from academia, civil society, NGOs and private parties will be involved in this project. Collaboration will not only be desirable but necessary, and linkages with many stakeholders have already been established.

Table 10: Non-governmental stakeholders in involved in the Project

Research institutes

University of the West Indies - CERMES	The Centre for Resource Management and Environmental Studies (CERMES) promotes and facilitates sustainable development in the Caribbean and beyond. Regional project partner and will provide research and technical support. Component 1) -Design and implementation of vulnerability assessments at the regional, national and local level; development model to assess sargassum impacts on the dolphin fish and flying fish populations; communication Component 2) -Facilitating exchanges by fisherfolk to countries/communities in which EAF, CCA and DRM/co-management Component 3) - Assistance to develop a framework to integrate EAF, DRM and CCA into the policies at regional level and the national level and support of mainstreaming these topics into fisheries management; and public awareness and outreach Project partner
University of the West Indies - CIRP	The Department of Electrical and Computer Engineering, Saint Augustine, Trinidad & Tobago has developed the *mFisheries* mobile application. This is a suite of mobile applications developed for persons involved in fisheries such as fisherfolk, processors, retailers, wholesalers and consumers. *mFisheries* aims to develop capacity in the Caribbean to pursue opportunities arising from the provision of innovative mobile-enabled services for its poor communities, and to provide related empirical data and analysis to inform Caribbean policy and regulation. Will support Mfisheries development and implementation in component 2.
Caribbean Institute for Meteorology and Hydrology (CIMH)	CIMH aims to assist in improving and developing the Meteorological and Hydrological Services and creating the awareness of the benefits these services for the economic well-being of the CIMH member states. Component 1 and 2) The DEWETRA platform is a real-time integrated system for hydro-meteorological forecasting, monitoring and prevention. This system helps to up-to-date and reliable risk scenarios. Their data on e.g. flooding vulnerability of coastal zones in the Caribbean region and the component in DEWETRA called 'wave watch' can support vulnerability assessments, climate modelling and support early warning system development
State/community colleges	Local research institutes: Component 1 and 3) help carry out vulnerability assessments and data analysis; support communication on vulnerability assessment for adaptation and public awareness and training programmes
International and Regional Cooperation	
Food and Agriculture Organization (FAO)	GEF Project Implementing Agency. Provision of technical assistance on fisheries planning, climate change adaptation and sustainable management of natural resources, rural and coastal community development, , sustainable aquaculture and fishery production. Support of methodologies according to international standards and best-practices. Support and monitoring project implementation.
Western Central Atlantic Fishery Commission (WECAFC)	Regional fishery commission established under FAO. Provision of technical and policy advice on fisheries and aquaculture as well as fisheries governance. Regional project partner. Can support in the various components of the project, but specifically in Component 3) Harmonization of fisheries policies, management and regulations in the region, and dissemination of results of the project

	throughout the region.
Caribbean Regional Fisheries Mechanism (CRFM)	Regional organization that promotes and facilitates responsible utilization of the region's fisheries and other aquatic resources. Regional project partner. In this project CRFM will provide technical support for Component 2) Development of business proposals to facilitate full utilization of key commercial and under-utilized species Component 3) development of a protocol for integration DRM and CCA into the CCCFP
Caribbean Network of Fisherfolk Organisations (CNFO)	CNFO aims to improve the quality of life for fisherfolk and developing a sustainable and profitable industry through networking, representation and capacity building. Project partner. Component 2) support and involvement in training and capacity building activities and exchange programs.
Caribbean Community Climate Change Centre (CCCCC)	The CCCCC coordinates the CARICOM response to climate change. Can support with supply of data and technical expertise for all components.
Caribbean Disaster Emergency Management Agency (CDEMA)	CDEMA is the leading disaster risk management organization within CARICOM. It seeks to reduce the risk and loss associated with natural and technological hazards and the effects of climate change to enhance regional sustainable development. Can support all components with data on vulnerability of disaster risks, support development of Disaster Risk Management and Risk Reduction strategies; and support the mainstreaming of DRM into national fisheries policies
Private sector	
Fish processing companies (retailing and exporting)	They represent the national level producers (mainly small-scale and medium scale producers). They will participate in Component 2)development of business proposals to facilitate full utilization of key commercial and under-utilized species ; improvement of post-harvesting processing; marketing of aquaculture
Aquaculture companies	They represent the national level producers. Can support component 2) rehabilitation of existing aquaculture centres and new aquaculture centres established.
Grassroots / resource user/ civil society organizations	
Local environmental NGOs, other NGOs, CBOs	Local NGOs in relation to the fisheries sector in the seven project countries are dedicated to awareness raising processes, organization and participation for community self-management and environmental protection; and education. Support to all Project components with information exchange and implementation.
Fisherfolk organizations	Fisherfolk organisations are collectives that aim to improve the livelihoods and well-being of fisherfolk (men and women), seek to engage in decision making in fisheries management (at the national and international level); and educate fisherfolk. Fisherfolk organizations (at local, national and regional levels) will be involved in all project components with information exchange; capacity building activities and participation in fisheries planning, decision-making and management.
International and regional NGOs	
The Nature Conservancy (TNC)	Leading international NGO aimed at conserving the lands and waters globally. It manages programs of conservation of natural and cultural heritage, conservation of marine ecosystems in the Caribbean, and participation and environmental education. Project partner. Through its work on vulnerability assessments in the region and marine conservation the organization will be actively contributing to component 1 and

	component 2.
CARIBSAVE partnership	International NGOs focused on sustainable development and climate change. Through its work on vulnerability assessments in the region and work on policies and practices the organization participates in all three components. Project partner.
Caribbean Natural Resources Institute (CANARI)	The organization promoting and facilitates equitable participation and effective collaboration in the management of natural resources in the Caribbean region. The organization has extensive experience in capacity building of fisherfolk organizations; and strengthening of national policies. CANARI will participate in components 2 and 3

1.1.4 Lessons learned from past and related work

Experience in the project countries, by CRFM, WECAFC and others indicate the need for increased participation of fishers and other stakeholders in planning and implementation of appropriate management measures. The CC4FISH project will ensure a high level of participation of fisherfolk and fisherfolk organizations and capacity building by means of training in business skills, technology transfer, information sharing and exchange programs. Principles of the EAF will be applied in the project cycle, from design, formulation, implementation to evaluation of management plans. The approach has proven to be very successful in those circumstances where it was adopted by Fisheries Divisions, CNFO, WECAFC and CRFM. The CC4FISH project also creates broader links with fisheries livelihood by improving processing facilities and providing good food safety training which results in less post-harvest losses and improved livelihoods of processing workers, mostly women. The CC4FISH also has a very strong awareness building component and specifically addresses the enhanced dissemination of results of vulnerability assessments, the modelling assessments as well as climate change impacts on the marine sector. These results will not only be disseminated at the policy and academic level but will also address the larger public. Implementation of appropriate management measures will be addressed through the regional and national level assistance to develop a framework to integrate EAF, DRM and CCA into the policies at national level. The existing frameworks of CRFM and WECAFC can be essential tools in these activities, as has been learned from past practices and experiences under the CLME project and other regional initiatives.

Lessons have also been learned from the *At the Water's Edge* project (AWE) and the *Eastern Caribbean Marine Managed Areas Network* project (ECMMAN) and TNC's approach in terms of vulnerability assessments and livelihoods diversification, which will be followed and adjusted where needed in project implementation. (Sub) Regional level experience and transfer of knowledge will be brought in through existing partnerships between the CARICOM institutions.

The joint collaborative work by regional and international agencies and the Caribbean countries on the FAO/CRFM/WECAFC/CDEMA/CCCCC "*Strategy and Action Plan for disaster risk management and climate change adaptation in fisheries and aquaculture in the CARICOM region"* demonstrated the comparative advantages of each of the partners, increased understanding between partners and led to joint development of projects and activities. The (semi-formal) partnership approach will be followed as much as possible to facilitate collaboration without the need for formal protocols, increasing efficiency and focus on results.

1.1.5 Links to national development goals, strategies, plans, policy and legislation, SCCF and FAO's Strategic Objectives

a) Alignment national development goals and policies

The project is consistent with the national communications of the partner countries, which all mention the vulnerability of their fisheries sector and fishing communities to the projected impacts of climate change. Particular mention is made of the urgent need to address climate related risk reduction activities. At the level of Fisheries and aquaculture legal and policy frameworks, however, in the seven project countries the situation has not become institutionalized. Either climate change is not referred to in fisheries policies; or climate change is incorporated but only to a limited extent; or when is has been referred to the fisheries policy has not yet been ratified and still only exists in draft form.

Antigua and Barbuda's Second National Communication on Climate Change (2009) lists the fisheries sector among its priority areas for intervention with a separate chapter in the document The project is in line with the priorities for adaptation and risk reduction and will address many of the fisheries sector and climate change adaptation related research gaps identified in this 2nd national communication. The project will enhance the current strategy of the Fisheries Division to enhance resilience of the fisheries sector to climate change by means of capacity building of the FD and support the establishment of MPAs. In the Fisheries Act of 2006 and the Fisheries Regulations 2013 climate change is not mentioned.

Dominica's Second National Communication on Climate Change (2012) contains a separate paragraph on Fisheries Vulnerability and Adaptation to Climate Change. Recommendations for action include: Measures for enhancing the sustainability of fisheries ecosystems, strengthening the capacity of fishers to meet the challenges presented by climate change and to promote international action to reduce climate change impacts on the atmosphere and oceans. As such the project will significantly contribute to addressing these recommendations. The project will also contribute to the implementation of the Agricultural Disaster Risk Management Plan and Plan of Action (2012) of Dominica**.** A 25- year Fisheries and Aquaculture Policy was finalized in October 2012 but has not yet been ratified by government. Other national policies that complement the Fisheries Policy include the "National Policy for the Agriculture-Environment System 2007-2025" and the draft "Food and Nutrition Security Policy-Commonwealth of Dominica (Nov 2013)" all of which incorporates the impact of climate change and adaptation measures.

Grenada's Initial Communication to the UNFCCC (2000) recognizes that very limited information is available on climate change impacts on fisheries and that further research is needed. While identifying the fact that most likely the demersal fisheries of Grenada will be negatively affected by climate change, there are no specific strategies to follow for climate change adaptation in the fisheries sector identified in the report. The current project is however consistent with the Governments' priorities. Climate change is not addressed in the current fisheries legislation in Grenada Fisheries Act #15, 1986. The current proposed Grenada Fisheries Policy does refer to climate change in the guiding principles section in relation to the impacts that need to be considered and in the context of the Regional and International Priorities. The final draft Coastal Zone Policy

for Grenada (2015) however is more outspoken on the needs to address climate change in coastal communities.

St. Kitts-Nevis Initial National Communication (2001) refers to the importance of fisheries management for the maintenance of habitats and aquatic biodiversity of coastal reefs ecosystems. The communication recognizes that the fisheries sector in St Kitts and Nevis is vulnerable to climate change impacts. It is largely artisanal and exploits near-shore fisheries, including lobster and conch for local and export markets and for livelihood and employment and food security. These fisheries resources are recognized as to be likely impacted by climate change. The potential negative impacts will occur on the principal fisheries habitats such as mangroves and coral reefs as a result of increasing sea temperatures, shifts in tidal patterns, intensified hurricane activity and sea-level rise putting extra strain on fisheries. The Fisheries Ac**t** (1984) and the Fisheries Regulations (1995) provides the legal authority for management and development of fisheries in SKN. These do not incorporate reference to climate change. Currently (2015) the act is being reviewed and policies are expected to follow in 2016.

In **Saint Lucia** the Second National Communication on Climate Change (2012) reports on the damage done to the sector by various hurricanes and storms, recognizes reefs are vulnerable, identifies a need for alternative technology development in the sector to address climate change, recognizes the limited technical capacity to deal with climate change adaptation in the sector and proposes interventions in the field of research, capacity building, awareness raising, institutional strengthening etc. This project is therefore fully in-line with this recent 2nd communication and its priorities. Saint Lucia National Climate Change Policy and Adaptation Plan (2003) (part on coastal and marine resources) recognizes reefs are very vulnerable and sea level rise a great risk, yet this is still a draft document. In the *Coastal Zone Management Plan*, the *Draft Fisheries Management Plan*, and the *Fisheries Act* no specific mention is made to climate change issues and climate change impacts. However, as the actions proposed in these documents are all geared to expand the resilience of the marine ecosystems and infrastructures to weather extremes and climate related disasters this project is in line with the national strategies

St. Vincent and the Grenadines Initial National Communication (2001) recognizes that the fisheries sector, being the second largest source of employment in the Grenadines, could suffer from climatic variability and changes. It further notes that fisheries resources face serious threats from climate-change-associated impacts. Sea-level rise and increased ocean temperatures coupled with marine pollution will have substantial impact on the coral-reef system, mangroves, and seagrass beds, which are the major nurseries of the fishing industry. The overarching legislation governing the Fisheries Division is the Fisheries Act of 1986. However, this act does not address climatic issues and the Draft 2004 Climate Change Policy which speaks to adaptation in the fisheries sector for sustainability of fisheries resources was never submitted to the Cabinet of ministers for endorsement or approval.

The Initial National communication of ***Trinidad and Tobago*** (2001) gives attention to the impact of hurricanes and floods on the coastal areas and presents various scenarios for potential climate change impacts on the economy. The fisheries sector is listed among the coastal and marine resources that are very vulnerable to climate change and climate variability and the role of the sector for food security is emphasized. The second

communication of Trinidad and Tobago to the UNFCCC makes note of the vulnerability of the marine and coastal resources to the impacts of climate change, although the fisheries sector itself is not specifically mentioned. The current Draft Fisheries Management Policy for the Republic of Trinidad and Tobago does not address the issue of climate change. In like manner, the current Draft Trawl Management Plan does not refer to climate change.

b) Alignment with SCCF strategies

All project countries are eligible for SCCF funding. The project has been endorsed by the GEF Operational Focal Points, on behalf of the governments. The seven project countries are all non-Annex I parties. This project is consistent with the SCCF eligibility criteria, because it addresses the priorities identified in preparation of the First (FNC) and Second National Communications (SNC) to the UNFCCC (see section a) above). These recognize the importance of the fisheries sector to food security and livelihoods and employment as well as the vulnerability of the fisheries sector to climate change. This Project proposal is consistent with SCCF criteria because it is cost-efficient and builds on national and regional strategies for climate change adaptation.

The CC4FISH project is at the heart of the GEF Special Climate Change Fund's (SCCF) mandate. Addressing adaptation needs of vulnerable Eastern Caribbean countries is urgently needed to address climate change impacts and move towards a more resilient fisheries sector. The project is aligned with all three Climate Change Adaptation objectives of the SCCF.

Component 1 is aligned with the Climate Change Adaptation (CCA) Focal Area Objective 2 (CCA-2): *Strengthen institutional and technical capacities for effective climate change adaptation;* in particular with CCA-2 outcome 2.2 (*Access to improved climate information and early-warning systems enhanced at regional, national, sub-national and local levels);* and CCA-2 outcome 2.1 (*Increased awareness of climate change impacts, vulnerability and adaptation).* CCA Tracking tool indicators #5 and 6 have been incorporated in the Project Framework accordingly (see Appendix 1).

Component 2 is aligned with the CCA Focal Area Objective 1 (CCA-1): *Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change;* in particular with CCA-1 outcome 1.2 (*Livelihoods and sources of income of vulnerable populations diversified and strengthened)*; and CCA-1 outcome 1.3 (*Climate-resilient technologies and practices adopted and scaled up).* CCA Tracking tool indicators #3 and 4 have been incorporated in the Project Framework accordingly (see Appendix 1).

Component 3 is in line with CCA-2 outcome 2.3 (*Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures)*, and with CCA Focal Area Objective 3 (CCA-3): *Integrate climate change adaptation into relevant policies, plans and associates processes,* in particular with outcome 3.2 (*Policies, plans and associated processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures).* CCA Tracking tool indicators #10 and 12 have been incorporated in the Project Framework accordingly (Appendix 1). Component 4 is aligned with CCA-3 as well.

c) Alignment with FAO Strategic Framework and Objectives

This project is aligned and builds on to the following FAO Strategic Framework and Objectives:

SO1: Help eliminate hunger, food insecurity and malnutrition. This project will help eliminate hunger by supporting policies and political commitments to this end by improving long-term food security through improved sustainable fishing practices, aquaculture development, decreasing post-harvest losses and by introducing climate change adaptive fishing gears;

SO2: sustainable provision of goods and services from agriculture, forestry and fisheries. This project will support SO2 by contributing to fisheries productive capacity, ensuring a more productive and sustainable sector by addressing unsustainable fishing practices through EAF and at the same time promoting adaptation technologies. International and regional best practices will be introduced and adoption and implementation of international standards will be promoted.

SO4: inclusive and efficient agricultural and food systems. This project will promote inclusive value chains for fishery products by introducing or strengthening co-management arrangements, strengthening the capacity of fisherfolk, aquaculturists and fisherfolk organizations, and supporting the implementation of EAF principles.

SO5: increase the resilience of livelihoods to threats and crises. This project will increase the resilience of livelihoods in relation to climate change and variation, increasing the capacity to cope with disasters by enhancing early warning systems; improving Disaster Risk Preparedness programmes; and improved safety-at-sea (training and equipment) of fisherfolk.

Likewise the project is consistent with regional priorities for Latin America and the Caribbean, aligning with the priority area *Climate change and environmental sustainability* [provide assistance to governments to] strengthen national programs for sustainable management of natural resources, the reduction of agro-climatic risks, mitigation of emissions and adaptation of agriculture sector to climate change (including fisheries) in the new context of low-carbon development[50].

[50] See *Areas of Priority Actions for Latin America and the Caribbean for the Following Biennium (2014–2015), taking into account the summary of recommendations of regional technical commissions*, 32va FAO Regional Conference for Latin America and the Caribbean, Argentina, 2012.
Source: http://www.fao.org/docrep/meeting/024/md240e.pdf

SECTION 2 – PROJECT FRAMEWORK AND EXPECTED RESULTS

2.1 PROJECT STRATEGY

In keeping with international best practice, and to be consistent with the project objective, the project will be grounded in the CCRF (see box 1) and its principles that incorporate the entire fisheries value chain, aquaculture and related activities. The implementation of the project activities will be guided by the principles of EAF, with an important focus on co-management, and will be in line with the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries.

Box 1: Code of Conduct for Responsible Fisheries

More than 170 Members of the Food and Agriculture Organization of the United Nations (FAO) endorsed the Code of Conduct for Responsible Fisheries (CCRF) in 1995. The Code is voluntary rather than mandatory. The Code provides principles and standards applicable to the conservation, management and development of all fisheries. It also covers the capture, processing and trade of fish and fishery products, fishing operations, aquaculture, fisheries research and the integration of fisheries into coastal area management. Following the CCRF a range of international plans of action (IPOAs) for addressing Illegal, Unreported and Unregulated fishing (IUU), shark management, fleet capacity and seabirds were developed, as well as international guidelines for deep sea fishing and bycatch management. Technical guidelines were also developed in support of implementation of the CCRF, such as those on EAF.

Source: http://www.fao.org/docrep/013/i1900e/i1900e.pdf

The EAF (see box 2) will be promoted as the basis for improved fisheries management consistent with fisheries being social-ecological systems. As such, the EAF and this project comprehensively address bio-physical (e.g. ecological), socio-economic (e.g. livelihood) and governance (e.g. institutional) aspects of the fisheries system.

Box 2: The ecosystem approach to fisheries (EAF)

The EAF is an approach to fisheries management and development that strives to balance diverse societal objectives by taking into account knowledge and uncertainties regarding biotic, abiotic and human components of ecosystems and their interactions, and by applying an integrated approach to fisheries within ecologically meaningful boundaries. The purpose of EAF is to plan, develop and manage fisheries in a manner that addresses the multiple needs and desires of societies, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by marine ecosystems. Some key elements in EAF are:

- Decentralize decision and action to the lowest appropriate level, while recognizing that there must also be mechanisms to ensure that management decisions and actions are consistent and coordinated at the higher levels required by EAF.
- Identify the fishery or fisheries to be addressed in each case and the geographic area to be addressed (matching fisheries management system boundaries with ecosystem boundaries).
- Establish appropriate, explicit and enforceable rights to ecosystems resources. Under EAF it needs to be recognized that access rights systems will frequently need to encompass other uses in addition to harvesting target resources.
- Establish effective conflict resolution and enforcement mechanisms.
- Recognize and identify the various direct and indirect uses and users of the ecosystem and involve all stakeholders in knowledge-sharing, decision-making and management.
- Translate the high-level policy goals for EAF into transparent and comprehensive

operational objectives.

- Set management objectives for the short and long term and establish indicators and reference points for the agreed operational objectives in order to provide a framework for monitoring management performance.
- Consider transboundary impacts of fisheries on adjacent or other ecosystems.
- Governance for EAF should ensure both human and ecosystem well-being and equitable allocation of benefits.
- Understand and manage ecosystems in an economic context, including management of market drivers for overexploitation and incentives for sustainable management of resources.
- Conserve ecosystem biodiversity, structure and functioning, avoid irreversible ecosystem impacts from fisheries and reduce reversible, undesirable impacts (e.g. bycatch and discards).
- Conservation and management decisions for fisheries should be based on the best scientific information available, also taking into account traditional knowledge on the resources.
- Improving knowledge on the structure, components and functioning of the marine ecosystem under consideration, the role of habitat and the biological, physical and oceanographic factors affecting ecosystem stability and resilience; improve the monitoring of by-catch and discards in all fisheries to obtain better knowledge of the amount of fish actually taken.
- Support research and technological development of fishing gear and practices to improve gear selectivity.

Source: FAO. 2003. Fisheries management. 2. The ecosystem approach to fisheries. 2.2. The human dimensions of the ecosystem approach to fisheries. FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 2, Add. 2. Rome, FAO. 88 pp.

Taking into account the features of SIDS, the project will adopt an inclusive and equitable approach with strong stakeholder participation and promotion of co-management (see box 3). This ensures engagement of women and youth, full use of local knowledge in data-deficient situations, partnerships to achieve critical capacity, and flexibility in keeping with adaptation.

Box 3: Co-management

Co-management is typically defined as a partnership arrangement between government and the local community or organizations of resource users, sometimes also connected with agents such as NGOs and research institutions, and other resource stakeholders, to share the responsibility and authority for management of a resource. There are no standardized approaches, but rather a range of arrangements, levels of sharing of responsibility and power, and ways of integration of local management mechanisms and more formalized government systems.

The approach is gaining particular importance in small-scale fisheries, for which delegated management capacity and responsibility, combined with the support of formal legal frameworks and information/decision making systems may offer particular advantages. However, their potential depends on the type of fisheries resource, existing policy and legal environment, local and national support for community-based initiatives, and the capacities of various partners. In the context of climate change, co-management is usually taken to mean adaptive collaborative management thereby explicitly incorporating adaptive capacity and institutional learning.

Source: http://www.fao.org/fishery/topic/16625/en

Consistent with the nature of the fisheries in the countries, the project will address sustainable management, livelihoods, value chains, gender equality, disaster risks, climate change, policy coherence, information communication and capacity development in the context of the recent Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (SSF) (see box 4) that covers these topics.

Box 4: FAO Voluntary Guidelines For Securing Sustainable Small-Scale Fisheries In The Context Of Food Security And Poverty Eradication
The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF Guidelines) is the first internationally agreed instrument dedicated entirely to the small-scale fisheries sector. The SSF Guidelines, developed as a complement to the 1995 FAO CCRF, were adopted by the FAO Committee on Fisheries (COFI) in 2014. Fisherfolk organizations and NGOs played important roles in their development and this is expected to continue into the implementation phase that recently commenced. *These guidelines are available at: http://www.fao.org/3/a-i4356e.pdf*

The major regional guidance is the CCCFP that provides an enabling policy environment supportive of the project objective. The CCCFP was adopted by CARICOM's COTED in October 2014[51]. The policy incorporates the CCRF and EAF in its guiding principles (see 1.1.1c for further details). The CCCFP is in the early stages of implementation designed to engage a wide range of stakeholders.

As described in section 1.1, this project is based on the regional demand for action set out in the FAO/CRFM/WECAFC/CDEMA/CCCCC "Strategy and Action Plan for disaster risk management and climate change adaptation in fisheries and aquaculture in the CARICOM region". This strategy builds on the CARICOM Liliendaal Declaration on Climate Change and Development (that articulates key climate change related interests and aims of CARICOM member states) and the CDM Strategy and Programming Framework 2014-2024 of CDEMA that outlines the regional policy for addressing disaster risks. Based on the Liliendaal Declaration the Implementation Plan (IP) for the Regional Framework was developed entitled *Delivering transformational change 2011–21.* This incorporates several global and regional instruments concerning climate change and variability. In the IP it is stated that adaptation and capacity-building must be prioritized and a formal and well-financed framework established within and outside the UNFCCC to address the immediate and urgent, as well as long-term, adaptation needs of vulnerable countries, particularly SIDS.

2.2 PROJECT OBJECTIVES

The **Project Objective** is:

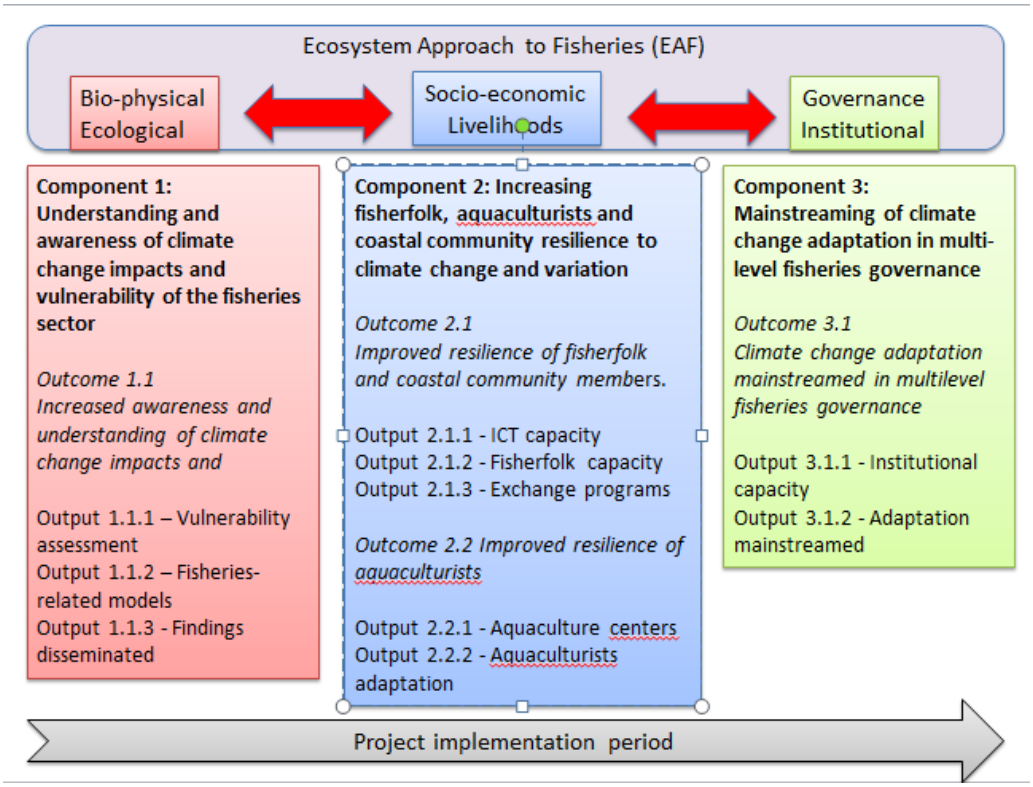
To increase resilience and reduce vulnerability to climate change impacts in the eastern Caribbean fisheries sector, through introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists.

Consistent with results-based management, this project will attain the objective through components that are designed to achieve specific intermediary outputs and outcomes from the linked activities to be undertaken. This theory of change is

[51] The CCCFP can be downloaded from: http://tinyurl.com/dowloadcccfp

summarised to show the main elements and feedback (Figure 7) based on EAF. The process is iterative and dynamic rather than linear and static, but simplified for the purpose of illustration and communication.

Figure 7 : CC4FSH Project framework



The three components of the project are aligned with the major dimensions of EAF in terms of their primary focus. There is a logical sequence to the activities as the project progresses. The fundamental requirement is first for the biophysical information and ecological modelling that allows vulnerability to be assessed. There is then a clear link between the vulnerability context and the livelihoods and socio-economics of the fisheries and aquaculture systems in the islands. The emphasis is on developing capacities for adaptation, contributing to more sustainable livelihoods. However, the institutional or governance domain has to provide an enabling environment for adaptation and self-organization to take place. These are features of co-management which, if successful, will ensure that fisheries and aquaculture resources are managed sustainably. There are clearly several feedback loops contained in the above, but generally the project takes the approach of understanding climate change vulnerabilities and impacts, then developing the capacity to adapt, assisted by institutionalisation through an enabling policy that mainstreams climate change adaptation into fisheries and aquaculture.

2.3 EXPECTED PROJECT OUTCOMES

The achievements expected by the project in the longer term are expressed in the following end-of-project outcome indicators (see also the Results Matrix in APPENDIX 1):

For the overall project indicator AMAT[52] 1 is used: Number of direct beneficiaries: 2 800 people with decreased vulnerability (40 percent female)

Outcome 1.1: Increased awareness and understanding of climate change impacts and vulnerability

Outcome 1.1 will be achieved in the fisheries sector in the seven project countries. It will include the development of one downscaled model to assess the abundance of sargassum seaweed in relation to climate change and the consequent impacts of high sargassum abundance on key fish species; and creating awareness among men, women and local institutions (direct and indirect beneficiaries) on the findings from climate change vulnerability assessments and model outputs.

The vulnerability assessments will be carried out in at least Grenada, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines and Trinidad and Tobago as shown in the work plan (Appendix 2, Prodoc). This preliminary choice is based on the fact these project countries have set aside funds in their national budgets within the CC4FISH project for this activity. In addition, there are also funds at the regional level to develop, test and implement vulnerability assessments in a number of countries. The expectation is there will be a variety among the countries in terms of the scale of vulnerability assessments. The exact number of countries and the scale of vulnerability assessments will therefore be determined during the inception phase of the project.

Outcome 1.1. will be monitored by the following AMAT climate change tracking tool indicators:

Indicator AMAT 6: Risk and vulnerability assessments, and other relevant scientific and technical assessments carried out and updated.

> Target: A regional framework for assessing climate change vulnerability of the fisheries sector at the local level will be developed; vulnerability assessments will be carried out at the local level in five countries to test the framework and provide outputs suitable for incorporation into climate-smart fisheries management plans.

Indicator AMAT 5: Public awareness activities carried out and population reached.

> Target: 1 500 people will have an increased awareness of climate change impacts on the fisheries sector and possible adaptation practices.

Outcome 2.1: **Improved resilience of fisherfolk and fisherfolk organizations**

Outcome 2.1 will introduce adaptation measures and will support capacity building to improve the resilience of 5 600 fisherfolk and coastal community members.

Indicator AMAT 4: Extent of adoption of climate-resilient technologies/practices.

> Target: 1 400 people will adopt adaptation technologies (men and women).

[52] Adaptation Monitoring and Assessment Tool (AMAT). The fourteen tracking tools designed by the GEF can be found at https://www.thegef.org/gef/tracking_tool_LDCF_SCCF

Indicator AMAT 3: Population benefiting from adoption of diversified, climate resilient livelihood options.

> Target: 4200 people (40 percent women) will benefit from adoption of diversified, climate livelihood options by means of adaptation measures; alternative livelihoods and capacity building.

Outcome 2.2: Improved resilience of aquaculturists and their organizations.

Outcome 2.2 will support the introduction of adaptation measures and capacity building to improve resilience of aquaculturists.

Indicator AMAT 4: Population benefiting from adoption of diversified, climate resilient livelihood options.

> Target: 300 people will benefit through rehabilitation of existing and establishing of new aquaculture centres and capacity building activities.

Outcome 3.1: **Climate change adaptation mainstreamed in multilevel fisheries governance**

This outcome will be achieved by improving capacity of national institutions to identify, prioritize, implement, monitor, evaluate adaptation strategies and measures; and by strengthening national policies in plans to identify, prioritize and integrate adaptation strategies and measures in fisheries management.

Indicator AMAT 10: Capacities or regional, national and sub-national institutions to identify, prioritize, implement, monitor, evaluate adaptation strategies and measures.

> Target: The capacities of five (5) national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies is improved on five points. (Baseline: sum of current capacity to identify, prioritize, monitor, and evaluate adaptation strategies and measures of each institution in five[53] project countries is seven).[54]

Indicator AMAT 12: Regional, national and sector-wide policies, plans and processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures.

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[53] The objective of improving five institutions does not imply the two countries not involved in this activity or do no need to have their capacity enhanced but it would go beyond the scope of this project to address the institutions of all seven project countries in this activity.

[54] The score of seven for each country is based a scoring methodology that considers the following five criteria (stated as questions): (a) Does the institution have access to and does it make use of climate information in decision-making?; (b) Are climate change risks as well as appropriate adaptation strategies and measures integrated into relevant institutional policies, processes and procedures?; (c) Does the institution have adequate resources to implement such policies, processes and procedures?; (d) Are there clear roles and responsibilities within the institution, and effective partnerships outside the institution to address adaptation?; (e) Is the institution equipped to monitor, evaluate and learn from its adaptation actions? See further 'Adaptation Monitoring and Assessment Tool (AMAT)' The fourteen tracking tools designed by the GEF can be found at https://www.thegef.org/gef/tracking_tool_LDCF_SCCF. Maximum score is 10. We have assessed five countries at a=1, b=1 , c=1, d=2, e=2,

Target: National policies and plans to identify, prioritize and integrate adaptation strategies and measures in five (5) countries are strengthened with five points. (Baseline: the national policies of five countries to identify, prioritize and integrate adaptation strategies and measures is measured at two).[55]

Outcome 4.1: **Project implemented. Lessons learned and best practices have been documented and disseminated.**

Indicators: Project targets achieved. Project evaluated.

2.4 OUTPUTS AND ACTIVITIES

In order to achieve the objectives and outcomes detailed in section 2.3, the project is structured into four components with their respective outputs (as described below). The activities per country will vary depending on the barriers they found most pressing in their respective countries and the objective of the regional activities. The activities to be implemented in the project countries were identified, discussed and agreed in national stakeholder consultation workshops. Project components and expected outputs, GEF/SCCF funding and co-financing are detailed below.

Component 1: Understanding and awareness of climate change impacts and vulnerability

The main objective of Component 1 is to assess climate change vulnerability in the fisheries sector at the local level by means of the development of a regional comparable framework; to develop a model that describes fisheries abundance and accessibility; and have the findings thereof disseminated at regional, national and local level to improve understanding and serve as inputs into national fisheries management plans.

Component 1 seeks to generate one outcome (see section 2.3) and three specific outputs:
1.1.1: Assessment of climate change vulnerability in the fisheries sector carried out at local, national and regional level.
1.1.2: Models that describes fish abundance and accessibility developped; and
1.1.3: Findings of vulnerability assessments and models disseminated at regional, national and local level to improve understanding.

Baseline:

- No standardized or harmonized assessment framework is available for climate change vulnerability of the fisheries sector at the local level.

[55] To capture evidence of the degree to which relevant institutional arrangements are in place and effective to lead, coordinate and support the integration of climate change adaptation into relevant policies, plans and associated processed a scoring methodology is in place. This is based on the AMAT tracking tool number 12 (see footnote above). The five criteria used are (stated as questions): (a) Does the policy/ plan identify climate change risks and appropriate adaptation strategies and measures?; (b) Are adaptation strategies and measures prioritized and specified with budget allocations and targets?; (c) Does the policy/ plan assign clear roles and responsibilities for the coordination and implementation of adaptation strategies and measures?; (d) Does the policy/ plan provide for the continuous monitoring, evaluation, learning and review of adaptation strategies and measures?; (e) Is there evidence of the effective implementation of the policy/ plan? We have assessed five countries at a=1, b=0 , c=1, d=0, e=0 (two points total).

- *No downscaled* regional climate change models on risks and fisheries abundance available. There is little knowledge available at fine scale on climate change impacts on circulation and hydrological characteristics of the region and their consequences on fisheries resources, as an additional stressor to fishing, pollution and habitat degradation.
- Men, women, national authorities and institutions in target areas have *little awareness* of how to reduce the vulnerability of the fisheries sector to the impacts of climate change and about the required adaptation practices.

Targets of component 1:

1. One regional design of a framework for climate change vulnerability assessments in the fisheries sector at the local level.
2. Five countries will have vulnerability assessments carried out at the local level.
3. This project will contribute to 1 500 people having an increased awareness of climate change impacts on the fisheries sector and possible adaptation practices.

Activities:

Output 1.1.1.
To form the basis for a regional framework for vulnerability assessments (VAs) of the fisheries sector a desk study will be carried out in the 1st and 2nd quarter of the first project year (PY1). During this period CERMES will, in collaboration with the Regional Project Coordinator (RPC), TNC and National Project Steering Committees (NPSCs), identify the communities that will be involved in the vulnerability assessments. The regional framework developed by CERMES in collaboration with other regional project partners and organizations will be discussed and the design revised based on the inputs provided by workshop participants during a regional workshop in the 4rd quarter of PY1 and by fieldworkers after pilot site testing in PY2. In the first half of second project year (PY2) the final methodology design will be finalized. In PY2 and PY3 the VAs will be implemented in the five project countries.

Activities:
- Design of VA at regional level
- Implementation of vulnerability assessments at the local level

Output 1.1.2
In the first and second year (PY1 and PY2) a model describing pelagic sargassum seaweed growth, abundance and mass transport within the North Equatorial Recirculation Region (NEER) and Eastern Caribbean using a numeric hydrological circulation model (global ocean Hybrid Coordinate Ocean Model, HYCOM) will be developed. Targeted interviews with pelagic fishers in the three countries will be carried out in PY1 and PY2 to incorporate local ecological knowledge and observations at sea. In addition, in one country an economic model for Fish Aggregating Devices (FAD) fisheries will be designed in PY1 and tested in PY2 in order to evaluate the costs and benefits of these fisheries that are currently being promoted as adaptation measures.

Activities:

- Development model to assess sargassum impacts on the dolphin fish and flying fish populations
- Risk assessment modelling for pelagic (and demersal) fisheries in the face of climate change and variability
- Development of an economic model for FAD fishermen

Output 1.1.3

In PY1 workshops will organized whereby CERMES, CNFO, CANARI, and TNC will coordinate with the NPSCs the design and preparation of training and outreach materials, including participatory tools, for men, women, youth, local authorities and institutions present in the seven countries, to increase their awareness on the adverse impacts of climate change and the developed vulnerability assessments and models. They will design knowledge-based surveys and evaluations forms. After that, in PY2 workshops and meetings will be organized in six project countries for fisherfolk, aquaculturists, households and community members (20 percent females) and other stakeholders. The aim will be to increase the awareness of the impacts of climate change and on the developed vulnerability assessments and models among at least 1 500 people. Activities for disseminating the findings of vulnerability assessments and models to improve understanding at the regional, national and local level will be carried out under output 1.1.3 and should potentially also serve as inputs into Component 3.

Activities:

- Designing and implementing a communication strategy on vulnerability assessments and modelling

Component 2: Increasing fisherfolk, aquaculturists and coastal community resilience to climate change and variability

The objective of this component is to strengthen the resilience of fisherfolk, aquaculturists and fisherfolk organizations through introduction of adaptation measures and capacity building.

Component 2 seeks to generate two outcomes (see section 2.3) and five specific outputs:
2.1.1: Strengthened ICT capacity of fisherfolk and CNFOs;
2.1.2: Strengthened fisherfolk and CNFO capacity (in business skills, insurance schemes, coping with loss, rapid response and boat hauling) and associated equipment delivered;
2.1.3: Exchange programs on fisheries co-management and adaptation technology implemented;
2.2.1: Existing aquaculture centres rehabilitated and new aquaculture centres established; and
2.2.2: Strenghtened capacity of aquaculturists in climate change adaptation measures and adaptive technologies.

Baseline:

- Use of adaptation technologies is limited
- Organizational structures available in the fisheries and aquaculture sector are weak; not allowing an efficient transfer of knowledge and technologies
- Livelihood diversification in fisheries is limited

- Aquaculture development is limited; the sector only employs 184 people in the 7 countries

The targets for component 2 are:

1. 1 400 people (20 percent women) will adopt adaptation technologies
2. 4 200 people (40% women) will benefit from adoption of diversified, climate livelihood options by means of adaptation measures; alternative livelihoods and capacity building.
3. 300 people will benefit at the household level through rehabilitation of existing and establishing of new aquaculture centres and capacity building activities

Activities for component 2 are as follows:

Output 2.1.1:

In the 1st and 2nd quarter of PY1 the Caribbean ICT Research Programme (CIRP) will further develop the *mFisheries* tool. In the 3rd and 4th quarter of PY1 national workshops with fisherfolk organization leaders and CNFO will be held in five project countries and a draft strategy for strengthening ICT capacity of the fisherfolk organizations will be developed. The *mFisheries* tool will be designed to meet the needs of five project countries. From PY1 until the 1st quarter of PY3, targeted capacity-development and training materials for the *mFisheries* tools will be designed, applied, and revised based on the inputs provided by workshop participants and national level consultations with fisherfolk in the countries. An evaluation will be carried out in each country to help final design. In the 3rd and 4th quarter of PY2 the tool will be finalized for the five countries.

The analysis, the integrated results and recommendations for further use and application will be shared among project countries and beyond so that possible uptake in other areas can occur in other countries in the Caribbean region in PY3.

In the 1st and 2nd quarter of PY1 a FAD[56] program in two project countries will be developed.

The Project Coordinator together with the Fisheries Divisions in the two project countries will identify sites for the implementation by means of research and workshops with fisherfolk and other key stakeholders. Research on FAD design and implementation will build on previous work and research by the CARIFICO project and IFREMER and will follow recommendation WECAFC/15/2014/2 "On the Sustainability of fisheries using Fish Aggregating Devices in the WECAFC Area"[57]. Targeted capacity development and training materials for use of the smartFAD and technology needed by fishers will be designed, applied, and revised based on the inputs provided by workshop participants. In PY2 the smartFADs will be deployed in the pilot sites. In the research and

[56] A fish aggregating (or aggregation) device (FAD) is a man-made object used to attract ocean going pelagic fish such as marlin, tuna and mahi-mahi (dolphin fish). They usually consist of buoys or floats tethered to the ocean floor with concrete blocks. FADs attract many different types of fish, they attract fish for numerous reasons that vary by species. *Smart* FADs include sonar and GPS capabilities so that the operator can remotely contact it via satellite to determine the population under the FAD.

[57] Available at: http://www.wecafc.org/en/sessions-and-meetings/sessions/commission-reports.html?download=58:wecafc-15th-session-report

recommendations mentioned above the impacts of these technologies on stocks, and the proposed solutions for when negative impacts arise are incorporated. Sea trials and testing will be carried out in direct collaboration with fishers in all project sites in PY2. In PY3 the design and use and training of fisherfolk in using the smart FADs will be evaluated by means of workshops or consultations and finalized based on the inputs provided by participants in these.

Activities:

- Development and implementation of fisheries IC/Training of fishers in ICT/mfisheries;
- Development and implementation smart FADs;
- Using NEMO and Marine Police communications.

Output 2.1.2:

From the 3rd quarter of PY1 until the 2nd quarter of PY4, targeted capacity-development and training materials including participatory tools will be designed, applied, and revised based on the inputs provided by workshop participants (fisherfolk and CNFO) on the topics of: business skills; insurance, disaster risks; safety-at-sea; development of business proposals to facilitate full utilization of key commercial and under-utilized species; and development of alternative and improved livelihoods and gears (including FADs). The capacity building training programs will build onto existing programs already developed in the region and programs implemented by national authorities, adding climate change adaptation techniques, methods, skills and measures to these programmes. The capacity building of fisherfolk and CNFO will be accompanied by targeted training of female processing workers on hygienic processing facilities and good food safety training which results in less post-harvest losses. Training evaluation forms will be designed to be completed by all workshop participants on all trainings in PY2, PY3 and PY4. With regard to use of alternative gear trials at sea and the testing of these gears will be carried out in direct collaboration with fishers in all project sites.

In PY1 the project will follow-up on the fisheries insurance needs survey, carried out in the Caribbean countries in partnership between FAO, World Bank, CRFM, CNFO, TNC and the US Department of State. The development of attractive insurance policies and conditions for fishers, to allow them to access credit services make investments in climate change adaptive technologies is foreseen in PY1. This would be followed by development of awareness raising materials for such insurance, as well as to increase participation of fisher folk in health insurance, life insurance, social security schemes and pension schemes.

In PY1 a regional workshop will be held with regional partners such as CDEMA, CERMES, WECAFC, CRFM, CCRIF and CARIBSAVE, national fisheries authorities and fisherfolk organization leaders on the design and implementation of early warning systems and Disaster Preparedness Plan specifically for the fisheries sector. Most countries already have national disaster preparedness plans but these are not especially designed for the fisheries sector. To prepare for extreme-weather events fisherfolk, fisheries officers, and other key stakeholders will receive extensive training, accompanied by the distribution of training materials, posters and brochures and will

have enhanced direct access to, or understanding of, weather data, adaptation information and information on risk reduction in fisheries.

In the 1st quarter of PY2, the Project Coordinator and the Fisheries Divisions in two project countries will identify sites for the use of boat hauling equipment and or establishment of safe harbours. During the 2nd, 3rd and 4th quarter of PY2 this equipment will be installed. All purchases will be initiated locally by the NPCs who will do the searching for local suppliers, but executed by the FAO RPC with the support of the Budget and Operations Officer (see Appendix 5).

Activities

- Training (including business skills training; processing workers and other fisherfolk and CNFO capacity training);
- Development of business proposals to facilitate full utilization of key commercial and under-utilized species ;
- Development of alternative and improved livelihoods and gears;
- Development of early warning systems (national and local level);
- Development of insurance needs assessment, scheme and implementation;
- Safety-at-sea improvement (training, boat design, equipment) and disaster preparedness plan;
- Hurricane shelters and areas for boats storage.

Output 2.1.3:

In the 3rd and 4th quarter of PY1, CERMES in collaboration with the CNFO, national fisherfolk organizations and Fisheries Divisions will design an exchange program facilitating exchanges by fisherfolk to countries and communities in which EAF, co-management, CCA, and DRM in the fisheries sector are successfully carried out. In the PY2 this exchange program will be implemented and approximately 100 fisherfolk will benefit directly from the exchanges. As climate change adaptation activities further develop in the CC4FISH project the program will be revised and fine-tuned in the 4th quarter of PY2 so exchange activities can be linked to related activities in the 1st and 2nd quarter of PY3.

Activities:

- Facilitating exchanges by fisherfolk to countries/communities in which EAF, co-management, CCA and/or DRM is successful.

Output 2.2.1:

In the 3rd and 4th quarter of PY1 and in PY2 six project countries will review or further develop their aquaculture national strategies. In four countries the aquaculture sector has been developing slowly over the past years, but three countries do not have any commercial aquaculture in place as yet. In one country an aquaculture demonstration centre exists that can serve for demonstration and training purposes. The national strategy for aquaculture in each country will be informed by lessons learned generated by other project countries with experience in aquaculture, other countries in the region and national consultation workshops with key stakeholders. The strategies will build

onto work carried out by the CRFM on the potential for aquaculture development in the CARICOM region, in some countries national strategies were already drafted with support from the ACP Fish II project and the strategic planning can also builds on the collaboration between FAO and private partners in aquaculture in Antigua and Barbuda.

In PY2 exchange visits with the training facility in Antigua and Barbuda for entrepreneurs in those countries that aim to develop aquaponics will be carried out. Four project countries will implement their aquaculture program starting from the 3rd and 4th quarter of PY2 for the remainder of the project duration. Two project countries will strengthen their existing aquaculture centres throughout PY2 and PY3. At the end of PY3 the RPC and National Project Coordinator (NPC Antigua and Barbuda) will conduct field monitoring visits and will generate a technical report on the aquaculture program and the specific adaptation measures put in place under CC4FISH as well as their impact. The analysis of the results and the provided recommendations for further development of aquaculture will be shared among project countries and beyond so that possible uptake in other areas can be promoted.

Activities:

- Aquaponics and/or aquaculture facilities strengthened;
- Delivery of equipment;
- Development of marketing strategy.

Output 2.2.2:

In the 3rd and 4th quarter of PY1 capacity building programmes for aquaculturists in climate change adaptation measures and adaptive technologies will be designed at the national level in four project countries by the National Project Steering Committee and based on the National Aquaculture Strategy developed under output 2.2.1 in collaboration with key stakeholders. In the 3rd and 4th quarter of PY2 and PY3 the capacity building activities (workshops, training, equipment) will be carried out with previous identified aquaculturists, supporting the resilience of aquaculturists and their families.

Activities:

- Capacity building programmes for aquaculturists in in climate change adaptation measures and adaptive technologies

Component 3: Mainstreaming of climate change adaptation in multi-level fisheries governance

The objective of component 3 is: Mainstreaming of climate change adaptation in multi-level fisheries governance.

Component 3 seeks to generate one outcome (see section 2.3) and two outputs:

Output 3.1.1**:** Strengthened institutional regional and national capacity on mechanisms to implement climate change adaptation measures; and
Output 3.1.2 Climate change adaptation mainstreamed into policies, plans and associated processes.

Baseline:

- The capacities of five national level institutions in the project countries to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures are low (and measured at seven points)[58]
- The national fisheries policy, management and legal framework in five countries to identify, prioritize and integrate adaptation strategies and measures is inadequate (and measured at two points)[59]

Targets of outcome 3.1

1. The capacities of five (5) national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies is improved with five points
2. National fisheries policy, management and legal frameworks in five (5) countries are strengthened, including the identification, prioritization and integration of adaptation strategies and measures.

Output 3.1.1

In the 1st and 2nd quarter of PY2 the regional project partners will carry out a needs assessment together with five projects countries to support practical organisational and/or institutional capacity for implementing EAF, CCA and DRM at the national level. Building on project countries' current awareness of the principles of EAF, CCA and DRM and ongoing projects in the 3rd and 4th quarter of PY2 training programs will be implemented with key stakeholders in the fisheries sector. This training includes e.g. design and implementation of EAF management plans and participatory co-management training (workshops, training, exchange programs). To ensure that the training addresses existing needs of different stakeholder groups (including both government officials and fisherfolk), different training curricula will be developed, as required. The training may take place through training courses or workshops and in collaboration with relevant partner organisations and projects, as appropriate. The capacities of five (5) national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies are improved throughout this process. A regional workshop will be held in PY3 to share experiences and discuss further development of aquaculture among project countries and beyond so that possible uptake in other areas can be considered.

Activities:

- Assistance for developing practical organizational capacity for implementing EAF, CCA and DRM (training, exchange, workshops etc.)

Output 3.1.2:

[58] The objective of improving five institutions does not imply the two countries not involved in this activity do no need to have their capacity enhanced but it would go beyond the scope of this project to address the institutions of all seven project countries in this activity. See previous section for more information regarding the scoring

[59] See previous section for more information regarding the scoring

In the 2nd and 3rd quarter of PY1 and first 2 quarters of PY2 the project countries, with the support of the project partners CERMES, CRFM and WECAFC, review the current status of their policies, regulations and fisheries management frameworks and other guiding instruments to assess to what extent climate change impacts on the fisheries sector and climate change adaptation are taken into account. These reviews will allow for identifying gaps that need to be addressed both in the legal and policy frameworks under this output for mainstreaming EAF/CC and DRM into fisheries management and planning legislation and that may relate to the existing institutional structures. Training will also be carried out integrating CCA and DRM into institutional processes and frameworks, as well as related policy development processes, legal processes (e.g. development of specific fisheries regulations). Based on the reviews and identification of gaps, recommendations will be formulated in PY2 for legislative amendments for mainstreaming EAF/CC and DRM into fisheries management and planning legislation, as needed. After that, further in PY2 and PY3 these gaps will be addressed and support provided for the legal review and amendment. The project will support five countries to have improved national policies and plans to identify, prioritize and integrate adaptation strategies and measures. Under this output the CRFM will engage in collaboration with the project countries in developing a protocol for integration DRM and CC into the Caribbean Community Common Fisheries Policy from PY1 through midyear PY3.

Awareness raising activities will be carried out, both at national and local levels. These activities will cover the principles of EAF, CCA, DRM, climate change impacts on the fisheries sector and the lessons learned. To ensure that the awareness raising addresses existing needs of different stakeholder groups, a variety of awareness materials or trainings will be developed, as required. Media products such as videos will be produced by the project countries for use both nationally and regionally in order to target a wide audience.

Activities: Implementing EAF to develop adaptation plans

- Mainstreaming EAF/CC and DRM into fisheries management and planning-legislation
- Development of protocol for integration DRM and CCA into CCCFP
- Advocacy of climate change mainstreaming among fishers, policy makers and CNFO secretariat
- Mainstreaming through communication for adaptation and public awareness and training programmes

Component 4: Project M&E and knowledge management

The objective of this component is to ensure systematic progress monitoring of the project's outcomes and outputs, including its annual goals, as established in the Project's Results Framework (Appendix 1). Furthermore, the purpose is to broadly disseminate lessons learned and best practices that can be used in the wider region and in other regions suffering from similar challenges in the fisheries sector in the face of climate change. Sections 4.5 and 4.6 below include a detailed description of monitoring and evaluation (M&E) activities and the project M&E plan, including assignment of responsibilities.

Output 4.1.1**:** Project monitoring system operational, providing systematic information on progress in achieving Project outcomes and outputs.

Target: *Eight (8) semi-annual Project Progress Reports (PPR).*

Output 4.1.2: Mid-term and final evaluations.

Target: *Two (2) evaluation reports.*

Output 4.1.3: Project-related "best-practices" and "lessons-learned" published and disseminated in all project countries.

Target: *Best practices and lessons learned reports from project countries posted on Project website and disseminated in the Caribbean region.*

2.5 ADAPTATION BENEFITS

The main project's beneficiaries will be 2 800 small scale fisherfolk and aquaculturists and their household members (including at least 40 percent women) who through climate change adaptation will improve their livelihoods, their resilience capacity in the face of climate change, will improve their food security, and will receive higher incomes per family through increased fisheries production or higher value of fish products. The 2 800 people will benefit from a myriad of technical training, increased involvement in fisheries management decision-making processes, improved safety-at-sea knowledge and measures, improved access to technology, and an increased awareness on climate change impacts and the vulnerability of the fisheries sector.

Indirect beneficiaries of the project will be at the household and community level because a climate resilient fisheries sector generates positive impacts on coastal communities at a larger scale. The wider public will also be indirect beneficiaries, as they will receive information on climate change vulnerability and adaptation efforts by the fisheries sector. Awareness raising and training materials will be made available to the public for free through on-line sources. In terms of influencing public policy and youth these factors can be critical for successful longer term outcomes. Project's expected adaptive benefits at a local scale are:

Short and medium term:

- More sustainable fish production and higher net incomes (from deployment of FADs, responsible aquaculture development and development of business proposals to facilitate full utilization of key commercial and under-utilized species Improvement of food security as a result from increased production of fish (marine capture and aquaculture). This will generate a positive impact on poverty and local food insecurity.
- Greater income for fishers as a result of improved fish handling and application of food safety measures.
- Increased adoption of risk mitigation and adaptation measures, such as fisheries insurance, health and life insurance in fisheries as well as access to social security.
- Less vulnerability of fishers livelihood and greater resilience to climate change as a result of capacity training (e.g. business skills and safety-at-sea training)

Long term:

- Better resilience to climate change impacts, allowing for maintenance or improvement of livelihoods, productive means and related income levels.
- Greater information for decision making a priori and in the future with reference to climate change and disaster risk management (DRM).
- Increased knowledge and understanding about the nature of the exposure, sensitivity and adaptive capacity of fishing communities and aquaculture investments to climate change among an estimated 2800 people in the fisheries sector
- Decreased exposure to predictable or expected natural disasters and losses associated with them.
- Livelihoods and social and economic benefits of 1400 fisherfolk in coastal communities will be secured through pertinent climate change adaptation investments in fishing practices, fishing gear innovations, boat designs and application of innovative communications technologies at sea.
- At least 1400 of the most vulnerable small-scale fisherfolk will be competent in and applying safety-at-sea measures, and will benefit by reducing their vulnerability to climate change and variability impacts.
- Climate change adaptation in fisheries and fisherfolk communities will be pertinently mainstreamed into broader sectoral, inter-sectoral, national and regional policy, legal and institutional frameworks, through capacity building and institutional strengthening of fisheries administrations, fisherfolk organizations and establishment of knowledge networks.
- Strengthened adaptive capacity of national and regional institutions through targeted capacity building on climate change risks and functional and practical adaptation measures and technologies in the Eastern Caribbean fisheries and aquaculture sector.
- Pressure on coastal marine habitats, including precious coral reefs, and on aquatic biodiversity and reef fish stocks vulnerable to overfishing, will have reduced tremendously through responsible aquaculture development and introduction of adaptive fisheries methods and fisheries management plans. Depletion of certain reef fish stocks (e.g. Nassau and Goliath groupers), which status is now considered as overexploited at critical level, may be avoided in some of the participating countries through development and implementation of appropriate management plans with support of the project.

Gender approach

The project will mainstream gender into the four components. The project will focus on promoting participation of women; empowering them to participate in planning and decision making within the project sphere and encouraging them to do similarly outside of the project; and to improve their productivity, income and living conditions. Participation of women, but also of youth, will be promoted through multi-stakeholder workshops, consultation and validation processes used in project activities. Gender is important in the vulnerability assessments and public awareness program (Component 1); improving processing facilities and providing improved food safety training results in less post-harvest losses and improved livelihoods of processing workers, which are mostly women (Component 2); the marketing of *under-utilized species* fish species will of necessity focus to a large extent on women as well as men (Component 2); and participation in the development of new aquaculture centres and the rehabilitation of

existing aquaculture centres will enhance prospects for both sexes (Component 2). Mainstreaming CCA, including attention to gender, will be promoted in Component 3. Developing practical organisational capacity through training of fisheries stakeholders for getting CCA and DRM into EAF management plans and co-management learning by doing will also involve women. The concluding outreach via public awareness activities will involve women both as trainers as well as other target groups such as youth. The average age of fishers is rising worldwide[60] and the Caribbean region is no exception. Yet, for climate change impacts on the fisheries sector is expected to worsen over the coming decades making young fisherfolk crucial in tackling climate change. This project will aim to empower youth to take adaptation and mitigation actions and enhance effective participation of youth in policy decision-making processes.

2.6 COST EFFECTIVENESS

During full project preparation diverse climate change adaptation strategies and methodologies were analysed with a view to assess their cost/effectiveness and suitability for application in the various countries involved. The project strategy of increasing resilience and reducing vulnerability to climate change impacts in the eastern Caribbean fisheries sector, through introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists as well as in fisheries management and mainstreaming of climate change was selected after considering the following strategies.

Relying solely on global fisheries models

The current modelling exercises on the impacts of climate change on the marine ecosystem are mostly global in nature. They can project the impacts of climate change on global fish production by 2050, yet the projections cannot be easily downscaled to the regional or national level. Global models of these types often overlook the vulnerability of SIDS as the data and assessment methodologies used are not downscaled to the level of SIDS. While the global models generate very interesting insights it can therefore not provide insights into the impacts of climate change for e.g. key species in the region and guide policy. For instance no model is available for sargassum events or their impacts on different types of fisheries (pelagics versus demersal fisheries), hence assessing the impacts of climate change on the marine ecosystem at the Eastern Caribbean level is not possible. Countries vulnerabilities and strategic options for adaptation are expected to differ depending on their dependence on key species, their type of fishing gear, fishing methods and other factors. To address climate change impacts on key species it is critical to also carry out these activities at the regional level. While initially the finer resolution regional approach may be more costly and require more efforts (because it is more detailed and specific) than a global analysis, it is cost-effective in the longer-term because it can generate targeted recommendations for the regional and national level for improved fisheries and aquaculture policy and management in the face of climate change and variability.

Use of mFisheries app to improve safety-at-sea

Data from the International Disaster Database[61] underscores that Caribbean SIDS are

[60] Kalikoski and Franz, 2013
[61] http://www.emdat.be/database

highly vulnerable to natural disasters such as storms and hurricanes. The extreme weather events, which are expected to increase in intensity create high economic losses, deaths and also impact infrastructure ranging from landing sites to post-harvest facilities and transport routes in the region. Improving communication and safety-at-sea by means of technological innovations is becoming increasingly important as there is no denying that within the last five years the world has witnessed the rapid growth and development of new technologies. Mobile telephony in particular has gained the most ground as is evident by high penetration levels of mobile phones especially among low income earners and traditionally marginalized population clusters such as fisheries. The *mFisheries* tool refers to a collection of context-appropriate productivity programs intended to be used by small-scale fisherfolk. The suite has different applications and includes, inter alia: a virtual market place; At-Sea Safety Support; Emergency Response System; Navigational Aid; and Audio-visual Training.

The At-Sea Safety and Navigation utilities comprise four components: *SOS*, *Compass, GPS* and at-sea tracking. *SOS***,** the commonly used description for the international morse code distress signal, sends immediate pre-defined notifications in the form of email and text messages and automatically initiates a voice call to the Coast Guard of a particular country when initiated by a user. In the pilot country Trinidad and Tobago, where the tool is used the coast guard has responded swiftly to calls of distress. This application as well as the Emergency Response System app are thus expected to relief the impacts of storms and hurricanes in terms of human and economic loss. In a timely fashion fisherfolk will be able to respond in case of an approaching storm and return to shore and secure their assets. Although the start up costs of the design and development of the tool is costly as it needs to be tailored specifically the local context in each country and thus requiring a high level of local participation the use of the tool will be very cost-effective in the mid- term.

Aquaculture and marine fish production

Investment in aquaculture and improving the sustainability of marine capture fisheries enhances the available fish for consumption. The growing population in the project countries would require increased fish and fisheries products imports, in a time when debt to GDP ratios of many of the participating countries has reached unhealthy and unsustainable levels. If aquaculture would remain at the current low level, without the CC4FISH project, risks involved would be that the price of fish is considered too high for most private parties, while publicly financed aquaculture demonstration facilities would be under-utilized and their maintenance would be limited to damage repairs. The food import bill of the Eastern Caribbean countries would continue to increase, as over-exploitation of fisheries resources would continue, further reducing catches and aquaculture production would not be able to fill part of the increasing gap between supply and demand. The project approach proposed is deemed to be the most cost-effective to increase resilience and reduce vulnerability to climate change impacts in the eastern Caribbean fisheries sector. The proposed SCCF project will demonstrate the benefits of adaptation interventions in the fisheries and aquaculture sector, not just in terms of production and improved safety of fishers but also in terms of social, economic and ecological contexts.

2.7 INNOVATIVENESS

This project will be innovative in many ways. It will introduce innovative technological solutions in the fisheries sector for sharing knowledge and reducing vulnerability to climate change related risks that affect the fisheries sector. The use of new ICT tools by fisherfolk will be promoted, and enable them to have access to real-time data and information from reliable meteorological agencies (e.g. CIMH, NOAA) and response agencies such as CDEMA. This project will build onto the work currently being carried out by the CIMH. The CIMH is developing the so-called DEWETRA platform. This is a real-time integrated system for hydro-meteorological forecasting, monitoring and prevention which helps to up-to-date and reliable risk scenarios. Their data on e.g. flooding vulnerability of coastal zones in the Caribbean region and the component in DEWETRA called 'wave watch' can support vulnerability assessments, climate modelling and support early warning system development. The new range of cell phone applications, known as mFisheries, which will be further developed and implemented under the CC4FISH project will improve market connections, supply chain efficiency and safety at sea for small-scale fishers in the project countries involved. In addition to the specific problem-solving advances that ICT offers it has a broader impact on innovation by offering the industry a window onto cost-effective and scalable access to knowledge available online via the growing number of apps available to the public. It thus has the potential to be transformative, as fishers become comfortable with apps and online resources, reducing dependence upon specialist government or commercial services.

A number of community-level vulnerability assessments have been carried out in some of the project countries. However, these initiatives are not focused on the fisheries sector, and in focusing on vulnerability of the coastal zone or on multiple sectors their integration into fisheries management planning is problematic. Both the site-based and fisheries value chain analyses proposed in Component 1 will, for the first time, be geared towards fisheries management. In addition, as the previous assessments differ in approach and methodology per country, they do not enable a comparison across communities within a country or countries and can thus not help assess where climate change adaptation of the fisheries sector is most needed. The approach in this project will facilitate comparative analyses and scaling up.

Mainstreaming climate change adaptation measures in fisheries sector policies and planning processes is in itself innovative in the Caribbean region. There have been developments on integrating CCA and DRM into fisheries and aquaculture (e.g. by the CRFM, FAO and CERMES) and mainstreaming of climate change into policies and planning is recognized at the regional level as being crucial (CRFM, 2013). Implementation thereof is still lacking at the national level and this project will build on to this regional prioritization. Various regional and national projects address mainstreaming climate change into policies and plans. These are, however, not focused on the fisheries sector and do not focus on strengthening the institutional capacity of the various stakeholders involved (public and private parties and civil society actors) within the fisheries sector needed for successful mainstreaming of climate change. The CC4FISH project will provide the opportunity for mainstreaming of policies and plans of the fisheries sector and strengthen the institutional capacity needed for mainstreaming at multiple-levels.

This project will support implementation of the EAF, continuing some of the work started by the GEF International Waters funded CLME project and its Strategic Action Programme (SAP) that has been endorsed by all project countries. It will contribute to the implementation of the SAP at the fisheries administration level, to develop national fisheries policies, fisheries strategies and fisheries management plans using approaches that are much more participatory, cross-sectoral, transparent and inclusive.

Finally, the project will facilitate the introduction and uptake of the most innovative and cost-effective approaches, practices and technologies for sustainable "climate proof" aquaculture development in the Caribbean (e.g. aquaponics, recirculation, submergible cage/culture systems). In contrast to conventional demonstration facilities for aquaculture, the project will develop public-private partnerships to jointly develop of practical and functional solutions and effective drivers for change. Aquaponics, a form of sustainable aquaculture combining aquaculture and hydroponics is still in its infancy and could provide great development potential in the region. Aquaponics is capable of producing fish, fruits and vegetables in a recirculation system that conserves freshwater resources. In contrast to conventional demonstration facilities for aquaculture, the project will develop public-private partnerships to jointly develop practical and functional solutions and effective drivers for change and build on to those which are already in place.

SECTION 3 – FEASIBILITY

3.1 ENVIRONMENTAL IMPACT ASSESSMENT

Following FAO's *Environmental Impact Assessment (EIA): Guidelines for FAO Field Projects*[62], the proposed Project is classified under category B[63]. The corresponding Environmental and Social Review Form[64] is attached in Appendix 6.

3.2 RISK MANAGEMENT

3.2.1 Risks and mitigation measures

The main risks that might prevent the Project objectives being achieved are detailed in Table .

Table 11: Main risks and possible mitigation measures

Main risks	Level of risk	Mitigation measures incorporated in project concept
Low capacity of some partner institutions and government ministries to engage in the project in addition to their other commitments	Low	The establishment of a Project Steering Committee (PSC) during the project inception phase will ensure participation, ownership and engagement of the key partners to maintain attention to this project. Most partners have been actively involved in the project design and preparation already. Moreover, FAO has extensive experience in working with the partners in the region and has FAO representations and/ or national

[62] See http://www.fao.org/docrep/016/i2802e/i2802e.pdf

[63] Category B projects should not entail significant (or potentially irreversible) negative environmental (and associated social) impacts, but may still have adverse effects which can be mitigated with suitable preventive actions. An indicative list of projects that would normally be assigned to Category B includes: i) Agro-industry projects of small and medium scale; ii) Water impoundment, irrigation and drainage schemes of small scale; iii) Small and medium-scale agricultural and animal husbandry production schemes which involve the use of "exogenous" technology and/or inputs (i.e. cultivation or animal husbandry techniques, agricultural or post-harvest machinery, disease and pest control, seeds, fertilizer, and tools that are not commonly used/traded in the project area); iv) Watershed management or rehabilitation, river basin management planning, international water management, and agreements for medium-size projects; v) Range and pasture management and livestock management, including waste control and livestock health aspects; vi) Small and medium-size aquaculture, including small and medium-scale industrial and artisanal fisheries; vii) Limited bioenergy projects; viii) Climate change adaptation projects; ix) Small and medium-size plantations for bioenergy or pulp or other agricultural use; x) Reforestation/afforestation; xi) Forest industry development including industrial and community uses; xii) Introduction of genetically modified organisms; xiii) Small and medium-size road construction, maintenance and rehabilitation; xiv) Significant changes in plant and animal gene pool; xv) Land use changes affecting biodiversity; xvi) Projects that may have potentially minor adverse impacts on physical cultural resources

[64] Ranking under Category B is to be certified by the FAO Lead Technical Officer (LTO) who can proceed to final design and implementation phases. The FAO LTO should carefully fill-in the FAO Environmental and Social Review Form – attached in Appendix 8.

		correspondents' offices in each of the countries to facilitate implementation at country level. National Project Steering Committees (NPSCs) will be formed to support and monitor progress at national level in the participating countries.
Lack of political support for the project, e.g. a change in key policy and decision-makers or other events beyond the control of the project leading to changes in policies and/or support for management and the project.	Low	Project priorities are in line with overall local, national and regional concerns and are hence strongly anchored in existing policies. Through stakeholder participation, local, national and regional ownership was already established at the project design stage, and this broad-based support will be promoted also during implementation.
Co-funding from partners and collaboration do not materialize as planned and the project experiences budget shortcomings.	Low	The project design will not contain expected results or activities for which funding has not been confirmed. In accordance with GEF requirements, all co-funders must confirm their contributions in writing. Regular reviews of project progress together with financial monitoring during project implementation will ensure that corrective actions can be taken if and as needed.
Poor coordination between the various components of the project	Low	The Project Steering Committee will meet at least twice per year to ensure proper coordination. Moreover, the project management unit will give particular attention to coordination issues and will ensure follow-up at national and regional level.
Limited interest and engagement of fisherfolk	Medium	Careful attention will be given to ensure involvement of all relevant stakeholders (including fisherfolk) at an early stage in the preparation phase and throughout the project implementation process. In the project preparation phase their representatives have participated in development of the project at regional and national levels. The implementation of activities in the field will provide opportunities for a broader engagement by fisherfolk. Capacity building and training of fisherfolk will take place as much as possible in evening hours and in the low season to avoid them missing fishing opportunities.
Climate change induced	Medium	The capacity building activities foreseen

events, such as hurricanes and tropical storms and shifts in stock abundance, occur faster than anticipated and the project is able to adapt to		under the project will be initiated in the first year. Climate change adaptive fisheries management planning will ensure from the start of the project that adaptive approaches are used that meet the dynamics, changes and variability of the climate and prepare the fisherfolk for these.
Extreme weather events impact the implementation of certain project elements	Low	Extreme weather events are usually well anticipated and the project partners will be aware of upcoming events as a result of communication and information strategies
Uncertainty in findings and conclusions from Climate Change science and its fisheries specific links reduce implementation of adaptation measures by the fisheries sector	Medium	The science-management interface is well-integrated in the project design and implementation. A range of communication and information strategies will be used to ensure that adaptation solutions supported by scientific evidence will reach the target stakeholders.
Technology uptake by fishers, aquaculturists and fisheries administrations is low	Low	Elsewhere proven and properly tested technologies will be introduced in the region; the technologies will be simple, low-risk, economically viable, durable and practical in order to facilitate rapid uptake also by persons with limited formal education.
Conflicts and differences among participating groups might affect project implementation.	Low	The Project will promote continuous dialogue amongst stakeholders and develop platforms for greater exchange of information, needs analysis and trouble shooting.

To mitigate against these risks the lessons learnt from previous GEF regional/national projects will be taken on board. This will involve the creation of a Project Steering Committee at the project inception phase to ensure participation, ownership and engagement of the key partners. Key partners in this PSC have already participated in the project design, identification and project preparation phase. It will also involve the acceptance and clear understanding of the roles and obligations of all the various partners involved in the project and an agreement to comply with the M&E schedule. The engagement of the fisherfolk, aquaculturists, fisherfolk organizations and communities as well as other key stakeholders will be ensured by using Nationals PSCs (NPSCs) and established forums and participatory processes, and by providing outputs that meet locally-driven needs and interests. The innovative technologies (e.g. ICT technologies, FADs) will use simple, accessible and affordable devices, methods, equipment and other gears. Fisheries management tools to be integrated in national fisheries policies developed under the Project will be designed in close consultation with all key stakeholders.

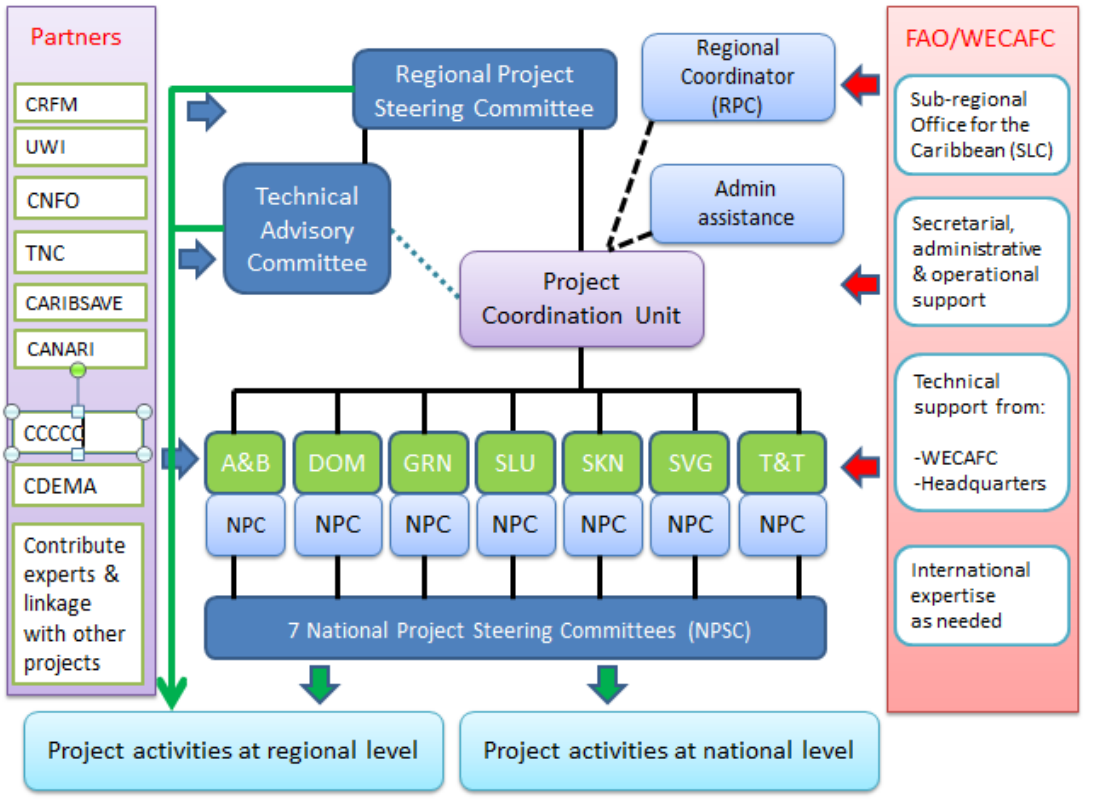
SECTION 4 – IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

4.1 INSTITUTIONAL ARRANGEMENTS

a) *General institutional context and responsibilities*

The project will be executed through a collaborative arrangement between the relevant government authorities in the project countries, FAO/WECAFC and co-financers and other partners, including CRFM, UWI, TNC, CNFO and CARIBSAVE. Figure 8 gives a schematic overview of the arrangements. The roles, inputs and responsibilities of the project executing partners are described in section 4.2 below.

Figure 8 Project Implementation structure



It should be noted that while the fisheries authorities are the national executing partners of the project, the line-ministries are in charge of the fisheries divisions. Moreover, the countries have internal arrangements in which these ministries (in case they are not responsible for environment) coordinate with the GEF Operational Focal Points and responsible for the coordination of all GEF activities in their respective countries. Coordination and collaboration between the fisheries authorities and the GEF Focal Points will be ensured through the project implementation arrangements, mainly the National Project Steering Committees (NPSCs).

With regard to the involvement of fisherfolk, aquaculturists and fisherfolk organizations and their communities, special efforts will be made to ensure that the participation of stakeholders is effective. Livelihood support will be provided (under Component 2) to

fisherfolk and aquaculturists in different communities. Moreover, comprehensive communications, education and public awareness programmes will be prepared and executed targeting key stakeholders involved in project, primarily focusing on fisherfolk, aquaculturists, fisherfolk organizations and fishing communities to increase support for project activities.

b) Coordination with other ongoing and planned related initiatives

FAO/WECAFC, and the National co-executing Partners will coordinate and collaborate with implementing and executing agencies on a range of ongoing initiatives and projects related to fisheries governance and management in the region so as to identify opportunities and facilitate mechanisms for achieving synergies with other relevant GEF-supported projects (Table 12), as well as with projects supported by other donors (see **Error! Reference source not found.** in section 1.1.1a).

This will also include other FAO activities in the region, to ensure that best practices are incorporated into the project's approaches. This collaboration will include: (i) informal communication between GEF agencies and implementing partners in other programmes and projects; (ii) exchange of information and outreach material among projects; (iii) participation in fora and RFB (WECAFC and CRFM) meetings in the region, with representatives from regional and national institutions, private sector, and CSOs. With a view to guaranteeing coordination and collaboration among the different initiatives, specific coordination functions have been included in the TOR of the Regional Project Coordinator (see Section 4.2), the results of which must be explicitly included in the project's progress reports.

Table 12: GEF Projects in the region on related topics

Project countries involved	**Project Name & Description**	**GEF Agency (executing agencies/ partners)**	**Approx. impl. period & Status**
All seven project countries	**CLME+** The "Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems" (CMLE+) Project is in final stage of development based on the Strategic Action Programme (SAP) and agreed under the first phase of the CLME (Caribbean Large Marine Ecosystem) project. The project will assist in the Wider Caribbean Region in improving the management of their shared Living Marine Resources through an EBM (ecosystem based management) approach. Facilitate the implementation of the 10-year politically endorsed *Strategic Action Programme for the Sustainable*	**UNDP (UNEP, OSPESCA, CRFM, FAO/WECAFC)** GEF International Waters funded	*2015-2019* ** ProDoc approved*

	Management of the Shared Living Marine Resources of the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+ SAP)		
Trinidad and Tobago	**REBYC-II LAC:** The "***Sustainable Management of By-catch in Latin America and the Caribbean Trawl Fisheries***" is a 5-year project that is seeking to enhance the management of by-catch and conservation of 'blue forest' habitats in Latin America and the Caribbean bottom/shrimp trawl fisheries through effective public and private sector partnership and adoption of best practices that support sustainable livelihoods. It is anticipated that the project will provide an opportunity for a major scaling up and strengthening of participatory and sustainable fisheries and by-catch management within a globally important fisheries sector. (GEF ID 5304)	FAO/ WECAFC	*2015-2020* **Project Identification Form approved; ProDoc under development*

4.2 IMPLEMENTATION ARRANGEMENTS

As the GEF Agency, FAO will be responsible for oversight of the SCCF/GEF resources, as well as the project as a whole, to ensure that GEF policies and criteria are adhered to and that the project meets its objectives and achieves expected outcomes and outputs as agreed in this project document (PRODOC), work plans and budget in an efficient and effective manner.

Accordingly, FAO will provide technical support under the responsibility of the Lead Technical Officer (LTO), based at the FAO Subregional Office for the Caribbean (FAO-SLC), supported by a Headquarters Technical Officer based in FAO Rome. A Project Task Force (PTF) has been put in place since the project preparatory phase and will continue to provide technical oversight during implementation. The budget responsibility for the project will be held by the FAO-SLC. The same office, located in Barbados at the United Nations House, also hosts the Secretariat of the WECAFC, a range of Caribbean regional and national level fisheries projects financed by FAO and donors, and the CC4FISH Project Coordination Unit (PCU) as well as the project management unit of the REBYC II LAC project. The PCU of the CC4FISH project will be headed by a Regional Project Coordinator (RPC) and will be established within this existing organisational structure and located in the United Nations House, which has suitable and secured offices and meeting rooms available for the project.

This will enable the project to collaborate effectively with other ongoing regional and national projects of FAO, UNDP and GEF and benefit from the available technical backstopping, administrative and managerial support. Project implementation will be guided by a PSC consisting of representatives of partners and key stakeholders. At the national level, work will be coordinated by National Project Coordinators (NPCs). Also

NPSCs will be established for guiding and advising on national implementation bringing together key partners and stakeholders in each country. These functions are described in more detail below (see also Figure 8).

a) Roles and responsibilities

I. Roles and responsibilities of executing partners

The **WECAFC Secretariat,** under the overall supervision of FAO sub-regional Coordinator for the Caribbean, will provide on behalf of FAO for the services as **regional technical executing partner** responsible for coordination and the overall technical execution of the project in close collaboration with national co-executing partners. This will include the following responsibilities: (i) technical implementation of regional project activities and support to the national co-executing partners in the execution of national activities; (ii) the daily management of the project; (iii) monitoring of day-to-day project progress and achievement of results; and (iv) financial management and planning of the procurement of goods, minor works and services, by FAO. The WECAFC will prepare and send to the FAO project task force (see below), six-monthly Project Progress Reports (PPR), as well as a detailed Annual Work Plans and Budgets (AWP/B), and all the necessary documentation for preparing the annual Project Implementation Review (PIR) (see section 4.5.3 below).

A PCU will be set up within the WECAFC Secretariat at the United Nations House. Following Project Steering Committee (PSC) guidance and decisions, the main duty of PCU will be to ensure project coordination and execution through rigorous and efficient implementation of AWP/Bs. The PCU will consist of a Regional Project Coordinator (RPC) assisted by an administrative assistant on day-to-day matters and receiving support from the operations, travel and administration units at the FAO Subregional Office for the Caribbean. Technical assistance to the PCU will be provided by the regional partners, FAO Headquarters and the WECAFC Secretariat staff.

The PCU will act as Secretariat to the PSC and will coordinate work and closely follow up on the execution of project activities, manage daily project work and requirements, coordinate project interventions with other ongoing activities, and ensure a high level of collaboration among participating institutions and organizations at all levels (regional, national, and local). It will follow up on project progress and ensure timely delivery of inputs and outputs. Under FAO standards and procedures in accordance with this PRODOC and the AWP/B, PCU will plan procurement and contracting processes and select providers of small goods, and hiring of services, request the FAO Budget Holder (BH-see below) to process contracts and carry out procurement and payments. With the support from the FAO LTO the PCU will supervise and evaluate consulting services and their outputs (which will be the basis for payments). It will organize workshops and annual meetings for monitoring project progress and prepare AWP/Bs, making sure to collect all activity planning information from the seven countries and submit the advanced draft to the FAO Project Task Force (see below) for comments and to the PSC for their approval. The PCU will also be responsible for implementing the project's M&E plan, managing the monitoring system and the project's communication programme, preparing PPRs, and facilitate access to all information needed for the PIRs and the mid-term and final evaluations. It will submit PPRs and AWP/Bs to the PSC together with financial statements of expenditure reports (the latter prepared by the FAO BH). The

PCU will have a part-time administrative assistant. Furthermore, the PCU will have a full-time Regional Project Coordinator (RPC) financed by SCCF/GEF Funds (see Terms of Reference (TOR) in Appendix 5).

The **Regional Project Coordinator (RPC)** will be responsible for the day-to-day management and technical supervision of the project which includes the following: prepare AWP/Bs and assign tasks to PCU staff; draft TOR and technical requirements for regional consulting services as well as technical specifications for procurement of material and equipment; review and provide guidance to national co-executing partners on TORs and technical requirements for national consultancies and Letters of Agreements (LoAs) with regional and national level partners; technically supervise consultants, institutions and organizations executing regional project activities, and monitor and supervise the national deliveries under the LoAs with National Co-executing Partners; carry out field supervision visits and provide on-site advice to technical staff of national partners and other local partners involved in the project; coordinate and maintain daily contacts with all experts, organizations, and institutions working for or collaborating with the project; and collect project progress and risk management information from national co-executing partners; prepare PPRs and annual reports on invested co-financing and provide inputs for PIRs. Furthermore, he/she shall ensure a close relationship and collaboration on project activities with other relevant regional activities and partners including RFBs and the partners behind the projects mentioned above under section 4.1. Finally he/she shall contribute to the effective dissemination of lessons learned at the national and regional levels (see detailed draft TORs for the RPC in Appendix 6).

The national fisheries authorities in the project countries will be the **National Co-executing partners** directly responsible for technical implementation of national project activities, and day-to-day monitoring. The National Co-executing Partners will prepare a national AWP/B for national project activities to be submitted to the PCU in close collaboration with all relevant partners, including partners involved in the pilot sites. Likewise they will prepare six-monthly national PPR including progress in achieving national project outcomes and outputs, and any risks and risk management measures. Finally they will report on invested co-financing on an annual basis. A **National Project Coordinator (NPC)** will be appointed by each National Co-executing Partner to lead the project execution and support the National Co-executing Partner in all the above-mentioned tasks.

The NPCs will work in close collaboration with the various key stakeholders which include (but are not limited to), **fisherfolk, aquaculturists, fisherfolk organizations, fish processors, NGOs, national research institutes, other governmental institutions (coast guards, other ministries)** to guarantee the genuine involvement of relevant stakeholders in the project implementation.

The local organizations will appoint a representative to take part in the National Project Steering Committee (**NPSC)** that will be created in each country. The NPSCs will support the NPCs to overlook the technical implementation of national project activities and working plans. This project recognizes that the engagement of local stakeholders is essential to the success of the project and will be fundamental to achieve the project's expected outputs and outcomes. The project is applying a participatory approach to effectively involve and ensure a full engagement of fishers, fish workers and other

private sector actors in the project activities. A participatory approach was used during the project design/identification and Project Preparation Grant (PPG) phase and is the methodological basis for the project implementation.

In additional to the NPSCs, institutional arrangements and processes will be set up mainstreaming EAF, CCA and DRM into national policies in the project countries. Although the composition of the NPSCs and their TOR will be decided at inception in the first quarter of PY1 of the project, most of the organizations identified in the national consultations during the PPG phase have been already indicated to be willing to participate as potential members in the NPSCs and they will facilitate the dialogue and interaction with relevant stakeholders at the local and national level in each country.

In all countries, national consultations were held during the PPG phase with CSOs, regional academic institutions CNFO, NGOs, regional partners and RFBs. During these consultations, the needs and priorities, and the local and national key areas of action of the project, were identified together with the participating stakeholders. Through this intensive national stakeholder participation the national and regional ownership was established at the project design stage and this broad-based support will be promoted during project implementation.

A Technical Advisory Committee (TAC) will be established in which technical experts from the various countries and partner agencies will meet and discuss on specific technical measures related to fisheries, aquaculture and climate change adaptation. The TAC will have an advisory function to the RPSC and PCU and will allow technical experts to work together in a practical and informal manner in regional activities such as surveys and studies. It is foreseen that the TAC meets at least once per year, but that TAC meetings could be organized more frequently if held back-to-back with other regional level project activities, workshops, etc.

II. FAO's role and responsibilities

FAO's role in the project governance structure

The FAO will be the GEF implementation agency for this project. FAO will provide overall supervision and technical guidance services during project implementation. The administration of the GEF resources will be carried out in accordance with the rules and procedures of FAO, and in accordance with the agreement between FAO and the GEF Trustee.

As a GEF agency for this project, FAO will:

- Manage and disburse funds from GEF in accordance with the rules and procedures of the FAO;
- Oversee project implementation in accordance with the PRODOC, work plans, budgets, agreements with co-financiers and the rules and procedures of FAO;
- Provide technical guidance to ensure that appropriate technical quality is applied to all activities of the project;
- Carry out at least one supervision mission per year; and

- Report to the GEF Secretariat and Evaluation Office, through the annual PIR on project progress and provide financial reports to the GEF Trustee.

At the request of the seven countries participating in this project, in addition to being the GEF implementing agency, FAO will be the administrator of the GEF resources and will be in charge of the financial execution, procurement and contracting of goods and services, following rules and procedures stipulated in the FAO manual (mainly in the sections No. 502 and 507). The PCU, in line with PSC guidance, will request FAO to execute payments for the implementation of products and services delivered by consultants and contract holders. FAO will sign LoAs with national partners as agreed in the AWP/B.

As administrator of the GEF resources, FAO will submit semi-annual financial statements of expenditures to the PCU and the PSC to report progress of financial delivery in accordance with the PRODOC, the AWP/B and the Procurement and Travel Plan. FAO will perform budget revisions to keep the budget updated in the financial system of FAO Field Project Management Information System (FPMIS) and will communicate revised budgets to the PCU and the PSC so as to facilitate Project planning and execution. In collaboration with PCU and the PSC, FAO will participate in the planning and realization of contracting and procurement processes including selection of providers and consultants and issuing of contracts. FAO will also pay for products and services delivered after approval by the PCU.

FAO's roles in internal organization

The roles and responsibilities of FAO staff are regulated by the *FAO Guide to the Project Cycle, Quality for Results, 2015*, Annex 4: Roles and Responsibilities of the Project Task Force Members, and its updates.

The **FAO Subregional Coordinator for the Caribbean** (Office in Barbados) will be designated as the Budget Holder (**BH)** of the project and will be responsible for the management of the GEF resources. As a first step in the implementation of the project, the FAO Subregional Coordinator (SLC) will establish an interdisciplinary Project Task Force (PTF) within FAO, to guide the implementation of the project.

The PTF is a management and consultative body that integrate the necessary technical qualifications from the FAO relevant units to support the project. The PTM is composed of a Budget Holder, a Lead Technical Officer (LTO), the Funding Liaison Officer (FLO) and one or more technical officers based on FAO Headquarters or Decentralized Offices.
In this project, the Project Task Force includes representatives of the BH office, the Fisheries and Aquaculture Resources Use and Conservation Division (FIR) and the Fisheries and Aquaculture Policy and Economics Division (FIP) of the Fisheries and Aquaculture Department, the FAO-SLC Fishery and Aquaculture Officer, and the FAO-GEF Coordination Unit in TCI as the Funding Liaison Office.

In coordination with the FAO LTO and the HQ Technical Officer (see below), the BH will be responsible for timely operational, administrative and financial management of the project. The BH will, in particular, be responsible for: (i) submitting semi-annual financial statements of expenditures of the project to PCU and the PSC; (ii) procurement of goods and contracting of services for project activities, in accordance with FAO rules

and procedures, at the request of PCU and in accordance with the approved AWP/B; (iii) payments for goods and services delivered after approval by PCU; and (iv) preparing budget revisions for their clearance by the LTO and approval by the FAO-GEF Coordinating Unit at least once a year through the Field Programme Management Information System (FPMIS) of FAO.

The BH will, in consultation with the PTF, give no objection to the AWP/Bs submitted by the PCU, as well as PPRs. The BH will be responsible for preparing the PPRs, obtaining the LTO's technical clearance, approve the final PPRs and upload them to FPMIS.

The **Lead Technical Officer (LTO**) for the project will be the Fisheries and Aquaculture Officer of the FAO Subregional Office for the Caribbean (FAO SLC). The role of the LTO is central to FAO's comparative advantage for projects. The LTO will oversee and carry out technical backstopping to the project implementation. The LTO will support the BH in the implementation and monitoring of the AWP/Bs, including work plan and budget revisions. The LTO is responsible and accountable for providing or obtaining technical clearance of technical inputs and services procured by the Organization.

In addition, the LTO will provide technical backstopping to the PCU to ensure the delivery of quality technical outputs. The LTO will coordinate the provision of appropriate technical support from PTF to respond to requests from the PSC. The LTO will be responsible for:

- Review and give no-objection to TORs for consultancies and contracts to be performed under the project, and to CVs and technical proposals short-listed by the PCU for key project positions, goods, minor works, and services to be financed by GEF resources;

- Supported by the FAO SLC, review and clear final technical products delivered by consultants and contract holders financed by GEF resources before the final payment can be processed;

- Assist with review and provision of technical comments to draft technical products/reports during project execution;

- Review and approve project progress reports submitted by the RPC, in cooperation with the BH;

- Support the FAO Representative in examining, reviewing and giving no-objection to AWP/B submitted by the RPC, for their approval by the Project Steering Committee;

- Ensure the technical quality of the six-monthly Project Progress Reports (PPRs). The PPRs will be prepared by the RPC, with inputs from the PCU and the NPCs. The BH will submit the PPR to the FAO/GEF Coordination Unit for comments, and the LTO for technical clearance. The PPRs will be submitted to the PSC for approval twice a year. The BH will upload the approved PPR to FPMIS.

- Supervise the preparation and ensure the technical quality of the annual PIR. The PIR will be drafted by the RPC, with inputs from the PCU and the NPCs. The PIR will be submitted to the BH and the FAO-GEF Coordination Unit for approval and finalization. The FAO/GEF Coordination Unit will submit the PIRs to the GEF

Secretariat and the GEF Evaluation Office, as part of the Annual Monitoring Review report of the FAO-GEF portfolio. The LTO must ensure that the RPC and the PCU have provided information on the co-financing provided during the year for inclusion in the PIR;

- Conduct annual (or as needed) supervision missions;
- Review the TORs for the mid-term evaluation, participate in the the mid-term workshop with all key project stakeholders, development of an eventual agreed adjustment plan in project execution approach, and supervise its implementation; and
- Review the TORs for the final evaluation; participate in the mission including the final workshop with all key project stakeholders, development and follow-up to recommendations on how to insure sustainability of project outputs and results after the end of the project.

The **HQ Officer** is a member of the PTF, as a mandatory requirement of the FAO Guide to the Project Cycle. The HQ Officer has most relevant technical expertise - within FAO technical departments - related to the thematic of the project. The HQ Technical Officer will provide effective functional advice to the LTO to ensure adherence to FAO corporate technical standards during project implementation, in particular:

- Supports the LTO in monitoring and reporting the identified risks and mitigation measures (Appendix 4) in close coordination with the project partners.
- Provides technical backstopping for the project work plan.
- Clears technical reports, contributes to and oversees the quality of Project Progress Report(s) (PPRs – see Section 4.5).
- May be requested to support the LTO and PTF for implementation and monitoring.
- Supports the LTO and BH in producing the first draft TOR of the Evaluation team in for the Mid-Term and Final Evaluation, review the composition of the evaluation team and support the evaluation function.

The FAO-GEF Coordination Unit will act as **Funding Liaison Officer (FLO).** The FAO/GEF Coordination Unit will review the PPRs and financial reports, and will review and approve budget revisions based on the approved Project Budget and AWP/Bs. The FAO/GEF Coordination Unit will review and provide a rating in the annual PIR(s) and will undertake supervision missions as necessary. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the FAO GEF Coordination Unit. The FAO GEF Coordination Unit may also participate in the mid-term review and final evaluation, and in the development of corrective actions in the project implementation strategy if needed to mitigate eventual risks affecting the timely and effective implementation of the project. The FAO GEF Coordination Unit will in collaboration with the FAO Finance Division request transfer of project funds from the GEF Trustee based on six-monthly projections of funds needed.
The FAO Financial Division will provide annual Financial Reports to the GEF Trustee and, in collaboration with the FAO-GEF Coordination Unit, request project funds on a six-monthly basis to the GEF Trustee.

The **FAO Finance Division** will provide annual Financial Reports to the GEF Trustee and, in collaboration with the FAO/GEF Coordination Unit, call for project funds from the GEF Trustee on a six-monthly basis.

b) Project technical, coordination and steering committees

The Project Steering Committee (PSC) will be set up as a political-technical structure for planning and consensus-building in support of project execution and coordination. The PSC members will be a representative from WECAFC Secretariat and NPCs or alternate competent officers designated by the participating governments and regional partner organization representatives, the FAO BH and LTO. The PSC will take decisions on the overall management of the project and will be responsible for maintaining the strategic approach of the project's specific operational tasks. Its functions include the following: (i) general supervision of the progress of the project and the achievement of expected results through the semiannual PPR; (ii) decision-making with regard to the organization, coordination and execution of the project; (iii) facilitate cooperation among National Co-Executing Partners, FAO, RFB and other institutions and organizations participating in the project; (iv) bring to the attention of PCU other activities underway or planned to facilitate the collaboration between the project and other programmes, projects and initiatives related to climate change adaptation ; (v) ensure co-financing is provided in a timely and efficient manner; (vi) review semi-annual PPRs and financial reports, and approve AWP/Bs; and (vii) provide comments on TORs for the mid-term and the final evaluations and the draft evaluation reports as well as decide on and support actions to be taken to follow up on recommendations. The RPC will act as Secretary to the PSC. The PSC will normally meet once a year, although exceptional meetings (e.g. during the first year of start-up, if required) could be called. The host country for the PSC meeting will change annually (with no country repeating) and the host country for the meeting will provide a Chairperson.

4.3 FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is USD 43,002,000 of which USD 5,460,000 will be financed by the SCCF grant and USD 37 542 000 will be co-financed by the Government of Antigua and Barbuda, Government of Dominica, Government of Grenada, Government of St. Kitts and Nevis Government of Saint Lucia, Government of St. Vincent and the Grenadines, Government of Trinidad and Tobago, WECAFC, CRFM, TNC, CARIBSAVE Partnership, University of the West-Indies and FAO.

4.3.1 Financial plan

Table A includes the cost by component, output and co-financier and Table B includes the sources and types of confirmed co-financing. FAO as GEF implementing agency will be responsible for the execution of the GEF resources and FAO co-financing.

Table A: Project costs by component, outputs and co-financier

new Financial Plan for re-submission v.2

Table B: Confirmed sources of co-financing

Sources of Co-financing	**Name of Co-financier (source)**	**Type of Co-financing**	**Co-financing Amount** ($)
National government Antigua and Barbuda	Fisheries Division of the Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs	Cash	1,900,000
National government Antigua and Barbuda	Fisheries Division of the Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs	In-kind	1,350,000
National government Dominica	Fisheries Division of the Ministry of the Environment, Natural Resources, Physical Planning & Fisheries	Cash	0
National government Dominica	Fisheries Division of the Ministry of the Environment, Natural Resources, Physical Planning & Fisheries	In-kind	1,250,000
National government Grenada	Fisheries Division of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment	Cash	0
National government Grenada	Fisheries Division of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment	In-kind	1,500,000
National government St. Kitts and Nevis	Department of Marine Resources of the Ministry of Agriculture, Marine Resources and Cooperatives	Cash	0
National government St. Kitts and Nevis	Department of Marine Resources of the Ministry of Agriculture, Marine Resources and Cooperatives	In-kind	1,250,000
National government Saint Lucia	Fisheries Division of the Ministry of Agriculture, Food Production, Fisheries, Co-operation and Rural Development	Cash	3,640,000
National government Saint Lucia	Fisheries Division of the Ministry of Agriculture, Food Production, Fisheries, Co-operation and Rural Development	In-kind	1,840,000
National government St. Vincent and the Grenadines	Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry	Cash	300,000
National government St. Vincent and the Grenadines	Fisheries Division of the Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry	In-kind	1,200,000
National government Trinidad and Tobago	Fisheries Division of Ministry of Land and Marine Resources	Cash	3,900,000
National government Trinidad and Tobago	Fisheries Division of Ministry of Land and Marine Resources	In-kind	15,600,000
University of the West-Indies	CERMES	Cash	102,000
University of the West-Indies	CERMES	In-kind	110,000
Caribbean Regional Fisheries Mechanism (CRFM)		Cash	0

Caribbean Regional Fisheries Mechanism (CRFM)		In-kind	400,000
TNC		Cash	200,000
TNC		In-kind	0
CARIBSAVE Partnership		Cash	0
CARIBSAVE Partnership		In-kind	1,000,000
FAO/WECAFC		Cash	1,000,000
FAO/WECAFC		In-kind	1,000,000
Total Co-financing			**37,542,000**

4.3.2 SCCF inputs

The SCCF grant resources, totalling USD 5 460 000 over the four-year life of the project, will be used to generate the adaptation benefits (see section 2.5) by complementing the co-financing of the project countries, FAO and other partners. The resources will be allocated primarily for the provision of technical assistance, capacity building and training, gear trials and assessment of management measures, information generation and to support knowledge and experience sharing. The types of inputs the SCCF funds will finance include: (i) local and international consultants for technical support and project management; (ii) inputs for implementation for activities at pilot sites, (iii) LoAs/contracts with research and training institutions and other service providers supporting the delivery of specific project activities; (iv) travel, expendable and non-expendable office equipment; and (v) training and awareness raising material.

4.3.3 Government inputs

The governments of the seven project countries have confirmed co-financing of USD 33 730 000 (whereof USD 9 740 000 in cash). The contributions refer to both in-kind co-financing as well as in-cash financing from the fisheries divisions. Staff time and office facilities will be provided for project management at the national level. Moreover, as some project activities complement already planned government activities with regard to fisheries management, governments will ensure integration of the SCCF funded activities into existing programmes and the creation of synergies and cost effectiveness. Government inputs will hence also include this overall framework and coordination for implementation of project activities.

4.3.4 FAO inputs

FAO will provide technical assistance, support, training and supervision of the implementation of the activities funded by SCCF/GEF resources. FAO-SLC will also provide office space and staff support for the PCU at the United Nations House in Barbados.

4.3.5 Other co-financiers inputs

Other co-financers include all regional partners as listed in section 1.1.3 which will contribute their time, capacity development, information dissemination, networking

across the wider region and development of regional policy and strategic advice and other activities.

4.3.6 Financial management of and reporting on SCCF resources

Financial management and reporting in relation to the SCCF resources will be carried out in accordance with FAO's rules and procedures and the Financial Procedures Agreement between FAO and the GEF Trustee. FAO will maintain a separate account in US dollars for the GEF resources of the project showing all income and expenditure.

Disbursement of funds to national technical executing partners and other partners and service providers

FAO will sign LoAs with the national technical executing partners in each project country as well as to identified regional partners (as required). The agreed amounts will be transferred in instalments as outlined in the AWP/B for implementation of national activities. The first instalment shall be advanced to executing partners within two weeks following signature of the LoA and the submission to FAO of a first semester work plan for the execution of the SCCF financed project activities under their responsibility as described in this PRODOC.

Disbursement of subsequent instalments will be subject to satisfactory reporting on funds already received. The FAO BH should certify that reporting requirements under the terms of the LoA have been met and that PPR for the activities completed have been submitted to and accepted by FAO as showing satisfactory management and use of GEF/SCCF resources.

The executing partners will follow the rules and regulations of the FAO (mainly FAO manual sections No. 502 and 507) and the fiduciary standards of the GEF, as will be described in the LoA, in order to ensure an adequate management and use of project funds. The executing partners shall maintain a bank account in US dollars for the funds received from the FAO, in accordance with accepted accounting standards (showing income and expenses).

FAO may also sign LoAs with other partners and service providers for specific activities. These LoAs will be executed in accordance with FAO rules and regulations.

Financial statements and reporting

All the financial reports shall be in US dollars and shall be prepared by FAO with inputs from financial reports from executing partners. The BH shall prepare six-monthly statement of expenditures and final accounts for the project SCCF resources, showing amount budgeted for the year, amount expended since the beginning of the year, and separately, the unliquidated obligations as follows:

1. Details of project expenditures on outcome-by-outcome basis, reported in line with Project Budget (Appendix 3 of this Project document), as at 30 June and 31 December each year.
2. Final accounts on completion of the Project on a component-by-component and outcome-by-outcome basis, reported in line with the Project Budget (Appendix 3 of this Project document).

3. A final statement of account in line with FAO Oracle Project budget codes, reflecting actual final expenditures under the Project, when all obligations have been liquidated.

Financial statements: Within 30 working days of the end of each semester, the FAO SLC shall submit six-monthly statements of expenditure of GEF resources, to present to the Project Steering Committee. The purpose of the financial statement is to list the expenditures incurred on the project on a six monthly basis compared to the budget, so as to monitor project progress and to reconcile outstanding advances during the six-month period. The financial statement shall contain information that will serve as the basis for a periodic revision of the budget.

The BH will submit the above financial reports for review and monitoring by the LTO and the FAO GEF Coordination Unit. Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the GEF Financial Procedures Agreement and submitted by the FAO Finance Division.

Responsibility for cost overruns: The BH shall utilize the GEF project funds in strict compliance with the Project Budget (Appendix 3) and the approved AWP/Bs. The BH can make variations provided that the total allocated for each budgeted project component is not exceeded and the reallocation of funds does not impact the achievement of any project output as per the project Results Framework (Appendix 1). At least once a year, the BH will submit a budget revision for approval of the LTO and the FAO/GEF Coordination Unit through FPMIS. Cost overruns shall be the sole responsibility of the BH.

Audit

The project shall be subject to the internal and external auditing procedures provided for in FAO financial regulations, rules and directives and in keeping with the Financial Procedures Agreement between the GEF Trustee and FAO.

The audit regime at FAO consists of an external audit provided by the Auditor-General (or persons exercising an equivalent function) of a member nation appointed by the Governing Bodies of the Organization and reporting directly to them, and an internal audit function headed by the FAO Inspector-General who reports directly to the Director-General. This function operates as an integral part of the Organization under policies established by senior management, and furthermore has a reporting line to the governing bodies. Both functions are required under the Basic Texts of FAO which establish a framework for the TOR of each. Internal audits of imprest accounts, records, bank reconciliation and asset verification take place at FAO field and liaison offices on a cyclical basis.

4.4 PROCUREMENT

Careful procurement planning is necessary for securing goods, services and works in a timely manner, on a "Best Value for Money" basis, and in accordance with the Rules and Regulations of FAO. It requires analysis of needs and constraints, including forecast of the reasonable timeframe required to execute the procurement process. Procurement and delivery of inputs in technical cooperation projects follow FAO's rules and

regulations for the procurement of supplies, equipment and services (i.e. Manual Sections 502 and 507). *Manual Section 502*: "Procurement of Goods, Works and Services" establishes the principles and procedures that apply to procurement of all goods, works and services on behalf of the Organization, in all offices and in all locations, with the exception of the procurement actions described in Appendix A – Procurement Not Governed by Manual Section 502. *Manual Section 507* establishes the principles and rules that govern the use of Letters of Agreement (LoA) by FAO for the timely acquisition of services from eligible entities in a transparent and impartial manner, taking into consideration economy and efficiency to achieve an optimum combination of expected whole life costs and benefits ("Best Value for Money").

The BH will draw up an annual procurement plan for major items which will be the basis of requests for procurement actions during implementation. The first procurement plan will be prepared at the time of project start-up, if not sooner. The plan will include a description of the goods, works, or services to be procured, estimated budget and source of funding, schedule of procurement activities and proposed method of procurement. In situations where exact information is not yet available, the procurement plan should at least contain reasonable projections that will be corrected as information becomes available.

4.5 MONITORING AND REPORTING

M&E of progress in achieving project results and objectives will be done based on the targets and indicators established in the project Results Matrix (Appendix 3) and in accordance with the descriptions of components 1-3 in sections 2.3 and 2.4. Component 4 contains the activities related to M&E and within this framework, the project M&E plan has been budgeted at USD 130 000 and tasks and responsibilities are defined in the project's preliminary monitoring plan in section 5.5.4 below.

4.5.1 Oversight and monitoring responsibilities

M&E activities will follow FAO and GEF M&E policies and guidelines and will be achieved through: (i) day-to-day monitoring and supervision of project progress (PCU and NPCs); (ii) technical monitoring of project activities by the LTO/LTU; (iii) midterm and final evaluations (independent consultants and FAO Evaluation Office); and (iv) continual oversight, monitoring and supervision missions (FAO).

At the initiation of implementation of the GEF Project, the PCU will set up a project progress monitoring system coordinated with subsystems, as appropriate, in each participating country. Participatory mechanisms and methodologies for systematic data collection and recording will be developed in support of outcome and output indicator M&E. During the inception workshop (see section 5.5.3 below), M&E related tasks to be addressed will include: (i) presentation and clarification (if needed) of the project's Results Framework with all project stakeholders; (ii) review of the M&E indicators and their baseline; (iii) drafting the required clauses to include in consultants' contracts to ensure they complete their M&E reporting functions (if relevant); and The Regional Project Coordinator (see TORs in Appendix 5) will prepare a draft monitoring and evaluation matrix that will be discussed and agreed upon by all stakeholders during the inception workshop. The **M&E matrix** will be a management tool for the RPC, the PCU, the NPCs, and the Project Partners to: i) six-monthly monitor the achievement of output

indicators; ii) annually monitor the achievement of outcome indicators; iii) clearly define responsibilities and verification means; iv) select a method to process the indicators and data.
The **M&E Plan** will be prepared by the RPC in the three first months of the PY1 and validated with the PSC. The M&E Plan will be based on the M&E Table 3.4 and the M&E Matrix and will include: i) the updated results framework, with clear indicators per year; ii) updated baseline, if needed, and selected tools for data collection (including sample definition); iii) narrative of the monitoring strategy, including roles and responsibilities for data collection and processing, reporting flows, monitoring matrix, and brief analysis of who, when and how will each indicator be measured. Responsibility of project activities may or may not coincide with data collection responsibility; iv) updated implementation arrangements, if needed; v) inclusion of the tracking tool indicators, data collection and monitoring strategy to be included in the mid-term review and final evaluation; vi) calendar of evaluation workshops, including self-evaluation techniques.

4.5.2 Indicators and information sources

To monitor project outputs and outcomes including contributions to global adaptation benefits, specific indicators have been established in the Project Results Framework (see Appendix 1). The Project Results Framework indicators and means of verification will be applied to monitor both project performance and impact. Following FAO monitoring procedures and progress reporting formats, data collected will be sufficiently detailed that can track specific outputs and outcomes, and flag project risks early on. Output target indicators will be monitored on a six-monthly basis, and outcome target indicators will be monitored on an annual basis, if possible, or as part of the mid-term and final evaluations.

The project output and outcome indicators have been designed to monitor climate change adaptation impacts and progress in building and consolidating capacities for building resilience to climate change at the local and national level in the sevenn project countries.

Climate change indicators will monitor:

Outcome 1.1 Increased awareness and understanding of climate change impacts and vulnerability

- Vulnerability assessments carried out at the local level in project countries
- Number of people will have an increased awareness of climate change impacts on the fisheries sector and adaptation practices

Outcome 2.1: Improved resilience of fisherfolk and coastal community members

- Number of direct beneficiaries who will benefit from improved resilience of the fisheries sector to climate change
- Number of people who will be adopting adaptation technologies (men and women)
- Number of people (men and women) who will benefit from adoption of diversified, climate livelihood options by means of adaptation measures

Outcome 2.2 Improved resilience of aquaculturists

- Number of people who will benefit through rehabilitation of existing and establishing of new aquaculture centres and capacity building activities

Outcome 3.1 Climate change adaptation mainstreamed in multilevel fisheries governance

- Improved capacity of national institutions in five project countries to identify, prioritize, implement, monitor and evaluate adaptation strategies
- Improved national policies and plans to identify, prioritize and integrate adaptation strategies and measures in five project countries

4.5.3 Reporting schedule

Specific reports that will be prepared under the M&E program are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) PPRs; (iv) Annual PIR; (v) Technical reports; (vi) Co-financing reports; and (vii) Terminal Report. In addition, assessment of the SCCF AMAT Tracking Tool against the baseline (completed during project preparation) will be required at mid-term and final project evaluation.

Project Inception Report. After FAO internal approval of the project an inception workshop will be held. Immediately after the workshop, the RPC will prepare a project inception report in consultation with the FAO Subregional office for the Caribbean, WECAFC Secretariat and other project partners. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, and the M&E Matrix (see above) based on the M&E table presented in section 4.5.4 below. The draft inception report will be circulated to FAO and the PSC for review and comments before its finalization, no later than four months after project start-up. The report will be cleared by the FAO BH, LTO and the FAO GEF Coordination Unit. The BH will upload it in FPMIS..

Annual Work Plan and Budget (AWP/B). The RPC will present a draft AWP/B to the PSC no later than 10 December of each year. The AWP/B should include detailed activities to be implemented by project outcomes and outputs and divided into monthly timeframes and targets and milestone dates for output and outcome indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The FAO SLC will circulate the draft AWP/B to the FAO PTF and will consolidate and submit FAO comments. The AWP/B will be reviewed by the PSC and the PCU will incorporate any comments. The final AWP/B will be sent to the PSC for approval and to FAO for final no-objection. The BH will upload the AWP/Bs in FPMIS.

Project Progress Reports (PPR). The PPRs are used to identify constraints, problems or bottlenecks that impede timely implementation and take appropriate remedial action. PPRs will be prepared based on the systematic monitoring of output and outcome indicators identified in the Project Results Framework (Appendix 1), AWP/B and M&E Plan. Each semester the Regioanl Project Coordinator (RPC) will prepare a draft PPR, and will collect and consolidate any comments from the FAO PTF. The RPC will submit the final PPRs to the FAO SLC every six months, prior to 10 June (covering the period between January and June) and before 10 December (covering the period between July

and December). The July-December report should be accompanied by the updated AWP/B for the following Project Year (PY) for review and no-objection by the FAO PTF. Once these comments have been incorporated, the LTO will give his/her technical clearance, the BH will approve and remit the final PPR to the Project Steering Committee (PSC) for final approval. The BH will upload the PPRs in FPMIS..

Annual Project Implementation Review (PIR). The RPC, under the supervision of the LTO and BH and in coordination with the national project partners, will prepare a draft annual PIR report[65] covering the period July (the previous year) through June (current year) no later than July 1st every year. The LTO will finalize the PIR and will submit it to the FAO-GEF Coordination Unit for review by July 10th. The FAO-GEF Coordination Unit, the LTO, and the BH will discuss the PIR and the ratings[66]. The LTO is responsible for conducting the final review and providing the technical clearance to the PIR(s). The LTO will submit the final version of the PIR to the FAO-GEF Coordination Unit for final approval. The FAO-GEF Coordination Unit will then submit the PIR(s) to the GEF Secretariat and the GEF Independent Evaluation Office as part of the Annual Monitoring Review of the FAO-GEF portfolio. The PIR will be uploaded to FPMIS by the FAO-GEF Coordination Unit.

Technical Reports. Technical reports will be prepared as part of project outputs and to document and share project outcomes and lessons learned. The drafts of the main technical reports must be submitted by the RPC to the Technical Advisory Committee (TAC) and the LTO for review and clearance, prior to finalization and publication. Copies of the technical reports will be distributed to the PSC and other project partners as appropriate. These reports will be uploaded in FAO FPMIS by the BH.

Co-financing Reports. The RPC will be responsible for collecting the required information and reporting on in-kind and cash co-financing provided by all the project co-financiers and eventual other new partners not foreseen in the PRODOC. Every year, the RPC will submit the report to the FAO BH before July 10th covering the period July (the previous year) through June (current year). This information will be used in the PIRs.

SCCF Tracking Tools. Following the GEF policies and procedures, the tracking tools for the CCA focal area will be submitted to the GEF Secretariat at three moments: (i) with the project document at Chief Executing Officer (CEO) endorsement; (ii) at the project's mid-term evaluation; and (iii) with the project's terminal evaluation.

Final Report. Within three months before the end date of the project, the RPC will submit to the PSC and the FAO BH a draft Final Report. The main purpose of the final report is to give guidance to authorities (ministerial or senior government level) on the policy decisions required for the follow-up of the Project, and to provide the donor with information on how the funds were utilized. Therefore, the final report is a concise account of the main **products, results, conclusions and recommendations** of the Project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists, but who

[65] Prior to the preparation of the PIR report, the FAO-GEF Coordination Unit will provide the updated format as every year some new requirements may come from the GEF.

[66] The RPC, the BH, the LTO and the FAO/GEF Coordination Unit should assign ratings to the PIR every year. The ratings can or cannot coincide among the project managers.

need to understand the policy implications of technical findings and needs for ensuring sustainability of project results. Work is assessed, lessons learned are summarized, and recommendations are expressed in terms of their application in the Caribbean Region in the context of the climate change and sustainable development priorities at national and departmental levels, as well as in practical execution terms. This report will specifically include the findings of the final evaluation as described in section 4.6 below. A final project review meeting should be held to discuss the draft terminal report with the PSC before it is finalized by the RCS and approved by the BH, LTO and the FAO-GEF Coordination Unit.

4.5.4 Summary of main monitoring and evaluation activities

Type of M&E Activity	Responsible Parties	Time-frame	Budget
Inception Workshop	RPC, FAO SLC (with support from the LTO, and FAO-GEF Coordination Unit	Within three months of project start up	USD 25,000
Project Inception Report	RPC, cleared by LTO, BH, and the FAO GEF Coordination Unit	Immediately after the workshop	-
Supervision visits and rating of progress in PPRs and PIRs	RPC; FAO (FAO SLC, LTO). FAO-GEF Coordination Unit may participate in the visits if needed.	Annual or as required	FAO visits will be borne by GEF agency fees Project Coordination visits shall be borne by the project's travel budget
Project Progress Reports (PPR)	RPC, with contributions of project partners and other participating institutions	Six-monthly	-
Project Implementation Review report (PIR)	Drafted by the RPC, with the supervision of the LTO and BH. Approved and submitted to GEF by the FAO-GEF Coordination Unit	Annual	FAO staff time financed though GEF agency fees. PCU time covered by the project budget
Co-financing Reports	RPC with inputs from other co-financiers	Annual	-
Technical reports	RPC and FAO (LTO, other services)	As appropriate	-

Type of M&E Activity	Responsible Parties	Time-frame	Budget
Mid-term Evaluation	External Consultants, FAO Office for Evaluation in consultation with the project team including the FAO GEF Coordination Unit and other partners	At mid-point of project implementation	USD 40 000 for external, consultancy. FAO staff time and travel costs will be financed by GEF agency fees.
Final evaluation	External Consultants, FAO Office for Evaluation in consultation with the project team including the FAO GEF Coordination Unit and other partners	At the end of project implementation	USD 40 000 for external, consultants and associated costs. FAO staff time and travel costs will be financed by GEF agency fees.
Terminal Workshop	RPC, FAO (supported by LTO, BH, and the FAO GEF Coordination Unit)	In the last 4 months before project termination	USD 20,000
Terminal Report	RPC, FAO (BH, LTO, the FAO GEF Coordination Unit and TCS reporting Unit)	Three months before the end date of the project.	USD 5,000
Total Budget			**USD 130,000**

4.6 PROVISION FOR EVALUATIONS

An independent Mid-Term Evaluation (MTE) will be undertaken at the end of the first 24 months of project implementation to review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. A mid-term evaluation (MTE) is a systematic analysis held around the half-way point in project life that focuses on implementation issues. The MTE is managed by FAO Evaluation Office (OED) and is meant to facilitate the mid-course corrective action. According to GEF Reporting Guidelines, mid-term reviews/evaluations are required for all full-sized projects and are encouraged for medium-sized projects, where appropriate and feasible. The MTE will, *inter alia*:

a) review the effectiveness, efficiency and timeliness of project implementation;
b) analyze effectiveness of partnership arrangements; identify issues requiring decisions and remedial actions;
c) propose any mid-course corrections and/or adjustments to the logical framework and implementation strategy as necessary; and
d) highlight technical achievements and lessons learned derived from project design, implementation and management.

The MTE should be accompanied by tracking tools for full-sized projects.

Findings and recommendations of this review will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term if necessary. FAO Office of Evaluation (OED) will arrange for the MTE in consultation with project management.

An independent Final Evaluation (FE) will be carried out three months prior to the terminal review meeting. The FE will aim to identify the project impacts, sustainability of project results and the degree of achievement of long-term results. The FE will also have the purpose of indicating future actions needed to expand on the existing Project in subsequent phases, mainstream and up-scale its products and practices, and disseminate information to management authorities and institutions with responsibilities in food security, conservation and sustainable use of natural resources, small farmer agricultural production and ecosystem conservation to assure continuity of the processes initiated by the Project. The FE should be accompanied by tracking tools for full-sized projects. Critical elements that both the MTE and FE will pay special attention to are the outcome indicators.

4.7 COMMUNICATION AND VISIBILITY

In many of the project activities the high visibility of the project will be addressed, as well as mechanisms to ensure that communications in support of the project's messages are effective. Component 4 deals specifically with dissemination of information and sharing of project results (in addition to progress monitoring), including developing a project website, publication of best practices and lessons learned, and support to GEF CC4FISH activities. In addition, the project will ensure mechanisms for the greatest possible dissemination to the documentation generated by the project, and in particular the Final Report, technical reports and midterm and final evaluations reports.

In addition, the other components have elements of communication, especially at regional level. Activities of vulnerability assessments and modelling of fisheries abundance in Component 1 will have high visibility among authorities and decision-makers of the Fisheries Divisions and other government agencies in the project countries, RFBs, direct beneficiaries such as fisherfolk, aquaculturists as well as among many civil society stakeholders (community organizations, NGOs) with which the project will communicate and cooperate in public awareness activities.

Workshops under this component will support training and awareness raising of stakeholders, and dissemination of information and results of the activities undertaken. Information and training materials will support the communication of key messages under this component of the project. Component 2 promotes exchanges of experiences on technical and management measures by for climate change adaptation by means of exchange programs with a view to improving the climate change adaptation mechanisms in the region. In this component workshops and training materials will serve to transmit knowledge and raise awareness among beneficiaries with respect to the key project message for this component, improving fisherfolk, aquaculturists and coastal community resilience to climate change and variability.

Component 3 includes activities strengthening national level institutional and policy frameworks for climate change adaptation in the fisheries which will also serve to transmit knowledge and raise awareness among institutions with respect to mainstreaming climate change adaptation in multi-level fisheries governance. In Component 3, the communication and regional aspects are more implicit as activities focus on the national level, including a variety of stakeholders (including policy makers, civil society, direct beneficiaries, NGOs), but exchanges of experiences and lessons learned will be also be shared at the regional level.

The project will work in close collaboration with the RFBs (WECAFC and CRFM) to disseminate approaches developed and applied under the project in the whole Caribbean region. Similarly, the two RFBs will promote the fisheries management measures taken at regional level in the project countries, in order to support more sustainable use of the fisheries resources. This two-way approach between national to regional institutions will be ensured through already available well-functioning communication channels between the countries and the RFBs. The collaboration with the RFBs will provide the project a range of opportunities to increase visibility at regional level and promote application of its lessons learned and results in the wider Caribbean region.

SECTION 5 – SUSTAINABILITY OF RESULTS

5.1 SOCIAL SUSTAINABILITY

The different dimensions of sustainability are interlinked. In accordance with the United Nations Conference on Sustainable Development (Rio+20) outcome document "The future we want", there is a need for considering economic, social and environmental sustainability at the same time. Hence, social and economic sustainability depends on environmental sustainability, especially in the longer-term, and the adaptation benefits created by the project will form the basis for social sustainability for generations to come by enhancing resilience of fishers, aquaculturists and fisherfolk organizations to climate change.

Project implementation will include defining factors that ensure social sustainability[67]:

- **Capacity development** (see sub-section 5.4).

- **Gender equality and gender mainstreaming** at institutional and community levels. The project will focus on promoting participation of women, empowering them to foster their participation in planning and decision making and to improve their productivity, income and living conditions. Participation will be promoted through multi-sectorial workshops, consultation and validation processes to be applied to the development of the different project activities, particularly through the vulnerability assessments carried out in component 1 and the public awareness program (Component 1); the improvement of improving processing facilities and providing improved food safety training, which results in less post-harvest losses and improved livelihoods of processing workers, which are mostly women (component 2); and the marketing of underutilized fish species (component 2). Participation will also be promoted in component 3, where the activities in relation to the participatory policy development and planning processes will require the active collaboration, ownership and buy-in by women stakeholders. Developing practical organisational capacity through training of fisheries stakeholders for mainstreaming CCA and DRM into EAF management plans including co-management learning by doing will also involve women. The outreach activities via public awareness activities will also involve women both as trainers as well as recipients. At least 20 percent of the beneficiaries of component 1, 2 and 3 will be women. The data will be disaggregated by gender for monitoring differential impacts of the project, and women fishers, fish processors and retailers will be particularly involved and represented in all project activities.

- **Food security** will be promoted in components 1, 2 and 3. In component 1 the vulnerability assessments will address food insecurity through climate change. In component 2 food security of fisherfolk and coastal communities will be addressed through the development of new fisheries methods and practices adapted to climate change and possible promotion of underdeveloped fisheries;

[67] Based on FAO, *Environmental Impact Assessment - Guidelines for FAO Field Projects*, "Annex 3: Basic Policy Requirement for field projects": http://www.fao.org/docrep/016/i2802e/i2802e.pdf

improvement of certain processing facilities and providing food safety training will result in less post-harvest losses; and the development and implementation of new fishing gears (e.g. FADs/ smart FADs). The project will also promote rehabilitation of existing aquaculture centres and new aquaculture centres, which will increase sustainable fish and food production (in the case of aquaponics) and thus promote food security. In component 3 mainstreaming EAF/CC and DRM into fisheries management and planning-legislation and developing practical organisational capacity for implementing the EAF addresses food security as the EAF encompasses the improvement of food security for both marine capture fisheries and aquaculture. The EAF strives to improve conservation of marine ecosystems and thus enhance food security for now and future generations as well as that is strives to enhance fisheries management. The EAF aims to meet the goals of satisfying societal and human needs for food and economic benefits through management actions that focus on responsible fisheries and long-terms sustainable utilization of the fish stocks and aquatic resources in general.

- **Ownership** by local institutions, producer associations, and local communities of all project processes (see sub-section 5.4).

5.2 ENVIRONMENTAL SUSTAINABILITY

Project implementation will make use of ecosystem based approaches, such as the EAF. This is an approach to fisheries management and development that strives to balance diverse societal objectives by taking into account knowledge and uncertainties regarding biotic, abiotic and human components of ecosystems and their interactions, and by applying an integrated approach to fisheries within ecologically meaningful boundaries. By definition it is a promoter of comprehensive conservation, restoration and sustainable use practices in the marine sector; it also advocates for the inclusion of stakeholders in decision making at the lowest level possible. By implementing the project within a framework of internationally recognised policies and practices, coherence of continued efforts is ensured which would support sustainability.

Project activities will directly or indirectly contribute to environmental sustainability by:

- Institutional strengthening of government agencies related implementation of EAF in the seven project countries;
- Capacity development of stakeholders involved in application of the EAF (see sub-section 5.4);
- Promotion of sustainable production systems (aquaculture and capture fisheries);
- Development of a model examining the impacts of climate change on the abundance of crucial fish species in the region;
- Communication and environmental education strategies: will serve to raise awareness about the importance of the impacts of climate change on the marine ecosystem and socio-ecosystem connectivity.
- Support is provided to enhancing livelihoods and identifying alternative livelihoods. By ensuring secure livelihoods, responsible fishing practices that

have been introduced are more likely to be maintained and hence contribute to environmental sustainability.

- Best practices and lessons learned with regard to management solutions introduced by the project in pilot sites will be shared among project countries and also in the wider region through collaboration with RFBs. This will promote sustainability and will lead to scaling-up more broadly in the region.

5.3 FINANCIAL AND ECONOMIC SUSTAINABILITY

The financial and economic sustainability of the productive activities of the project will be achieved to the extent that these activities are financially and economically viable for fisherfolk and aquaculturists and their families, coastal communities, producer organizations, CSOs and institutional partners. The project will promote sustainable production systems seeking to simultaneously conserve and manage ecosystem services in the long term and improve the livelihoods of beneficiaries. The financial and economic sustainability refers to two main aspects: the sustainability of fishing operations and related livelihoods, and the sustainability of institutional arrangements – often supported by governments – needed to implement improved management practices and responsible fishing practices.

The long-term economic and financial sustainability in relation to fishing operations is closely linked to the overall project objectives and to environmental sustainability. Ineffective management practices contribute to risk and uncertainty and low resilience, and changing these is crucial for long-term sustainability. Already now, many fishers in the project countries and region report difficulties in maintaining profitability, because of decreasing catches (in volume) and/or increasing operational costs. Better management of fishery resources and related ecosystems is hence a requirement for the existence of sound and profitable fisheries in the future. In order to support this action, the project will identify which fishers, aquaculturists and coastal communities are most vulnerable in component 1.

In component 2 the project will develop climate change adaptive strategies and methods for fisheries and aquaculture that are economically viable, as otherwise they won't be accepted by the private sector entrepreneurs involved and targeted. Developing the most effective gears to withstand climate change impacts will additionally promote economic and financial sustainability of fishers in the future. The project will enhance some processing facilities by means of technical advances and innovations and provide food safety training resulting in reduction of post-harvest losses and higher quality fish and thus provide economic and financial sustainability to processors. The project will promote investments by public and private partners in sustainable and adaptive fishing gears, vessels and better management approaches, and assist the project partners to find interested investors. Investments in boat hauling equipment and development and designation of 'safe harbours', and the design and implementation of an insurance scheme for fishers in case of storms and hurricanes will lead to less economic and financial loss to fishers and their communities.

With regard to the financial sustainability of institutional arrangements (component 3) and the funding of these – in particular after project completion – a key project approach will be to build on existing structures and develop these in a cost-effective manner

rather than creating new ones. National authorities have been closely involved in project design, and the project addresses national priorities. The work planned by the project is well integrated into existing government programmes and this will also support the longer-term sustainability of project results. It is however recognized that certain investments in better fisheries management will require additional funding by government and the private sector; funding that is currently not provided as a consequence of prioritization processes that do not always take into account the interests of the fisheries sector.

5.4 SUSTAINABILITY OF CAPACITIES DEVELOPED

The project will address the three dimensions of capacity development (CD) identified in *FAO's Approach to Sustainability*: i) individuals (including fishers, aquaculturists, processing workers, households and community members); ii) institutions (national government, regional intergovernmental and key organizations); and iii) the environmental policy (regional strategy for improving environmental socio-ecosystem governance, institutional capacities improved through training in sustainable management of natural resources and sustainable production). Interaction between fishing community members and organizations of civil society and between civil society and government institutions will also be addressed.

Capacity building activities will focus on strengthening the management and technical skills of fishers, aquaculturists, fisherfolk organizations, producer associations, national institutions, the education community, civil society and coastal fishing communities. At the local level fishers, aquaculturists and fisherfolk organizations will be strengthened though workshops, training programs and participation in project design and implementation. Training local stakeholders, by supporting the establishment and strengthening of organizations, which will enable increased and meaningful participation in management, planning and monitoring activities in the selected project countries, is an integrated part of the project. Implementing EAF principles and involving local stakeholders in co-management processes will also enhance capacity building at the local level. The training events (e.g. courses, workshops, field trips, assessments) will be timely scheduled to ensure participation of beneficiaries, especially women. Fishing seasons will also be taken into account to ensure the largest possible participation of fishers and fisherfolk organization representatives. The systematization of lessons learned will also contribute to the sustainability of capacity to be installed. Developing sustainable economic alternatives in the fisheries sector will alleviate pressure on overfished fisheries while simultaneously ensuring livelihoods of local communities.

Developing partnerships with the private sector in the pilot sites will strengthen capacity at the local level through rehabilitation of existing and development of new aquaculture centers, development and deployment of alternative fishing gears.

Capacity building of government authorities is enhanced by data collection, monitoring, and control and through mainstreaming of EAF, CCA and DRM into policies and strategies in the seven project countries. Institutional arrangements promoted by the project for EAF and co-management will build on existing structures, where such exist.

New structures and organizational development will be based on stakeholder analyses and institutional assessments and take an inclusive and participatory approach.

The capabilities of education institutions (vocational schools, priary/secudary education and the UWI) in the region will be strengthened by public awareness activities and implementation of an environmental education strategy promoting an awareness of climate change vulnerability in coastal communities. Training and awareness raising of stakeholders will help to create an enabling environment for climate change adaptation of the fisheries sector in the region. Through private-public partnerships with existing local, national and regional organizations, government agencies, NGOs and other structures, projects results are absorbed and utilized broadly. Existing institutional structures and capacity will be strengthened through these new linkages and knowledge, and a broad base for continued action is created. Capacity development will be supported in a transversal manner throughout the project by a clear communication strategy aimed at creating awareness and potential for the improving resilience of the fisheries sector to climate change among stakeholders and the general population of the Caribbean region. It is foreseen that the RFBs (WECAFC and CRFM) as well as the partnering NGOs (CARIBSAVE, CANARI and TNC) will play important roles in the communication aspects of the project as well.

The sharing of information during the course of the project will ensure that knowledge is shared and maintained by a range of countries and partners in the region.

5.5 APPROPRIATENESS OF TECHNOLOGY INTRODUCED

The project will identify, adapt and develop a range of fisheries adaptation and management measures, ICT technologies and new gear technologies in close collaboration with those who will use it – the fishers and private sector will be partners in project implementation. The project will have support from UWI (CERMES and CIRP), the CRFM, TNC, CARIBSAVE and the FAO. All gear modifications, alternative fishing methods and the development of new ICT technology will be field tested in direct collaboration with fishers and fisherfolk organizations. Combining the local knowledge with regional experiences and expertise will ensure the appropriateness of the technologies introduced.

The project will promote proven and cost-effective production practices in the context of the Caribbean Region. These practices include amongst others the use for fishing methods, gears and vessels that are adapted to climate change, the development of aquaponics; development and implementation of FADs; and enhanced processing facilities and food handling. The training and technical assistance methodologies currently used by FAO in the region will be applied. Methodologies will be promoted that have proven to be successful elsewhere and which are known and accepted by both technical experts and producers. In addition, technical assistance and training by all partners and agencies involved will take into account aspects related to the dissemination of local knowledge of fisherfolk and aquaculturists.

5.6 REPLICABILITY AND SCALING UP

The replication potential of the project is high, given its complementarity with national and regional policies, plans and programs. The project will support replicability and scaling up by:

(i) Supporting institutional development, amendments of legal and policy frameworks to support mainstreaming EAF, CCA and DRM into fisheries management and planning-legislation and developing practical organisational capacity for implementing EAF. This mainstreaming will form a basis for effective fisheries management in a broader sense, and could provide an example for other countries in the Caribbean;

(ii) Design and implementation of vulnerability assessments at the regional, national and local level. This framework and the VAs at the local level can subsequently be carried out in other Caribbean fisheries communities, representing relatively modest investments but with the potential for improved livelihood resilience to climate change;

(iii) Incorporation of linkages with CRFM, WECAFC, TNC and CARIBSAVE that support replication in other projects and activities in the Caribbean region and elsewhere;

(iv) Introduction of suitable best practices and appropriate technologies (e.g. in relation to aquaculture developments, the development of fisheries based on under-utilized species, and the development and use of new technologies (mFisheries);

(v) Systematization of experiences and lessons learned will serve to promote the replication of project results throughout the Caribbean as well as in other regions.

APPENDICES

APPENDIX 1: RESULTS MATRIX

Project outcomes and impacts: [1]

Objective/Impact	Baseline	Outcome indicators	Assumptions
<u>Project Objective:</u> To increase resilience and reduce vulnerability to climate change impacts in the eastern Caribbean fisheries sector, through introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists.	<u>Component 1:</u> Outcome 1.1. • *No standardized* available framework on climate change vulnerability of the fisheries sector at the local level • *No downscaled* regional climate change models on risks and fish abundance available • Men, women, national authorities and institutions in target areas have *little awareness* of how to reduce the vulnerability of the fisheries sector to the impacts of climate change and about required adaptation practices	<u>Component 1:</u> Outcome 1.1 Target: • regional design for a framework of climate change vulnerability of the fisheries sector at the local level • Vulnerability assessments carried out at the local level in five project countries • 1 500 people will have an increased awareness of climate change impacts on the fisheries sector and adaptation practices	<u>Component 1:</u> The assumption of this component is that there is a high level of involvement and participation of the local population in the implementation of vulnerability assessments, and all stakeholders are motivated to participate in awareness-raising workshops and meetings on vulnerability assessments and findings of models. Fishing communities are willing to work with the project and increased knowledge and awareness can be turned into positive action leading to enhanced livelihoods. It is also assumed that there is effective collaboration between the different government authorities in the various project countries with the regional partners to develop the models needed.
	<u>Component 2:</u> Outcome 2.1. • Limited uptake of climate change adaptation	<u>Component 2:</u> Outcome 2.1 Targets: • 1 400 people will be adopting	<u>Component 2:</u> This component is built on the assumption that fisherfolk, fisherfolk organizations,

[1] Please insert/delete rows for components as needed

	measures in the fisheries sector • Fisherfolk and fish workers are generally not equipped (education, skills, training) to take advantage of existing or alternative livelihoods or diversification options. • Risk mitigation and reduction measures in fisheries are not accessible or easily available to fishers (e.g. fisheries insurance, social security, health insurance, pensions) • No early warning systems, protocols, drills or training specifically tailored to the fisheries sector • fisherfolk, households and communities have poor access to climate resilient livelihood options Outcome 2.2. • Development of the sector in the Eastern Caribbean is very limited and only four project countries have limited development of aquaculture • No training on adaptive capacity of	adaptation technologies (20% women) • 4 200 people (40% women) will benefit from adoption of diversified, climate livelihood options by means of adaptation measures; alternative livelihoods and capacity building. • Access of fisherfolk to fisheries insurance and social security will have increased, as well as availability of these services in at least four (4) of the project countries. Outcome 2.2 • 300 people will benefit through rehabilitation of existing and establishing of new aquaculture centres and capacity building activities	aquaculturists and private sector actors are willing to participate and appreciate the long-term benefits of developing new fisheries; more adaptable fishing methods; alternative livelihoods; development of new technologies; and capacity building activities. The component assumes technical measures are available and can be identified and adapted to local needs and be accepted by fishers and that the uptake of mobile cell phones amongst fisherfolk in various countries is high. This component also assumes that collaboration among different stakeholder groups, e.g. across fleets and gears, is possible and potential conflicts can be avoided or resolved. It is also assumed that fisherfolk, having expressed in many occasions a need for insurance services, will effectively use the services when these are made available at attractive rates and conditions.

	aquaculturists to climate change		
	<u>Component 3:</u> • The capacities of five (5) national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures is measured at seven points • The national policies of five (5) countries to identify, prioritize and integrate adaptation strategies and measures is measured at two points	<u>Component 3:</u> Outcome 3.1 • the capacities of five (5) national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies has improved with five points • National policies and plans to identify, prioritize and integrate adaptation strategies and measures in five (5) countries are strengthened with 5 points	<u>Component 3:</u> There is political support for amending national level fisheries institutional, policy and regulatory frameworks as required for climate change mainstreaming, and integrating EAF, CCA and DRM into these. There is sufficient capacity to implement the potential changes needed to allow for EAF, CCA and DRM mainstreaming at the national level.
	<u>Component 4:</u> 4.1 Project results matrix exists with baseline information and outcome and output indicators and targets.	<u>Component 4:</u> Outcome 4.1: Project implementation based on results-based management and application of project findings and lessons learnt in future operations. Target**:** • The project has achieved its expected outcomes and outputs and lessons learnt.	<u>Component 4:</u> Funding and partnerships materialise as planned.

Project outputs and outcomes:[1]

Indicators	Baseline[2]	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Component 1: Understanding and awareness of climate change impacts and vulnerability in the fisheries sector								
<u>Outcome 1.1</u> Increased awareness and understanding of climate change impacts and vulnerability								
<u>Output 1.1.1</u> Assessment of climate change vulnerability in the fisheries sector carried out at local, national and regional level.	No standardized available framework on climate change vulnerability of the fisheries sector at the local level. *Indicator 6 AMAT*: Risk and vulnerability assessments, and other relevant scientific and technical assessments	*Indicator 6 AMAT* Regional vulnerability assessment for the local level developed and carried out in five project countries	*Indicator 6 AMAT*: Initial desk study to develop a vulnerability assessment framework for fisheries sector vulnerability at the local level in the Eastern Caribbean VA design tested in pilot sites Regional workshop to finalize methodology	*Indicator 6 AMAT*: Vulnerability assessments carried in five project countries	*Indicator 6 AMAT*: Vulnerability assessments analysed and reported	*Indicator 6 AMAT*: 100% of target reached	National reports Regional summary report PPR	CERMES TNC Fisheries Divisions in Project countries

[1] Please insert/delete columns for project years and rows for outputs and outcomes as needed.
[2] Value in the case of quantitative indicators and description of situation in the case of qualitative indicators. Please insert the year of the baseline

Indicators	Baseline[2]	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
	carried out and updated							
Output 1.1.2 Models that describe fisheries abundance and accessibility								
Output 1.1.3 Findings of vulnerability assessments and models disseminated at regional, national and local level to improve understanding	There is little awareness of adverse impacts of climate change on the vulnerability of the fisheries sector and required adaptation practices *Indicator 5 AMAT*: Public awareness activities carried out and population reached	*Indicator 5 AMAT*: 1 500 people will have an increased awareness of climate change impacts on the fisheries sector and adaptation practices	*Indicator 5 AMAT*: Development at the national level of outreach material for building awareness on vulnerability and models at the national and local level (training, workshops, brochures, School programs, stakeholder meetings etc.)	*Indicator 5 AMAT*: Activities carried out: 750 people will have increased awareness of climate change impacts on the fisheries sector and about available adaptation practices (40 female)		*Indicator 5 AMAT*: Activities carried out: 1 500 people will have increased awareness of climate change impacts on the fisheries sector and adaptation practices (40% female)	Surveys Number of participants at trainings, workshops, meetings National reports	CERMES Fisheries Divisions in six project countries

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Component 2: Increasing fisherfolk, aquaculturists and coastal community resilience to climate change and variability								
<u>Outcome 2.1</u> Improved resilience of fisherfolk and coastal community members.	Outcome 2.1. Fisherfolk and fish workers not equipped to take advantage of existing or alternative livelihoods or diversification options. *Indicator 3 AMAT:* Population benefiting from adoption of diversified, climate resilient livelihood options Limited uptake of climate change adaptation	*Outcome 2.1* *Indicator 3 AMAT:* -4,200 people (men and women) will benefit from adoption of diversified, climate resilient livelihood options by means of adaptation measures; alternative livelihoods and capacity building (40% female) *Indicator 4 AMAT*: -1,400 people will adopting adaptation technologies (20% female)	*Indicator 3 AMAT:* Development of national and regional climate change adaptation measures; alternative and climate resilient livelihood strategies (e.g. insurance) and/or capacity building activities *Indicator 4 AMAT*: -Development of adaptation technologies	*Indicator 3 AMAT:* 50 % of targeted group (men and women) adopting diversified, climate resilient livelihoods by means of adaptation measures and/or engaged in capacity building activities *Indicator 4 AMAT*: -50% of targeted group adopting adaptation technologies (20% female)		*Indicator 3 AMAT:* 100 % of targeted group (men and women) adopting diversified livelihood measured and/or engaged in capacity building activities (40% women) *Indicator 4 AMAT*: -100% of targeted group (men and women) adopting adaptation technologies (20% female)	PPR Surveys Visits to project sites Final evaluation report Workshop reports	CRFM CNFO CIRP CERMES FAO CARIBSAVE Seven project countries

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
	measures in the fisheries sector							
Output 2.1.1 Strengthened ICT capacity of fisherfolk and CNFOs								
Output 2.1.2 Strengthened fisherfolk and CNFO capacity (in business skills, insurance schemes, coping with loss, rapid response and boat hauling) and associated equipment delivered								
Output 2.1.3 Exchange programs on fisheries co-management and adaptation technology								
Outcome 2.2 Improved resilience of	Outcome 2.2. Development of the	Outcome 2.2 *Indicator 3*		*Indicator 3 AMAT:* 50 % of		*Indicator 3 AMAT:* 50 % of	PPR Visit field sites	

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
aquaculturists	aquaculture sector in the Eastern Caribbean is limited and only four project countries have partial developed aquaculture sector and limited training on adaptive capacity of aquaculturists to climate change *Indicator 3 AMAT* Population benefiting from adoption of diversified, climate resilient livelihood options	*AMAT*: 300 people will benefit through rehabilitation of existing and establishing of new aquaculture centres and capacity building activities		targeted group (men and women) adopting diversified livelihood measures and/or engaged in capacity building activities in the aquaculture sector		targeted group (men and women) adopting diversified livelihood measured and/or engaged in capacity building activities in the aquaculture sector	Reports of training and exchange visits Final evaluation Report	
<u>Output 2.2.1</u> Existing								

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
aquaculture centers rehabilitated and new aquaculture centers established								
Output 2.2.2 Strenghtened capacity of aquaculturists in climate change adaptation measures and adaptive technologies								
Indicators	**Baseline**	**Target**	**Milestones towards achieving output and outcome targets**				**Data Collection and Reporting**	
			Year 1	**Year 2**	**Year 3**	**Year 4**	**Means of verification**	**Responsible for Data Collection**
Component 3: Mainstreaming of climate change adaptation in multi-level fisheries governance								
Outcome 3.1 Climate change adaptation mainstreamed in multilevel fisheries governance							PPR	
Output 3.1.1 Strengthened institutional regional and national capacity on	Output 3.1.1. The capacities of five national institutions to identify, prioritize,	Output 3.1.1 *Indicator 10 AMAT*: the capacities of five (5) national	*Indicator 10 AMAT*: Training curriculum and plan prepared on EAF and CCA and DRM	*Indicator 10 AMAT*: 30% of capacity building activities		*Indicator 10 AMAT*: The capacity of five (5) national institutions to	PPR Evaluation forms Regional Report	CERMES FAO CRFM CNFO CANARI

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
mechanisms to implement climate change adaptation measures	implement, monitor and evaluate adaptation strategies and measures is low (and measured at seven) *Indicator 10 AMAT*: Capacities or regional, national and sub-national institutions to identify, prioritize, implement, monitor, evaluate adaptation strategies and measures	institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies is improved with five points		carried out		identify, prioritize, implement, monitor and evaluate adaptation strategies is improved with five points	Documents Workshop Reports	
<u>Output 3.1.2</u> Climate change adaptation mainstreamed into policies, plans and associated processes	Output 3.1.2. The national policies of five countries to identify, prioritize and integrate adaptation strategies and	Output 3.1.2. *Indicator 12 AMAT*: - National policies and plans to identify, prioritize and integrate	*Indicator 12 AMAT*: National policies and plans analysed and recommendations drafted for EAF/CC and DRM mainstreaming into fisheries	*Indicator 12 AMAT*: National policies and plans and adaptation strategies and measures in	*Indicator 12 AMAT*: At least 2 regional fisheries policies and management plans and recommendations have incorporated CCA and DRM measures	*Indicator 12 AMAT*: - National policies and plans to identify, prioritize and integrate	PPR Evaluation forms Regional Report Documents Workshop Reports	CRFM CANARI CERMES WECAFC

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
	measures is low (and measures at two) *Indicator 12 AMAT*: Regional, national and sector-wide policies, plans and processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures	adaptation strategies and measures in five (5) countries are strengthened with 5 points	management and planning-legislation	five project countries strengthened in draft form		adaptation strategies and measures in five (5) countries are strengthened with 5 points	National policies with climate change mainstreaming	

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
Component 4: Project Monitoring and Evaluation and Knowledge Management								
Outcome 4.1 Project implemented. Lessons learned and best practices have been documented and disseminated.		The project has been executed with a results based management approach. Project sustainability has been ensured.	33% progress in project target achievement	66% progress	85% progress	Project targets achieved Project evaluated. Sustainability demonstrated.	PIR PPRs Mid-term Evaluation Final Evaluation Final Project Report	RPC NPCs FAO
Output 4.1.1 Project management, monitoring and evaluation system		Project Operational Unit functioning. Procedures established and fulfilled M&E system operational.	2 biannual reports (1 PPR and 1 PIR)	2 biannual reports (1 PPR and 1 PIR) Mid-Term Evaluation Tracking Tools completed (mid-term)	2 biannual reports (1 PPR and 1 PIR)	2 biannual reports (1 PPR and 1 PIR) Final Project Evaluation Tracking Tools completed (final)	Project national consultants reports Project management system and records MAE and MAGAP management system	RPC NPCs FAO External evaluators
Output 4.1.2 Project knowledge management system	There is no online platform for systematization of information on training and	Mechanism for knowledge systematization and sharing. Online platform	Practices and learning shared with all beneficiaries, implementing units of Ministries and associated	Practices and learning shared Information systematized	Practices and learning shared Information systematized	Practices and learning shared Information systematized for the platform	No. of users registered on the platform No. of themes and training	NPCs RPC FAO

Indicators	Baseline	Target	Milestones towards achieving output and outcome targets				Data Collection and Reporting	
			Year 1	Year 2	Year 3	Year 4	Means of verification	Responsible for Data Collection
	CSL. MAGAP is creating a virtual training platform	operational, linking users, systematizing lessons learned and good fishing practices and providing training.	academies/institutes Coordination with MAGAP for using its platform. MAGAP online platform applied to project requirements	for the platform 5 themes per province uploaded to the platform 5 trainings developed for the platform	for the platform 5 themes per province uploaded to the platform	5 themes per province uploaded to the platform Preparation of the "*Implementation of the CSL approach in Ecuador, lessons learned and replication potentia*l" report.	in the platform Platform online with the information generated Report on lessons learned and replication potential	

APPENDIX 2: WORK PLAN

	Activities	Regional leading institution	Project countries involved	Year 1				Year 2				Year 3				Year 4			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1																			
Output 1.1.1 Assessment of climate change vulnerability in the fisheries sector carried out at local, national and regional level.	Design and implementation of vulnerability assessments at the local level	UWI	Grenada, Saint Lucia, St. Kitts and Nevis, SVG, Trinidad and Tobago																
Output 1.1.2 Models that describe fisheries abundance and accessibility	Development of a model to assess sargassum impacts on the dolphin fish and flying fish populations	UWI	Dominic, St. Kitts and Nevis, SVG																
	Risk assessment modelling for pelagic (and demersal) fisheries with climate change and variability		Grenada, SVG, T and T																
	Development of an economic model for FAD fishermen		SVG																
Output 1.1.3 Findings of vulnerability assessments and models disseminated at	Designing and implementing a communication strategy on VAs and modelling	UWI	Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, SVG, Trinidad and																

	Activities	Regional leading institution	Project countries involved	Year 1				Year 2				Year 3				Year 4			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
regional, national and local level to improve understanding			Tobago																
Component 2																			
Output 2.1.1. Strengthened ICT capacity of fisherfolk and CNFOs	Development and implementation of fisheries IC/Training of fishers in ICT/mfisheries	UWI	Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, SVG, Trinidad and Tobago																
	Development and deployment of smart FADs		Dominica, St.Kitts and Nevis																
	Using NEMO and Marine Police communications		Saint Lucia																
Output 2.1.2. Strengthened fisherfolk and CNFO capacity (in business skills, insurance schemes, coping with loss, rapid response and boat hauling) and associated equipment	Training (incl. business skills training; processing workers and other fisherfolk and CNFO capacity training)		Antigua and Barbuda, St. Kitts and Nevis, Saint Lucia, SVG, Trinidad and Tobago																
	Development of business proposals to facilitate full utilization of key commercial and under-utilized species	CRFM	Grenada, Trinidad and Tobago																

	Activities	Regional leading institution	Project countries involved	Year 1				Year 2				Year 3				Year 4			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
delivered	Development of alternative and improved livelihoods and gears		Antigua and Barbuda, Grenada, St.Lucia, SVG																
	Development of early warning system (national and local level)		SKN																
	Development of insurance needs assessment, scheme and implementation	FAO	Dominica																
	Safety-at-sea improvement (training, boat design, equipment) and disaster preparedness plan	FAO	Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, SVG, Trinidad and Tobago																
	Hurricane shelters and areas for boats storage		Antigua and Barbuda, Saint Lucia																
Output 2.1.3 Exchange programs on fisheries co-management and adaptation technology	Facilitating exchanges by fisherfolk to countries/communities in which EAF, CCA and DRM/co-management is successful	UWI	Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, SVG, Trinidad and Tobago																

	Activities	Regional leading institution	Project countries involved	Year 1				Year 2				Year 3				Year 4			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2.2.1 Existing aquaculture centres rehabilitated and new aquaculture centres established	Aquaponics and/or aquaculture facilities strengthened; equipment; development of marketing strategy	FAO	Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, SVG,																
Output 2.2.2 Strenghtened capacity of aquaculturists in climate change adaptation measures and adaptive technologies	Capacity building programmes for aquaculturists in in climate change adaptation measures and adaptive technologies	FAO	St. Kitts and Nevis, Saint Lucia, SVG and Trinidad and Tobago																
Component 3																			
Output 3.1.1 Strengthened institutional regional and national capacity on mechanisms to implement climate change adaptation measures	Assistance for developing practical organizational capacity for implementing EAF, CCA and DRM (training, exchange, workshops etc.)	UWI	St. Kitts and Nevis, Trinidad and Tobago (as well as number of other countries not yet determined)																

	Activities	Regional leading institution	Project countries involved	Year 1				Year 2				Year 3				Year 4			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 3.1.2 Climate change adaptation mainstreamed into policies, plans and associated processes	Implementing EAF to develop adaptation plans	UWI	Five countries to be determined during inception workshop																
	Mainstreaming EAF/CC and DRM into fisheries management and planning-legislation	FAO	Dominica, Grenada, St. Kitts and Nevis, Saint Lucia. Trinidad and Tobago																
	Mainstreaming through communication for adaptation and public awareness and training programmes	UWI	Antigua and Barbuda, Dominica, St. Kitts and Nevis, Saint Lucia, SVG																
	Protocol for integration of DRM and CCA into CCCFP	CRFM	Five countries to be determined during inception workshop																
	Advocacy of climate change mainstreaming among fishers and policy makers CNFO secretariat	CNFO	Five countries to be determined during																

	Activities	**Regional leading institution**	**Project countries involved**	**Year 1**				**Year 2**				**Year 3**				**Year 4**			
				Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
			inception workshop																

APPENDIX 3: RESULTS BUDGET

Oracle code and description	Component 1:		Component 2:			Component 3:		Component 4:		PM	GEF	Year 1	Year 2	Year 3	Year4
	1.1	Total	2.1	2.2	Total	3.1	Total	4.1	Total						
5300 Salaries professionals															
Project RPC	132,000	132,000	66,000	66,000	132,000	132,000	132,000	132,000	132,000		528,000	132,000	132,000	132,000	132,000
Operational and Administrative Officer (part time)										260,000	260,000	65,000	65,000	65,000	65,000
5300 Sub-total salaries professionals	132,000	132,000	66,000	66,000	132,000	132,000	132,000	132,000	132,000	260,000	788,000	197,000	197,000	197,000	197,000
5570 International Consultants															
International consultants	81,200	81,200	123,650	123,650	247,300	76,500	76,500				405,000	135,000	135,000	135,000	0
Sub-total international Consultants	81,200	81,200	123,650	123,650	247,300	76,500	76,500	0	0	0	405,000	135,000	135,000	135,000	0
National consultants		0									0				
Sub-total national Consultants	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5570 Sub-total consultants	81,200	81,200	123,650	123,650	247,300	76,500	76,500	0	0	0	405,000	135,000	135,000	135,000	0
5650 Contracts															
LoA CERMES	143,100	143,100	3,600		3,600	271,800	271,800		0		418,500	81,675	163,350	127,575	45,900
LoA CIRP	0	0	120,000		120,000		0		0		120,000	60,000	60,000		
LoA CNFO	0	0				90000	90,000		0		90,000	15,000	30,000	30,000	15,000
LoA CRFM	0	0	99,000		99,000	22500	22,500		0		121,500	20,250	40,500	40,500	20,250
Fisheries Insurance Assesment study	0	0	45,000		45,000	0	0		0		45,000	15,000	30,000		
LoA Antigua and Barbuda	0	0	274,000	20,000	294,000	42,500	42,500		0		336,500	56,083	112,167	112,167	56,083
LoA Dominica	36,550	36,550	213,300	66,000	279,300	23,800	23,800		0		339,650	59,654	119,308	110,171	50,517
LoA Grenada	119,000	119,000	76,000	85,000	161,000	85,000	85,000		0		365,000	70,750	141,500	111,750	41,000

LoA St. Kitts and Nevis	55,250	55,250	25,500	195,000	220,500	76,500	76,500		0		352,250	63,313	126,625	112,813	49,500
LoA St. Lucia	63,750	63,750	177,000	75,000	252,000	29,750	29,750		0		345,500	62,896	125,792	109,854	46,958
LoA St. Vincent and the Grenadines	119,000	119,000	110,000	100,000	210,000	25,500	25,500		0		354,500	69,000	138,000	108,250	39,250
LoA Trinidad and Tobago	161,500	161,500	149,500	50,000	199,500	80,750	80,750		0		441,750	87,083	174,167	133,792	46,708
Midterm and final evaluation								80,000	80,000		80,000		40,000		40,000
Other contracts as required M and E		0			0		0	50,000	50,000		50,000		10,000	20000	20,000
5650 Sub-total Contracts	698,150	698,150	1,292,900	591,000	1,883,900	748,100	748,100	130,000	130,000	0	3,460,150	660,704	1,311,408	1,016,871	471,167
5900 Travel															
Technical committee meetings travel								60,000	60,000		60,000	15,000	15,000	15,000	15,000
Project steering committee meetings								60,000	60,000		60,000	15,000	15,000	15,000	15,000
Travel RPC		0			0		0	60,000	60,000		60,000	15,000	15,000	15,000	15,000
5900 Sub-total travel	0	0	0	0	0	0	0	180,000	180,000	0	180,000	45,000	45,000	45,000	45,000
5023 Training and workshops															
Technical committee		0			0		0	20,000	20,000		20,000	5,000	5,000	5,000	5,000
Project steering committee		0			0		0	20,000	20,000		20,000	5,000	5,000	5,000	5,000
Project CTU		0			0		0	20,000	20,000		20,000	5,000	5,000	5,000	5,000
5023 Sub-total training	0	0	0	0	0	0	0	60,000	60,000		60,000	15,000	15,000	15,000	15,000
6000 Expendable procurement															
		0	0		0		0		0	0	0				
6000 Sub-total expendable procurement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6100 Non-expendable procurement															

Equipment	32,650	32,650	369,440	92,360	461,800	21,400	21,400		0	0	515,850	171,950	171,950	171,950	
6100 Sub-total non-expendable procurement	32,650	32,650	369,440	92,360	461,800	21,400	21,400	0	0	0	515,850	171,950	171,950	171,950	0
6300 GOE budget															
Miscellaneous including contingencies		0			0		0	51,000	51,000		51,000	12,750	12,750	12,750	12,750
0	0	0	0	0	0	0	0	51,000	51,000	0	51,000	12,750	12,750	12,750	12,750
TOTAL	944,000	944,000	1,851,990	873,010	2,725,000	978,000	978,000	553,000	553,000	260,000	5,460,000	1,237,404	1,888,108	1,593,571	740,917

SUBTOTAL Comp 1	944000	17
SUBTOTAL Comp 2	2725000	50
SUBTOTAL Comp 3	978000	18
SUBTOTAL Comp 4	553000	10
SUBTOTAL Project Management	260000	5
TOTAL GEF	5,460,000	100

Please find d attached the Excel budget (click on icon below)

Copy of worksheets budget CC4FISH 20-(

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APPENDIX 4: RISK MATRIX

Main risks	Level of risk	Mitigation measures incorporated in project concept
Low capacity of some partner institutions and government ministries to engage in the project in addition to their other commitments	Low	The establishment of a Project Steering Committee (PSC) during the project inception phase will ensure participation, ownership and engagement of the key partners to maintain attention to this project. Most partners have been actively involved in the project design and preparation already. Moreover, FAO has extensive experience in working with the partners in the region and has FAO representations and/ or national correspondents' offices in each of the countries to facilitate implementation at country level. National Project Steering Committees (NPSCs) will be formed to support and monitor progress at national level in the participating countries.
Lack of political support for the project, e.g. a change in key policy and decision- makers or other events beyond the control of the project leading to changes in policies and/or support for management and the project.	Low	Project priorities are in line with overall local, national and regional concerns and are hence strongly anchored in existing policies. Through stakeholder participation, local, national and regional ownership was already established at the project design stage, and this broad-based support will be promoted also during implementation.
Co-funding from partners and collaboration do not materialize as planned and the project experiences budget shortcomings.	Low	The project design will not contain expected results or activities for which funding has not been confirmed. In accordance with GEF requirements, all co-funders must confirm their contributions in writing. Regular reviews of project progress together with financial monitoring during project implementation will ensure that corrective actions can be taken if and as needed.
Poor coordination between the various components of the project	Low	The Project Steering Committee will meet at least twice per year to ensure proper coordination. Moreover, the project management unit will give particular attention to coordination issues and will ensure follow-up at national and regional level.
Limited interest and engagement of	Medium	Careful attention will be given to ensure involvement of all relevant

fisherfolk		stakeholders (including fisherfolk) at an early stage in the preparation phase and throughout the project implementation process. In the project preparation phase their representatives have participated in development of the project at regional and national levels. The implementation of activities in the field will provide opportunities for a broader engagement by fisherfolk. Capacity building and training of fisherfolk will take place as much as possible in evening hours and in the low season to avoid them missing fishing opportunities.
Climate change induced events, such as hurricanes and tropical storms and shifts in stock abundance, occur faster than anticipated and the project is able to adapt to	Medium	The capacity building activities foreseen under the project will be initiated in the first year. Climate change adaptive fisheries management planning will ensure from the start of the project that adaptive approaches are used that meet the dynamics, changes and variability of the climate and prepare the fisherfolk for these.
Extreme weather events impact the implementation of certain project elements	Low	Extreme weather events are usually well anticipated and the project partners will be aware of upcoming events as a result of communication and information strategies
Uncertainty in findings and conclusions from Climate Change science and its fisheries specific links reduce implementation of adaptation measures by the fisheries sector	Medium	The science-management interface is well-integrated in the project design and implementation. A range of communication and information strategies will be used to ensure that adaptation solutions supported by scientific evidence will reach the target stakeholders.
Technology uptake by fishers, aquaculturists and fisheries administrations is low	Low	Elsewhere proven and properly tested technologies will be introduced in the region; the technologies will be simple, low-risk, economically viable, durable and practical in order to facilitate rapid uptake also by persons with limited formal education.
Conflicts and differences among participating groups might affect project implementation.	Low	The Project will promote continuous dialogue amongst stakeholders and develop platforms for greater exchange of information, needs analysis and trouble shooting.

APPENDIX 5: TERMS OF REFERENCE (TORS)

Terms of Reference 1

Title: Regional Project Coordinator/Fisheries Expert (RPC)
Duty Station: FAO Subregional office for the Caribbean (FAO-SLC), Barbados
Duties and Responsibilities:

Under the supervision of the Project Steering Committee (PSC), the overall direction and supervision of the LTO and Project Task Force, reporting to the FAO Budget Holder (administrative matters) and FAO LTO (technical matters) and receiving technical advice from the FAO Headquarters Unit, the RPC will be responsible for all technical and coordination aspects and overall implementation of the project. Specifically, he/she will:

- Be responsible for and ensure that all technical and coordination aspects and overall implementation of the project are in accordance with FAO and GEF rules and procedures, and that technical activities implemented within the project are consistent with the Project's Results Framework indicators and results-based management target.
- Manage the project monitoring system and tracking output and outcome indicators as established in the Project's Results framework.
- In close collaboration with and based on inputs from National Co-executing Partners, prepare and follow up on the implementation of Annual Work Plans and Budgets for the project.
- Collect inputs from National Co-executing Partners and prepare six-monthly Project Progress Reports in accordance with FAO-GEF reporting requirements (see section 4.5 of the FAO Project Document) and submit them to the FAO Project Task Torce for comments and clearance (by the LTO) and to the Project Steering Committee for information
- Collect inputs from National Co-executing Partners and other project co-financing partners and prepare an annual report on the invested co-financing.
- Support the LTO in preparing the annual Project Implementation Review (PIR) to be submitted to the FAO-GEF Coordination Unit for clearance, (which subsequently submits it to GEF).
- Provide support to Government counterpart institutions as appropriate, and ensure effective and timely execution of planned activities in the countries and at regional level involving other related parties.
- Support the project Operational and Administrative Officer at FAO-SLC (the Budget Holder – BH) with: preparation of six-monthly statements of expenditures to be distributed to the PSC; six-monthly updating of the project's procurement plan; review and clear disbursement requests under the LoAs with National Co-executing Partners, and procurement and contract documentation for goods and services to be purchased in accordance with the project approved budget and procurement plan.
- Review TOR for consultancies and contracts to be performed under the LoAs with National Co-executing Partners for submission to FAO for clearance. Review and

provide comments on technical products delivered by consultants and contract holders contracted by the GEF project.

- Be responsible for partner coordination and liaison with donors and other projects, programmes and organizations and coordinate institutional arrangements and meeting/workshop activities needed to exchange lessons learned, harmonize approaches and coordinate activities to create synergies, and execute the project at the regional level.
- Provide on-the-job capacity building and mentoring to consultants on project management and coordination as required.
- Conduct periodic coordination and supervision missions to the participating countries.
- Develop materials for capacity development in collaboration with the LTO, LTU, the Project's Task Force, and in close coordination with participating countries and partners.
- Represent the project in relevant coordination meetings and conferences.
- Organize the PSC meetings and act as Secretary of the meetings.
- In consultation with the FAO Office of Evaluation, LTO, and the FAO GEF Coordination Unit, support the organization of the mid-term review and the final evaluation, contribute to the development of an eventual agreed adjustment plan for project execution and supervise its implementation.
- Perform other related duties as required.

Minimal requirements:

- Advanced University Degree in Fisheries, Aquaculture, Ecology or closely related fields.
- At least five years experience in international projects operation and management related to natural resources management, including field experience in developing countries.
- Work experience as Team leader or senior advisor leading to high level of technical advisory services in fisheries and aquaculture.
- Proven capacity to work and establish working relationships with government and non-government representatives.
- Knowledge of FAO's project management systems.

Location: Bridgetown
Language: English
Duration: 48 months

Terms of Reference 2

Title: National Project Coordinators (NPCs) – seven posts
Duty Station: In each participating country (location to be decided) – with travel as required
Duties and Responsibilities:

In close coordination with the FAO Representative/national correspondent and the Project Steering Committee (PSC), under the overall direction of the Regional Project Coordinator (RPC) and the technical support and guidance of the LTO, and in close collaboration with the National Project Steering Committee (NPSC), consultants and partners, the NPCs will be responsible for the technical and operational implementation of the project at the national and local level. Specifically, the NPCs will:

- Prepare national work plans and budgets and submit these to the RPC for clearance and incorporation into overall project annual reports and budgets. Be responsible for the implementation of national work plans.
- Ensure that monitoring mechanisms are in place at the national and local level allowing for tracking progress according to targets established in national work plans as well as to output and outcome indicators in the Project's Results Framework. Provide progress reports to the RPC for compilation into overall Project Progress reports.
- Support national activities in the country, supervise national project staff and consultants and prepare contractual arrangements.
- Liaise with relevant national organizations and partners, and support communication, coordination and collaboration.
- Organize the NPSC meetings and act as Secretary of the meetings.
- Participate in project regional workshops and meetings, and represent the project in relevant national events and conferences.
- Perform other related duties as required.

Minimal requirements:

- University Degree in Fisheries, Aquaculture, Ecology or closely related fields.
- At least five years experience in project operation and management related to natural resources management, including field experience.
- Proven capacity to work and establish working relationships with Intergovernmental agencies, non-government representatives and any other stakeholder of the fisheries and aquaculture sector within the country.

Location:
Language: English
Duration: 48 months

Terms of Reference 3: **Budget and Operations Officer**

Under the general supervision of the FAO Sub-Regional Coordinator in Barbados (Budget Holder) and the Project Regional Project Coordinator (RPC), and in close collaboration with the project executing partners and the Lead Technical Officer (LTO), the Budget and Operations Officer will take the operational responsibility for timely delivery of the project outcomes and outputs. In particular, he/she will perform the following main tasks:

- Ensure smooth and timely implementation of project activities in support of the results-based workplan, through operational and administrative procedures according to FAO rules and standards;
- Coordinate the project operational arrangements through contractual agreements with key project partners;
- Arrange the operations needed for signing and executing Letters of Agreement (LoA) and Government Cooperation Programme (GCP) agreement with relevant project partners;
- Maintain inter-departmental linkages with FAO units for donor liaison, Finance, Human Resources, and other units as required;
- Day-to-day manage the project budget, including the monitoring of cash availability, budget preparation and budget revisions to be reviewed by the Project Coordinator;
- Ensure the accurate recording of all data relevant for operational, financial and results-based monitoring;
- Ensure that relevant reports on expenditures, forecasts, progress against workplans, project closure, are prepared and submitted in accordance with FAO and GEF defined procedures and reporting formats, schedules and communications channels, as required;
- Execute accurate and timely actions on all operational requirements for personnel-related matters, equipment and material procurement, and field disbursements;
- Participate and represent the project in collaborative meetings with project partners and the Project Steering Committee, as required;
- Undertake missions to monitor the outputs-based budget, and to resolve outstanding operational problems, as appropriate;
- Be responsible for results achieved within her/his area of work and ensure issues affecting project delivery and success are brought to the attention of higher level authorities through the BH in a timely manner,
- In consultation with the FAO Evaluation Office, the LTO, and the FAO-GEF Coordination Unit, support the organization of the mid-term and final evaluations, and provide inputs regarding project budgetary matters;
- Undertake any other duties as required.

Minimal requirements:

- University Degree in Economics, Business Administration, or related fields.
- At least five years experience in project operation and management related to natural resources management, including field experience in developing countries.

- Proven capacity to work and establish working relationships with government and non-government representatives.
- Knowledge of FAO's project management systems.

Location: Bridgetown
Language: English
Duration: 48 months

APPENDIX 6: ENVIRONMENTAL AND SOCIAL REVIEW FORM

Appendix 6 EIA.pdf