

## Strategies, technologies and social solutions to manage bycatch in tropical Large Marine Ecosystem Fisheries (REBYC-III CLME+)

### Part I: Project Information

**GEF ID**

10857

**Project Type**

FSP

**Type of Trust Fund**

GET

**CBIT/NGI**

CBIT No

NGI No

**Project Title**

Strategies, technologies and social solutions to manage bycatch in tropical Large Marine Ecosystem Fisheries (REBYC-III CLME+)

**Countries**

Regional, Barbados, Guyana, Suriname, Trinidad and Tobago

**Agency(ies)**

FAO

**Other Executing Partner(s)**

To be determined during the PPG

**Executing Partner Type**

Others

**GEF Focal Area**

International Waters

**Taxonomy**

Focal Areas, International Waters, Large Marine Ecosystems, Learning, Biomes, Coral Reefs, Coastal, Fisheries, Pollution, Plastics, Strategic Action Plan Implementation, Marine Protected Area, SIDS : Small Island Dev States, Influencing models, Demonstrate innovative approach, Convene multi-stakeholder alliances, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Stakeholders, Communications, Behavior change, Education, Awareness Raising, Public Campaigns, Beneficiaries, Private Sector, SMEs, Individuals/Entrepreneurs, Local Communities, Civil Society, Academia, Community Based Organization, Non-Governmental Organization, Type of Engagement, Partnership, Consultation, Participation, Information Dissemination, Gender Equality, Gender Mainstreaming, Women groups, Gender-sensitive indicators, Sex-disaggregated indicators, Gender results areas, Capacity Development, Participation and leadership, Knowledge Generation and Exchange, Access to benefits and services, Capacity, Knowledge and Research, Innovation, Knowledge Generation, Enabling Activities, Knowledge Exchange, Indicators to measure change, Adaptive management, Theory of change

**Rio Markers****Climate Change Mitigation**

Climate Change Mitigation 0

**Climate Change Adaptation**

Climate Change Adaptation 1

**Duration**

48 In Months

**Agency Fee(\$)**

506,298.00

**Submission Date**

9/13/2021

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
IW-1-2	GET	5,329,452.00	24,565,884.00
	Total Project Cost (\$)	5,329,452.00	24,565,884.00

## B. Indicative Project description summary

### Project Objective

Project Objective: To manage bycatch and reduce discards in the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) thereby promoting sustainable and responsible fisheries that provide economic opportunities while ensuring the conservation of marine living resources, supporting country implementation of the CLME+ SAP, and with successful solutions for potential scale up to other LMEs

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1: Improving fishing practices to manage bycatch and reduce discards and the negative impacts of fishing gears in CLME+ fisheries, supporting countries implementation of CLME+ SAP priorities.	Technical Assistance	<p><i>Note: this component will particularly address the SAP priorities through a focus on an ecosystem approach to fisheries (Strategy 5).</i></p> <p><u>Outcome 1.1:</u> Approaches and tools to manage bycatch and reduce discards widely adopted in target trawl and non-trawl CLME+ fisheries.</p> <p><i>Indicator 1: Reduced level of bycatch and discards compared to baseline in target fisheries estimated to be of around 37,000 tons.</i></p> <p><i>Indicator 2: Percentage of fleet in pilot sites utilizing updated and sustainable fishing practices and</i></p>	<p><u>Output 1.1.1:</u> Development and piloting of smart-gear modifications for both trawl and non-trawl gears (such as gillnets and longlines) for more size- and species-selective fishing practices.</p> <p><u>Output 1.1.2:</u> Innovative pre-catch technologies developed and tested to assess the composition of target schools of fish before they are harvested.</p> <p><u>Output 1.1.3:</u> Capacity building for key stakeholders to adopt, use and monitor new bycatch and discards technologies and approaches delivered.</p> <p><u>Output 1.2.1:</u> Strategies, approaches and technical measures to reduce opportunities for bycatch of vulnerable and ETP species developed and promoted.</p>	GET	1,550,000.00	8,065,884.00



*technologies (target to be identified during PPG phase).*

Outcome 1.2: Effective mitigation measures to reduce adverse fisheries impacts on vulnerable, and Endangered, Threatened and Protected (ETP) species implemented in CLME+ target fisheries.

*Indicator 3: Reduced bycatch (tons or percentage) of vulnerable species (e.g. ETP species) in selected target fisheries compared to baseline data (collected at PPG phase, or based on other recent studies/data sources).*

Outcome 1.3: Specific measures and technologies to address ALDFG and other adverse impacts of fishing gears on marine benthic habitats adopted.

*Indicator 4: Percentage of fishers adopting ALDFG mitigation measures in target*

Output 1.2.2: Procedures, guidelines and tools for improving post-release survival of unwanted and incidental ETP species developed, promoted and adopted in CLME+ fisheries, including capacity building to enable their use.

Output 1.3.1: Data and data collection frameworks on ALDFG and other adverse impacts of fishing gears on marine benthic habitats in target countries strengthened.

Output 1.3.2: Risk assessment and feasibility analysis of potential technologies and incentive mechanisms to address ALDFG and ghost fishing carried out for target fisheries in CLME+, including cost-benefit analysis of ALDFG removal.

Output 1.3.3: Mitigating measures to address ALDFG developed, piloted, and promoted in selected CLME+ fisheries.

Output 1.3.4: Technological innovations for the mitigation of fishing impacts on benthic ecosystem developed and promoted.

*fisheries (specific measures and targets to be identified during PPG phase).*

Component 2: Strengthening governance and management frameworks and enforcement measures to better manage bycatch and reduce discards in CLME+ fisheries, supporting countries implementation of CLME+ SAP priorities.	Technical Assistance	<p><i>Note: this component will particularly address the SAP priorities through improving regional governance arrangements for sustainable fisheries (Strategy 2) and the regional policy coordination mechanisms for governance of the marine environment (Strategy 3).</i></p> <p><u>Outcome 2.1:</u> Improved policy and legal frameworks to manage bycatch and reduce discards and address ALDFG in target countries.</p> <p><i>Indicator 5: Bycatch management and discards reduction recommendations adopted at regional level by the WECAFC.</i></p> <p><i>Indicator 6: Fisheries legal frameworks at national level in the four countries extended with bycatch, discards and ALDFG regulations.</i></p>	<p><u>Output 2.1.1:</u> Guidance on bycatch management, discard reduction and ALDFG mitigation measures formulated to update relevant fisheries policy and regulatory frameworks associated with target fisheries.</p> <p><u>Output 2.1.2:</u> Recommendations on effective bycatch management, discards reduction and and ALDFG mitigation mainstreamed into relevant national, and regional policy processes.</p> <p><u>Output 2.2.1:</u> Spatial-temporal study of environmental, social and economic drivers of species bycatch and discards composition.</p> <p><u>Output 2.2.2:</u> Maps identifying key bycatch and discard areas designed, developed and deployed in target fisheries.</p> <p><u>Output 2.3.1:</u> Innovative, cost-effective technology and tools for controlling, tracking and monitoring of compliance with bycatch</p>	GET	2,000,000.00	7,900,000.00
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Outcome 2.2:

Integration of bycatch mitigation measures in marine fisheries management frameworks and Marine Spatial Planning in participating countries improved.

regulations developed and widely adopted within target fisheries.

Output 2.3.2: Capacity building for key stakeholders to use adopted technologies and tools to control and monitor bycatch and discards delivered.

*Indicator 7: National policy and legislation updated, and MSPs developed which incorporate any relevant spatial-temporal measures addressing bycatch management and discards reduction.*

*Indicator 8: Area of marine habitat under improved practices (excluding protected areas) expected to be around 10% of the overall EEZ (529,950 km<sup>2</sup>).*

Outcome 2.3:

Monitoring, control, compliance and enforcement frameworks governing bycatch management and discards reduction in fishing fleets within CLME+ fisheries strengthened.

*Indicator 9: Increased uptake of responsible fishing practices that better manage bycatch and reduce discards through targeted incentives, strategies and measures among fishing communities.*

Component 3: Encouraging behavioural change for adoption of effective bycatch mitigation and discard reduction measures in target CLME+ fisheries, supporting the implementation of the CLME+ SAP priorities.	Technical Assistance	<p><i>Note: this component will particularly address the SAP priorities through actions to encourage responsible fisheries practices (Strategy 2).</i></p> <p><u>Outcome 3.1:</u> Incentives, strategies and measures to support behavioural change of stakeholders towards more responsible fishing practices (focused on bycatch mitigation) developed and widely available in target CLME+ fisheries.</p> <p><i>Indicator 10: Number of income-generating opportunities that address bycatch mitigation provided at selected pilot sites (to be identified in the PPG phase).</i></p> <p><i>Indicator 11: Number of discards reduction and ALDFG good</i></p>	<p><u>Output 3.1.1:</u> Socio-economic (including cost-benefit) analyses associated with adoption of mitigation technologies and measures to manage bycatch and reduce discards and the adverse effects of fishing gears undertaken and promoted, with results communicated to key fishery industry stakeholders in target CLME+ fisheries.</p> <p><u>Output 3.1.2:</u> Strategies, measures and opportunities to encourage fishers and markets to reduce unwanted bycatch identified, developed and piloted.</p> <p><u>Output 3.1.3:</u> Capacity building for fisher communities to engage with new opportunities associated with addressing bycatch and ALDFG delivered.</p>	GET	1,000,000.00	4,920,000.00
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*practices adopted by fisherfolk organizations and fish processing industry organizations in target fisheries (to be identified in the PPG phase).*

*Indicator 12: Number of direct beneficiaries working in the harvesting and post-processing sectors benefiting directly and indirectly from the project (target estimated to be of around 6,660 males and 2,670 females)*

Component 4: Knowledge Management and lesson learning, supporting implementation of the CLME+SAP priorities.	Technical Assistance	<p><i>Note: this component will particularly address the SAP priorities through actions at the regional level (Strategy 3).</i></p> <p><u>Outcome 4.1:</u> Knowledge of measures, options and incentives for addressing bycatch mitigation and discards to improve sustainability of fisheries increased among key stakeholder groups (individual fishers, fishing industry and fish-buying public).</p>	<p><u>Output 4.1.1:</u> Knowledge Management, awareness-raising and communication strategy and action plan to promote greater understanding of bycatch mitigation practices developed and implemented.</p> <p><u>Output 4.1.2:</u> Project lessons learned and recommendations for successful implementation of effective bycatch mitigation and discard measures identified and disseminated.</p> <p><u>Output 4.1.3:</u> Roadmap for scaling successful solutions for better management of</p>	GET	525,669.00	2,500,000.00
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*Indicator 13: Number of webinars/reports/publications/local awareness-raising events and other knowledge products delivered to disseminate knowledge from the project (results, good practice and lessons learned).*

Outcome 4.2: Effective project implementation based on adaptive management.

*Indicator 14: Recommendations from operational M&E system fed back into project implementation.*

bycatch and reduction of discards in CLME+ fisheries and beyond developed and promoted by relevant stakeholders.

Output 4.2.1: A gender-sensitive project Monitoring and Evaluation (M&E) system designed and operational

Output 4.2.2: Mid-term Review and Final Evaluation carried out.

Sub Total (\$)	5,075,669.00	23,385,884.00
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**Project Management Cost (PMC)**

GET	253,783.00	1,180,000.00
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Sub Total(\$)	253,783.00	1,180,000.00
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Total Project Cost(\$)	5,329,452.00	24,565,884.00
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C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
GEF Agency	FAO	In-kind	Recurrent expenditures	6,000,000.00
Other	WECAFC	In-kind	Recurrent expenditures	1,750,000.00
Recipient Country Government	Fisheries Division, Ministry of Maritime Affairs and the Blue Economy, Government of Barbados	In-kind	Recurrent expenditures	3,000,000.00
Recipient Country Government	Fisheries Department, Ministry of Agriculture, Government of Guyana	In-kind	Recurrent expenditures	1,500,000.00
Recipient Country Government	Fisheries, Ministry of Agriculture, Animal Husbandry and Fisheries, Government of Suriname	In-kind	Recurrent expenditures	2,000,000.00
Recipient Country Government	Fisheries, Ministry of Agriculture, Animal Husbandry and Fisheries, Government of Suriname	Public Investment	Recurrent expenditures	1,080,000.00
Recipient Country Government	Fisheries Division, Ministry of Agriculture, Land and Fisheries, Government of Trinidad and Tobago	In-kind	Recurrent expenditures	528,703.00
Recipient Country Government	Fisheries Division, Ministry of Agriculture, Land and Fisheries, Government of Trinidad and Tobago	Public Investment	Recurrent expenditures	207,181.00
Private Sector	Private sector fisheries operators (such as Cornelis Vrolijk B.V. and Parlevliet en Van der Plas B.V).	In-kind	Investment mobilized	7,500,000.00
Other	Academic Institutions (such as UWI-CERMES, CARDI)	In-kind	Recurrent expenditures	500,000.00
Donor Agency	International donors (such as NOAA, Caribbean Development Bank, Inter-american Development Bank, WWF, Conservation International)	In-kind	Recurrent expenditures	500,000.00
Total Project Cost(\$)				24,565,884.00

### **Describe how any "Investment Mobilized" was identified**

The figure for co-financing by the private sector in Table C is based on initial discussions with four participating Government fisheries agencies, corresponding FAO Country Offices, and fishing industry sources, including fishing companies involved with the REBYC II LAC project. The latter include vessel owners, fish processors as well as fishing gear suppliers (particularly important for addressing ALDFG). Specific companies operating in the region, either directly or through daughter companies that offer possibilities for co-financing include: in Suriname, Heiploeg Suriname N.V. (seabob shrimp trawl), SAIL N.V. (seabob shrimp trawl), NISAD N.V. (Penaeus shrimp trawl), Carib Fisheries (Penaeus shrimp trawl), Marisa Fisheries (demersal fish trawl), Ansu Fisheries (demersal fish trawl), Holsu N.V. (demersal fish trawl), and Deep Sea Atlantic N.V. (demersal fish trawl, which is also engaged in a Fisheries Improvement Project that offers additional opportunity for co-financing)), and and SUVVEB N.V. (pelagic longline); in Guyana, Pritipaul Singh Investments Inc. (seabob shrimp trawl), and Noble House Seafood (seabob shrimp trawl); in T&T 11 processing companies with operations in T&T (e.g. Trinidad Seafoods Limited), and in Barbados the companies Shorelinez and Ocean Fisheries. In addition, there are SSF associations and/or cooperatives in all four participating countries that may be able to contribute additional in-kind co-financing to project activities, depending on the fisheries/gears addressed. These will may include the Barbados National Union of Fisherfolk Organisations (BARNUFO) and the Central Fish Processors association (CFPA); the Guyana Association of Trawler Owners and Seafood Processors (GATSOP), which has within its membership trawling and processing companies (such as Noble House Seafoods in Guyana); and in Trinidad and Tobago, the Trinidad and Tobago Longliners' Association and the Trinidad and Tobago Industrial Fishing Association Limited, are also relevant. Initial discussions on participation in the REBYC III CLME+ project have been held with several of these companies above but detailed agreements on their level of involvement and level of co-financing will only be confirmed at the PPG stage once project activities have been fully developed. Consequently, it is not possible at the PIF stage to provide an indicative co-financing amount for each private sector entity identified as a potential partner to the REBYC III CLME+ project. However, based on initial discussions and experiences from the REBYC II LAC project overall co-financing of USD 7,500,000 or more is expected. This will be largely, if not entirely, in-kind co-financing, but will include important contributions to the project such as industrial fisheries companies providing vessels and crew (which are expensive) for sea trials to test bycatch mitigation devices and alternative fishing practices. The investments mobilized will contribute to more ecosystem-based fisheries management, as almost all the fishing vessels operating in the participating countries waters are privately owned. FAO expertise on private sector engagement at the international and regional levels, together with WECAFC attitude at working closely with key industry organisations, will ensure strong engagement and clear identification of the private fisheries sector in the fisheries sector. The project will be instrumental to stimulate private sector engagement along value and supply chains to manage bycatch and reduce discard impacts, working with both large-scale commercial fishing fleets and SSF and identifying new investment opportunities for responsible fisheries and marine conservation. PIF's Section 4. Private sector engagement provides detailed information about this.



D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
FAO	GET	Regional	International Waters	International Waters	5,329,452	506,298	5,835,750.00
Total GEF Resources(\$)					5,329,452.00	506,298.00	5,835,750.00

E. Project Preparation Grant (PPG)  
PPG Required true

PPG Amount (\$)				PPG Agency Fee (\$)			
150,000				14,250			
Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
FAO	GET	Regional	International Waters	International Waters	150,000	14,250	164,250.00
Total Project Costs(\$)					150,000.00	14,250.00	164,250.00

Core Indicators

Indicator 5 Area of marine habitat under improved practices to benefit biodiversity (excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5,229,500.00			

Indicator 5.1 Number of fisheries that meet national or international third party certification that incorporates biodiversity considerations

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Type/name of the third-party certification

Indicator 5.2 Number of Large Marine Ecosystems (LMEs) with reduced pollutions and hypoxia

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (achieved at MTR)	Number (achieved at TE)

0

0

0

0

LME at PIF

LME at CEO Endorsement

LME at MTR

LME at TE

Indicator 5.3 Amount of Marine Litter Avoided

Metric Tons (expected at  
PIF)

Metric Tons (expected at CEO Endorsement)

Metric Tons (Achieved at MTR)

Metric Tons (Achieved at TE)

Indicator 7 Number of shared water ecosystems (fresh or marine) under new or improved cooperative management

Number (Expected at PIF)

Number (Expected at CEO  
Endorsement)

Number (Achieved at  
MTR)

Number (Achieved at  
TE)

Shared water  
Ecosystem

Caribbean sea, North Brazil  
Shelf

Count



2

0


0

0


**Indicator 7.1 Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation (scale of 1 to 4; see Guidance)**


Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)	
Caribbean sea	4				
North Brazil Shelf	4				

**Indicator 7.2 Level of Regional Legal Agreements and Regional management institution(s) (RMI) to support its implementation (scale of 1 to 4; see Guidance)**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)	
Caribbean sea	3				
North Brazil Shelf	3				

**Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministeral Committees (IMC; scale 1 to 4; See Guidance)**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)	
Caribbean sea	3				

North Brazil Shelf	3	
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Indicator 7.4 Level of engagement in IWLEARN throgh participation and delivery of key products(scale 1 to 4; see Guidance)

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Caribbean sea	3			
North Brazil Shelf	3			

Indicator 8 Globally over-exploited fisheries moved to more sustainable levels

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
37,000.00			

Fishery Details

The “over-exploited marine fisheries moved to more sustainable levels” core-indicator was calculated as the 25% of the overall catch in the target fisheries (landings: 94,800 tons; discards: 55800 tons). Source: Pérez Roda et al. [1]

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	2,670			
Male	6,600			
Total	9270	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Re to Core Indicator 5: Exclusive Economic Zone (EEZ) extents: Guyana 137,765 km<sup>2</sup>; Suriname 127,772 km<sup>2</sup>; Trinidad and Tobago 75,000 km<sup>2</sup>; Barbados 185,006 km<sup>2</sup>. The expected area of marine habitat under improved practices is calculated as the 10% of the overall EEZ (529,950 km<sup>2</sup>). Source: Worldfact Book CIA ([www.cia.gov/the-world-factbook/](http://www.cia.gov/the-world-factbook/)). Re to Core Indicator 11: Based on available FAO country profiles, figures refer to aggregated harvesting and post-processing sectors (Barbados: 6000 harvest, 4000 process; Guyana: 8400 harvest, 5000 process; T&T: 5500 harvest, 1225 process; Suriname: 4800 harvest, 2400 process). To estimates disaggregated values for M/F, we used 90% are males for harvesting, 35% are males for post-processing. The core indicator target is based on 25% of the total number of men and women involved in the relevant fisheries following guidance from FAO regional fisheries experts.

## Part II. Project Justification

### 1a. Project Description

#### Project context

The Caribbean and North Brazil Shelf Large Marine Ecosystems (jointly referred to as “the CLME+ region”) are bordered by 26 Sovereign States and 18 Overseas Territories (Figure 1) and covers an area of 4.4 million km<sup>2</sup>. The CLME+ region is regarded as one of the most geopolitically diverse and complex LMEs in the world. The culturally diverse countries and territories that border these LMEs area range from among the largest (e.g. Brazil, Colombia) to among the smallest (e.g. Barbados, St. Kitts and Nevis) and from some of the most developed to the least developed in the world. It also includes the world’s largest grouping of Small Islands Developing States (SIDS), consisting of 23 independent countries and overseas territories. As a result, there is an extremely wide range in their capacities for living marine resource management.





**Figure 1:** The CLME+ region as defined under the UNDP/GEF "CLME+" project. The CLME+ region consists of 26 Sovereign States and 18 Overseas Territories within two Large Marine Ecosystems.

The marine and coastal systems of the CLME+ region support exceptionally high levels of unique marine biodiversity including Endangered, Threatened and Protected species (ETP), e.g. sharks, rays, turtles, marine mammals, and seabirds, and globally important ecological processes. For instance, approximately 10% of the world's coral reefs, and around 20% of the remaining mangrove forests are located within the CLME+ region. Similarly, it is estimated that at least 25 to 50% of the world's seagrass beds are within the CLME+ region [2]. Mangrove forests, seagrass beds and salt marshes provide nursery grounds for

regionally and globally important fish stocks and globally contribute almost 50% of the total organic carbon buried in ocean sediments, known as 'blue carbon'. As such, these habitats help in mitigating the rise in atmospheric greenhouse gases (GHG), and provide nursery grounds for regionally and globally important fish stocks [3]. The continental shelf and pelagic ecosystems are also of high relevance for fisheries [4].

The CLME+ region supports an important fishery industry (both industrial and small-scale fisheries, as well as recreational), which along with tourism forms the main source of livelihoods for the populations of coastal areas. Indeed, fisheries are a key economic driver for the region's economy and a significant provider of food security and nutrition, livelihoods and income. It is estimated that more than 900,000 people are employed directly in capture fisheries, with another 3 million jobs in ancillary activities such as processing, net-making and boat building [5, 6], and, as a whole, the region supported total fishery catches of 890,500 tonnes of fish in 2014 worth approximately US\$ 2 billion annually [7]. However these figures are not considered to reflect the true importance of region's fisheries as in many CLME+ countries there are significant small-scale artisanal fisheries (SSF)[1] that are under-reported [9]. Many SIDS highly dependent on fish for food with annual individual per capita consumption rates twice world average [10]. The fisheries of greatest importance are for offshore pelagics, reef fishes, lobster, conch, shrimps, continental shelf demersal fishes, deep slope and bank fishes and coastal pelagics [5]. Demersal fish and shrimp are the main fishery resources in coastal waters and on the continental shelf. Indeed, the economic and social importance of fisheries, and the need for sustainable fisheries, is recognised in many regional and national policies and plans, and highlighted in the 10-year Strategic Action Programme (2015-2025) prepared for the CLME+ region, termed the CLME+ Strategic Action Programme (SAP) [11]. In common with other tropical and sub-tropical regions, coastal shrimp and groundfish fisheries are particularly important for livelihoods and food security [12] and can be an important source of foreign exchange for many developing countries. The fishery types vary widely in their levels of exploitation, vessel and gear used, and approach to their development and management. However, most coastal resources are considered to be overexploited. Some 55 percent of the commercially harvested fisheries stocks in the region are already overexploited or depleted and some 40 percent of the stocks are fully exploited [13]. A variety of fishing techniques are typically employed in small-scale operations to catch a variety of species including barriers or corrals, longlines, and gillnets, whereas industrial fisheries use lines and large traps to harvest lutjanids and carangids and trawling to harvest shrimp on the continental shelf [14], all of which can have significant bycatch.

#### **Box 1: COVID, its impacts on the CLME+ region and recovery opportunities offered through the project**

COVID-19 has impacted on the life of many Caribbean and South American countries, including Suriname, Guyana, Trinidad and Tobago, and Barbados, and exposed deeper vulnerabilities. According to the John Hopkins University of Medicine statistics Suriname had 41,419 cases and 876 deaths, Guyana had 31,638 and 783 deaths, Trinidad and Tobago had 50,459 and 1,474 deaths, and Barbados had 8,180 cases and 69 deaths (information accessed on 30 September 2021). However, the limited international travel to these countries has provided a limited shield from larger COVID infection spikes.

According to an FAO publication Food systems and COVID-19 in Latin America and the Caribbean: Towards inclusive, responsible and sustainable fisheries and aquaculture (Bulletin 15 25/09/2020), the pandemic has affected the operation of both the industrial and small-scale sectors of the fishing industry.

The early design of the proposed project has taken steps to minimize the risks related to the COVID-19 global pandemic in the area of community health, and further steps will be elaborated during the PPG phase based on an updated project Covid strategy. While the project will not directly generate risks related to construction or hazardous materials, there is a risk that travel to or from areas where COVID-19 is prevalent could pose a risk to the populations of participating countries, and to project staff and consultants/contractors. The project's detailed design (PPG phase) will include active steps to mitigate this risk, including training on pandemic-related guidance for project staff and stakeholders during the inception phase, and the expansion of standard monitoring of project operations to ensure that they are in conformity with FAO policies regarding travel, risk reduction, and other areas regarding the COVID-19 pandemic. The Project Manager will report on compliance to the Project Steering Committee and take any necessary steps to protect the health of staff,

consultants/contractors, and beneficiaries required by the situation. While the Covid pandemic remains emphasis will be placed on working remotely with lessons learned on how to effectively implement FAO-GEF projects over the last 18 months of the pandemic will be applied, such as how to successfully operate online workshops and capacity building activities.

Apart from the direct consequences on people's health, the disease has heavily impacted the region's economy and the Caribbean GDP is expect to contract significantly more than the global average as a consequence of Covid-19 increasing the already high vulnerability to climate change, hurricanes and other shocks that affect the region [15, 16]. The developing country status of the participating countries constrain the capacity of local authorities and international agencies to deal with pandemics, making them especially vulnerable to the economic and social impacts of the Coronavirus. As with many crises, the most vulnerable groups, such as coastal communities and informal workers, have suffered the greatest hardship, with decreased incomes and employment, increased poverty and food insecurity.

The proposed project will improve the resilience of targeted fisheries through better resource management and the reduction and improved utilization of bycatch, which will support the COVID-related recovery process and improve the long-term resilience of communities to future shocks. The project will offer opportunities to contribute to the rebuilding of more resilient, sustainable and equitable post-COVID societies specifically through improving livelihood opportunities, empowering communities and providing other social and environmental benefits based on supporting 'blue economy' initiatives, especially through project component 3. A recent study undertaken on behalf of the High-Level Panel for a Sustainable Ocean Economy [17], has proposed a set of priority opportunities to support such blue recovery, including 'invest in coastal and marine ecosystem restoration and protection'. The project will contribute to this aim.

## **a. The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)**

### Problem/threats

There are a number of challenges to achieving sustainable fisheries in the CLME+ region, as in many other tropical and sub-tropical LMEs, such as unsustainable bycatch and discards. Bycatch - the capture of unwanted sea life while fishing for different species - is closely tied to overfishing and a serious threat that causes needless loss of fish along with thousands of individuals of vulnerable species such as marine turtles and cetaceans. The REBYC-III CLME+ project largely focuses on the management of bycatch and reduction of discards but also addresses the adverse impacts of fishing gears on marine habitats and biodiversity particularly from Abandoned, Lost and otherwise Discarded Fishing Gears (ALDFG).

In general, fishing methods and gears are not 100% efficient. In many fisheries it is not possible to fish for just one species without incidentally capturing others, including other species of fish and invertebrates, marine mammals, sea birds and marine turtles, and/or to entirely avoid the capture of juvenile individuals of the target species. In some instances, this non-target catch may be retained by the fishery or returned to the water as discards, which can create additional mortality depending on the species.

The definition of bycatch used in this project is adapted from Pérez Roda et al. [1]: ***Bycatch** is the catch of organisms that are not targeted. This includes organisms that are outside legal-size limits, over-quotas, threatened, endangered and protected species, and discarded for whatever other reasons, as well as nontargeted organisms that are retained and then sold or consumed.* This can then be divided into the following components:

**Retained bycatch** - retained catch of non-targeted organisms (landed bycatch or by-product). This includes juveniles of the target species;

**Unwanted bycatch** - non-desired and discarded portion of the catch because of economic, legal, or personal considerations. These are animals thrown back (alive or dead) into the sea (and can also include “slipped” releases); and

**Incidental bycatch** of vulnerable and Endangered, Threatened, and Protected (ETP) species.

REBYC-III CLME+ seek to address all three subsets of bycatch. The term “bycatch” is relatively easy to categorize in industrial fisheries of developed countries, but becomes increasingly difficult when considering SSF, where almost all components of the catch can have some economic value and may therefore be a target for the fishery [18].

The definitions of discards used in this project is: ***Discards**, or discarded catch is that portion of the total organic material of animal origin in the catch, which is thrown away, or dumped at sea for whatever reason. It does not include plant materials and post-harvest waste such as offal. The discards may be dead, or alive* [1].

Bycatch is a pervasive problem in world fisheries [18]. Every year the world’s fisheries catch more than 20 million tonnes of bycatch - about 25 percent of the global marine capture fisheries production – and discard about 9.1 million tons [1]. This represents significant losses in terms of biomass and biodiversity and, in some coastal fisheries, a large percentage of bycatch are juveniles of commercially important fish which threatens the long-term sustainability of these fisheries. This is not only creating significant losses in terms of biomass and biodiversity, but also negatively impacts food security [19]. In addition, bycatch represents a wasteful use of natural resources [20] and reduces efficiency of fishing operations threatening economic as well as biodiversity and ecological losses.

Excessive levels of non-target vulnerable marine species [21] continue to be caught incidentally during active fishing, negatively impacting their populations with wider impacts on marine food webs and marine biodiversity, as well as reducing efficiency of fishing operations threatening economic as well as biodiversity and ecological losses. These include marine mammals, marine turtles, other marine fauna, and seabirds that are not typically retained or commercially valuable (i.e., in contrast to sharks) during harvest and post-harvest processes. FAO [19] estimates that bycatch of ETP species in marine fisheries adds up to some 1 million seabirds, 8.5 million turtles, 225,000 sea snakes, 650,000 marine mammals and 10 million sharks, and accounts for at least around 20 million individuals annually. A FAO review of bycatch and discards generated by all legal fishing practices [1] found that bottom trawling tends to have the highest overall levels of discards (accounting for 46% of global discards). However, fishing gears such as gillnets, longlines and seines can also produce high levels of unwanted and incidental bycatch and, in critical regions, particularly threaten ETP species [22, 23].

Recent data from the four participating countries [1] show for example preliminary estimated discard ratios of commercial species around 14% in the artisanal longline fisheries in Trinidad and Tobago, 43% in Suriname, Guyana and Trinidad and Tobago crustaceans trawl fisheries, 26% in gillnets targeting demersal fish in Guyana, and 12% in pelagic gillnet in Barbados and Trinidad and Tobago. In Suriname, bottom trawl, gillnet and longline fisheries are known to capture marine turtles (the capture of Leatherback turtles is particularly worrying), along with species of rays and sharks, including endangered species (e.g. giant manta ray), and occasionally also dolphins. In Trinidad and Tobago, there is an especially high level of incidental catch of turtles in artisanal gillnets on the north-east and east coasts of Trinidad. In terms of ETP species, studies show that 15 marine turtles (leatherback turtles *Dermochelys coriacea* the predominant species) per 100,000 hooks are caught in the artisanal pelagic longline fisheries of Barbados [24, 25].

In 2021, NOAA during the Congress on Improving International Fisheries Management flagged 41 nations and entities which had inadequate conservation measures to protect from illegal, unreported, and unregulated (IUU) fishing activities and bycatch of protected marine life on the high seas [26]. Barbados, Guyana, and Trinidad and Tobago were listed because they do not have adequate management measures in place to reduce bycatch of sea turtles in their fisheries that are comparable in effectiveness to those of the United States [26].

To compound the problem, Abandoned, Lost and otherwise Discarded Fishing Gears (ALDFG) has the potential to continue fishing. This is often referred to as 'ghost fishing' which can entangle and kill marine mammals, or fragments of ALDFG may be swallowed by turtles and seabirds. Ghost fishing can continue to catch both commercially important fish species and non-target species, representing an additional loss of fish (bycatch) and therefore potential food, revenue and livelihoods to local fisheries. Recent storms and hurricanes have caused substantial damage to the fisheries sector in the Caribbean region, related mainly to the loss of fishing gears, particularly passive gears (e.g., gillnets and traps), which is source of ALDFG. Global climate change is expected to increase the frequency and intensity of storms and hurricanes so this problem is likely to be exacerbated [27-29]. ALDFG is also known to cause physical damage to marine habitats, including fouling sensitive marine benthic habitats such as coral reefs and seagrass meadow in coastal waters, and can have far-reaching impacts on marine ecosystems, fisheries resources and coastal communities [30, 31]. It also poses problems to navigation and safety at sea. ALDFG is a significant component of marine litter washed up on beaches and is particularly problematic in gillnet and trammel nets as well as other passive fishing gears such as longlines, traps and pots. It is thought that ALDFG may comprise about 10% of all sea-based marine litter and the total annual quantity lost or disposed gear at sea is estimated at over 640,000 tonnes [30, 32].

The combined bycatch, discards and ghost gear losses in global fisheries, may account for over 30 million tonnes, which are substantial, in comparison with some 80 million tonnes marine capture fisheries production landed annually.

### Causes and Drivers (of the problem)

The problem of bycatch and discards in the CLME+ region is the result of a number of factors and drivers, including gaps in fisheries governance and management, inadequate or destructive fishing practices (e.g. fishing in the wrong habitat) and poor gear selectivity across most of fishing fleets (trawl and non-trawl target fisheries) [33]. These problems have been well-documented for decades [34], and indeed, the CLME+ SAP states that *'unsustainable fisheries, habitat degradation and pollution have been identified as the three most important problems impacting the societal benefits obtained from marine ecosystems'. [...] The problem of the unsustainability of fisheries and fishery practices in the region originates from a multitude of causes including the over-harvesting of target stocks and the direct and indirect impacts of activities on species, size groups or life stages that are not directly targeted by the fishery (e.g. "bycatch", use of destructive or "harmful" practices or gear that leads to habitat degradation or destruction). These impacts may be exacerbated by climate change.*

The economic reality of the fisheries sector is one of both global and local drivers. The demand for fish and fish products (for human consumption and for animal feed and aquaculture sectors, as well as for non-food uses such as pharmaceuticals) continues to grow globally, regionally and locally, and essentially, it comes down to excessive demand for a limited resource which threatens long-term sustainability of fisheries.

A reduction of stocks often leads to an increased fishing effort, and decreasing catches, compounded by increasing costs of fishing operations threaten the long-term viability of these fisheries and the social and economic conditions of coastal fishery dependent communities. The demand is also fuelled by government policies and incentives (financial, fiscal) that encourage investment in fisheries leading to overcapacity of the fishing fleets (too many boats chasing too few fish) across the region. Related to the latter are government policies that stress fish and marine resources as essential for food security in some countries, particularly as a source of protein (this can also be seen as a driver for reducing waste in fisheries industry) and as key parts of the economy (providing revenue and jobs). Technological developments, such as improved engines, haulers, more efficient fishing gears, fish location equipment, combined with increasing costs of fishing operations, also influence fishing intensity encouraging short-term gains and long-term losses.

## Barriers that need to be overcome to address the problems/threats

Despite previous attempts to address bycatch in specific fisheries in the CLME+ region, four main barriers continue to frustrate attempts to achieve long-term solutions to effective bycatch management and sustainable fisheries.

### Barrier 1. Limited effectiveness, availability and awareness of selective fishing approaches and technologies to address bycatch and other damage to the marine environment

Whilst some bycatch mitigation technologies have been tested and introduced to a small number of fisheries in the CLME+ region, including Turtle Excluding Devices (TEDs) in shrimp fisheries of Trinidad and Tobago, Guyana and Suriname, and Bycatch Reduction Devices (BRDs) for fish trawl fisheries in Suriname, selective fishing technologies to avoid bycatch are still of limited effectiveness and availability for many fisheries, particularly for some vulnerable species and suited to SSF (including artisanal fisheries). In addition, measures to address ALDFG remain underdeveloped in both industrial and small-scale fisheries. The situation is further compounded by the need to overcome established ways of fishing and risk aversion (inertia) to adopting new untried technology and practices among fisheries stakeholders. Awareness of potential technological developments to address bycatch in CLME+ fisheries remains limited among government representatives and fishing communities. Many countries do not have a robust framework for distributing information on bycatch mitigation measures on a regular basis or in an appropriate format. Improved sharing of knowledge focused on evaluating the positive effects of different technologies on fish and fisheries would enable management authorities to better engage in evidence-based decision making in a more timely manner.

### Barrier 2. Insufficient governance and management addressing bycatch with limited control, compliance and enforcement of current rules governing bycatch and discards

Many countries in the CLME+ regions have not yet fully updated their fisheries policies and regulatory to adhere to the international requirements (e.g. ICCAT) and their management frameworks related to the implementation of the Ecosystem Approach to Fisheries (EAF), and there remains limited control, compliance and enforcement of even current rules governing bycatch and discards, including those implemented as part of the recently completed FAO-GEF REBYC-II LAC project. In addition, poor resources for collecting fisheries data and difficulties in monitoring these fisheries have prevented more effective management actions to address undesirable bycatch levels [35, 36]. Limited monitoring, control and surveillance (MCS) is a critical barrier due to low capacity and resources among relevant agencies, including underdeveloped tracking and reporting technologies, such as Electronic Monitoring Systems (EMS) and more generally limited experience with ICT (Information and Communication Technologies) for fisheries management. Underpinning this barrier is a limited involvement by key stakeholder groups (especially from the community level) in decision-making on fisheries management with few arrangements or opportunities for co-management. There remains a clear need for better mainstreaming of the EAF concept, including the socio-economic dimensions, into fisheries management policy, regulations and practices.

### Barrier 3. Lack of incentives and sufficient opportunities to encourage adoption of bycatch and ALDFG management measures

Another critical barrier is the lack of incentives and sufficient opportunities to encourage and support fishers to adopt more responsible fisheries practices such as the uptake bycatch mitigation approaches/technologies. Incentives such as supportive government policies, easy access to financing for small scale fishers, fiscal incentives that encourage investment in equipment/technology, better developed value chains for fish products, access to certification schemes, promotion of co-management arrangements, etc. to reducing overfishing, to mitigate ALDFG and risk of ghost fishing or to combat IUU fishing. The situation is exacerbated by lack of knowledge of the benefits of new technologies and poor capacity, especially at the community level, to be able to access existing opportunities, with a need, for instance, for improved small business skills development among fisherfolk communities and tailored support for women in particular.

Barrier 4. Lack of knowledge and availability of information on threats posed by bycatch and to promote adoption of feasible solutions to manage bycatch, reduce discards and address ALDFG

There is limited awareness among policy makers, fisheries managers, fishing industry and fishing communities on the implementation of EAF and the impact that bycatch/discards can have on livelihoods and the marine environment, and the damage that can be created by ALDFG, or the multiple benefits that can be derived from responsible fisheries. Underlying this is a lack of open-access, easily available information on good practices, promising technologies and tools, and smart solutions for sustainable management of commercially important fish stocks, including how best to address bycatch and reduce discards and ALDFG and the cost/benefits of their introduction (including less energy intensive gears) [37, 38].

The project aims to develop measures to overcome these four barriers, each of which is addressed by a specific component and its associated outcomes and outputs.

**b. The baseline scenario and any associated baseline projects**

There are a number of key strategies, plans, programmes and other initiatives at regional and national level that provide the baseline for this project, which are outlined below. More background on the fisheries and their current management in Barbados, Guyana, Suriname and Trinidad and Tobago is given in Annex D.

Barbados, Guyana, Suriname and Trinidad and Tobago were chosen for a number of reasons, namely: 1) the recommendations of the REBYC II LAC's Terminal Evaluation; 2) the country-ies did not participate to REBYC II LAC yet has/have significant issues with bycatch and discards; and 3) commonalities of fisheries (fishing methods employed and target species, etc.).

Specifically, although Suriname and Trinidad and Tobago participated in REBYC II LAC project the project's Terminal Report and Terminal Evaluation and feedback from technical staff involved with the project indicated that further support is required to successfully implement bycatch mitigation measures in both countries trawl fisheries as well for other fishing gears not addressed by REBYC II but proposed under REBYC III. Barbados and Guyana did not participate in the REBYC II LAC project but have significant issues with bycatch and discards (outlined in the PIF). This was recently reported by NOAA (2021) to the US Congress on Improving International Fisheries Management by flagging 41 nations and entities which had inadequate conservation measures to protect from illegal, unreported, and unregulated (IUU) fishing activities and bycatch of protected marine life on the high seas. Barbados, Guyana, and Trinidad and Tobago were listed due to inadequate management measures in place to reduce bycatch of sea turtles in their fisheries. Moreover, the four countries have commonalities of fishing methods employed and target species (such as shrimp fisheries in Guyana, Suriname and T&T, and flyingfish, tuna and dolphin fish between Barbados and T&T), and common bycatch issues, which facilitates the application and up-scaling of bycatch and discard mitigation measures across the CLME+ region, and exchange of good practices. Finally, the selected countries also benefit from the presence of political support at ministerial level for sustainable fisheries, which is vital for project success both in the short term, and also in the longer term after the project has been completed.

**a. Regional or global programmes and interventions**

CLME+ Strategic Action Programme (SAP).

The proposed project builds on the significant progress made by a series of initiatives and investments (including GEF-funded projects) in the CLME+. Chief amongst these is the CLME Transboundary Diagnostic Analysis (TDA) and 10-year (2015-2025) 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) which are the key baseline analyses, programs and knowledge from which to build discussion on sustainable fisheries opportunities at the national level. The SAP has been endorsed at the political level by 25 countries from the CLME+ region. Three cross-cutting and inter-linked priority transboundary threats were identified by the TDA: (a) unsustainable use of fisheries resources, (b) habitat degradation and modification of the community structure of ecosystems, and (c) pollution [11], and the

SAP identifies 77 priority actions structured under 6 Strategies and 4 Sub-strategies to address these. The catalytic implementation phase of the SAP, which was delivered through the CLME+ Project and involved all four target countries of the proposed project, is coming to an end, but the baseline efforts of the CLME+ investments have provided the critical regional roadmap for transboundary management of marine resources for the CLME+.

### **Box 3: REBYC III CLME+ project link to the implementation of the CLME+ SAP**

The proposed project particularly seeks to support the implementation of the regional governance arrangements for sustainable fisheries (Strategy 2), the regional coordination mechanisms for ocean governance with initial focus on shared CLME+ Living Marine Resources (Strategy 3), and efforts to enhance the governance arrangements for implementing an ecosystem approach for pelagic fisheries (Strategy 5). More specifically, the proposed project will support the implementation of both sub-strategies 5A and 5B (flyingfish and large pelagics fisheries, respectively), through supporting appropriate measures to strengthen integrated and sub-regional Spatial Decision Support Systems (SDSSs) for both small-scale artisanal fisheries (SSFs) and industrial fisheries using an Ecosystem Approach to Fisheries (EAF). Together these will help meet the Ecosystem Quality Objective of the SAP of 'restoration and maintenance of fish stocks at a sustainable level and adoption of responsible fishing operations and fisheries management practices'. In addition, the project helps address the wider vision statement of the CLME+ SAP - 'a healthy marine environment in the CLME+ provides benefits and livelihoods for the well-being of the people of the region', and the SAP's stated Societal Benefits Objective 'Contribution to human well-being, socio-economic development, food security and enhanced livelihoods from goods and services provided by the ecosystems are optimized'.

Current progress on the implementation of the CLME+ SAP is reported on the [clmeplus.org](http://clmeplus.org) website – SAP Actions Progress Tracking Portal. The most recent progress reported (website accessed on 4 October 2021) indicates that for those actions under Strategy 2 of most relevance to the REBYC II CLME+ project and which it seeks to contribute to, namely actions 2.4, 2.6, 2.7, 2.8, 2.10, 2.13 and 2.14 there has either been no or only a partial assessment or poor delivery to date. For SAP Strategy 3, current progress is better reported but those actions which the REBYC III project seeks to contribute to, 3.4 and 3.7, are again only partially reported on but indicate support is still needed. For SAP Strategy 5, again progress on relevant SAP actions 5.2, 5.3, 5.4, 5.5 and 5.6, is limited or there have been no or only partial assessments which indicate that additional support is needed to deliver on this Strategy. For Strategy 5A, progress on those actions which the REBYC III project will contribute to 5A.4, 5A.6, and for Strategy 5B, actions 5B.1, 5B.2, and 5B.4 is similarly only partially reported on or no assessment has been made. Hence on the basis of the most recent reporting of implementation of the CLME+ SAP, measures proposed through the REBYC III CLME+ project to support achievement of SAP actions remain highly relevant.

From a fisheries perspective, all four countries participating in the REBYC III CLME+ project have been involved in the implementation of the CLME+ SAP. For instance, all four countries were involved with the WECAFC reorientation process and the RPOA-IUU development and have actively participated in capacity building of their fisheries administrations and other government agencies in Monitoring Control and Surveillance (MCS) training, among others (under Strategy 2); T&T has been particularly active in contributing to the development of the regional policy coordination mechanism for ocean governance (Strategy 3); and both Barbados and T&T were part of the CLME+ subproject on flyingfish fisheries coordinated by CRFM and contributed, among other activities, to the development of the sub-regional flyingfish fisheries of the Eastern Caribbean management plan (covered under SAP Strategy 5A). In addition, Guyana, Suriname and T&T participated in the CLME+ shrimp and groundfish subproject (covered under Strategy 6). Among other activities, the countries contributed to development of a subregional fisheries strategy and management plan for shrimp and groundfish resources, advanced the development of their national fisheries management plans with Suriname completing the process in early 2021, and all three countries have taken steps to improve their national fisheries statistical systems.



## WECAFC

The Western Central Atlantic Fishery Commission (WECAFC) is a Regional Fisheries Body (RFB) established in 1973 under FAO's constitution to promote effective conservation, management and development of living marine resources within its area of competence. It includes Barbados, Guyana, Suriname and Trinidad and Tobago as members. As a key regional actor, WECAFC has been active in supporting institutional partnerships with other key multilateral organizations promoting the management of fisheries resources of the CLME+ in the WECAFC area. This includes promoting the development of strategies on bycatch and discards management that ensure a common approach across borders [39]. The WECAFC has an extensive record of fisheries project implementation in the region. WECAFC is also involved in a number of joint working groups (WG) with other RFBs, particularly involving CRFM, OSPESCA and the Caribbean Fishery Management Council (CFMC). Those most relevant to the proposed project include the CRFM/OSPESCA/WECAFC-FAO Regional Working Group on Illegal, Unreported and Unregulated Fishing (RWG IUU), the WECAFC-CRFM-OSPESCA - Fisheries Data and Statistics Working Group (FDS WG) and WECAFC/OSPESCA/CRFM/CFMC Working Groups on recreational fisheries (RF WG), Sharks and Rays (SR WG), and Shrimp and Groundfish (SG WG). These WGs will act as sources of technical inputs to the project as well as providing a channel to upscale project results over a wider geographic area through their member countries.

## The Caribbean Community Common Fisheries Policy (CCCFP) and the Caribbean Regional Fisheries Mechanism (CRFM)

In addition to the CLME+ SAP, there are several Caribbean Community (CARICOM) policies supporting responsible fisheries. These include the Strategic Plan for the Caribbean Community (2015-2019), the Caribbean Regional Fisheries Mechanism (CRFM) Strategic Plan (2013 to 2021), and the Caribbean Community Common Fisheries Policy (CCCFP). The latter was adopted in October 2014 and outlines goals for fisheries, aquaculture, and other living marine resources, coupled with conservation, management and protection of the fish stocks and associated marine habitats and ecosystems. The policy also stresses improvements in social and economic conditions, good governance, fairness, and equity so that sustainable benefits are equitable to all. The Caribbean Regional Fisheries Mechanism (CRFM) was established in 2002 to coordinate and promote regional cooperation for sustainable use, management and conservation of living marine resources and marine ecosystems and is the key RFB for the Caribbean. The CRFM has 17 members, including the four project countries. Its Strategic Plan (2013 to 2021) maps out the region's priorities for fisheries development and management, with an objective to obtain optimum sustainable social, economic, and nutritional benefits for an overall improved quality of life for fishermen and fishing communities, while preserving fish stock and marine ecosystem health and productivity. The CRFM has an extensive record of fisheries project implementation in the region, and is expected to participate in some components of the project, particularly those involved in development and adoption of bycatch/discards measures (Component 1), and dissemination and lesson learning (Component 4).

## FAO interventions

FAO also has a number of programmes and projects relevant to the baseline for this project. These include the 5-year Intra-ACP Blue-Growth Programme for Sustainable Fisheries and Aquaculture Value Chains FISH4ACP) initiative which aims to contribute to economic growth, job creation, food and nutrition security by improving the economic, social and environmental sustainability of fisheries and aquaculture value chains in African, Caribbean and Pacific (ACP) countries. Co-financing partners include the European Union (EU) and the German Federal Ministry for Economic Cooperation and Development (BMZ). In terms of the current project, the FISH4ACP has supported improvements to the productivity and competitiveness of Atlantic seabob fisheries in Guyana (the world's largest producer of Atlantic seabob), a commercially important shrimp captured from the Atlantic coast of the US all the way down to Brazil. FISH4ACP will work to increase small-scale fisheries production in the sector and strengthen the role of women and youth, while seeking to improve safety and workers' rights. At the same time, it will support efforts to reduce bycatch, in particular of endangered species, such as the electric ray. Trinidad and Tobago have also

been receiving technical support from the FAO through Project GCP/INT/228/JPN - "Fisheries Management and Marine Conservation within a Changing Ecosystem" since 2016/2017 for the development of an integrated fisheries management information system with initial focus on the Vessel Registry and Landings Database.

#### **b. GEF-supported projects**

The GEF, through its IW Focal Area, has fostered the use of the LME approach since 1995, and the project will build off a number of previous GEF investments in the Caribbean region and beyond.

##### REBYC projects

Of most relevance for the current project are several previous REBYC projects developed by FAO over the last 15 years (REBYC (GEF ID: 884), REBYC-II CTI (GEF ID: 3619) and REBYC-II LAC (GEF ID: 5304) which have built on one another and significantly advanced best practices in bottom trawl fishing. Whether by developing appropriate Bycatch Reduction Devices (REBYC), advancing proper management and an ecosystem approach to fisheries (REBYC-II CTI) or combining technological adaptation with strengthened policies, institutions and organizations (REBYC-II LAC), the impact of these initiatives has been substantial<sup>[2]</sup>. The REBYC projects have been successful in creating enabling environments, such as through national dialogues to establish rules, zoning, best practices for trawl fisheries and co-management arrangements. The projects' interventions have resulted in coastal fishing area maps, improved ability to manage maritime areas, technology transfers, and active testing and implementing of bycatch reduction devices.

Of most relevance to the current proposal is the 5-year FAO-GEF project "*Sustainable Management of Bycatch in Latin America and Caribbean Trawl Fisheries (REBYC-II-LAC)*". This recently completed project included a partnership between six countries (including Suriname and Trinidad and Tobago) and regional organizations to better manage bycatch and support the sustainable development of trawl fisheries focused on shrimp/bottom trawling and the people who depend on them. The REBYC-II LAC project improved understanding of how to motivate behavioural change among fishers, e.g., engagement of stakeholders in decision-making, promoting dialogue, policy and legislation, demonstrating potential for enhanced livelihoods, increasing awareness, elevating visibility of women in value chain, and building trust among stakeholders. Results have been consolidated and incorporated into national fisheries legislation and management plans, and in the regional strategy and management plan. The current project particularly builds on the results of the REBYC-II LAC project but expands its scope to address bycatch in other gear types, notably gillnets and longlines, and for other countries in the region, as well as other negative impacts of fishing gears (ALDFG and ghost fishing), introducing new approaches and an increased emphasis particularly on SSF which, given their dominance in the region, have a significant cumulative impact on the sustainability of fisheries and food security in the region.

However, despite the successes of past REBYC projects and the REBYC-II LAC in particular, there remain a number of outstanding issues. The draft independent Terminal Evaluation (TE) <sup>[40]</sup> of the REBYC-II LAC project<sup>[3]</sup> identified a number of gaps that require follow-up. These include a recommendation that technology transfer between countries and fisheries needs to be extended across gear types and scaled up across the region. The TE also noted that there is still a need to address '*other trawl impacts apart from bycatch (e.g., impact on benthic habitats)*' as well as '*ghost fishing, and fundamental differences between small-scale and large-scale trawl fisheries in the design of bycatch reduction strategies and other management measures*'. As noted, bycatch is not just a problem of trawl fisheries, but is also prevalent in other fisheries using gears such as gillnets, traps and long-line. Previous evaluations of other REBYC projects also identified the need for additional efforts to spur behavioural change and innovation and the TE of the REBYC-II LAC project made a recommendation for '*more focus on gender, livelihoods, private sector engagement/co-management, incentives, fishery certification that is appropriate for national and regional contexts*'. Previous projects were also lacking specific linkages with biodiversity goals, which the proposed project seeks to address (with special emphasis on ETP species and vulnerable habitats and through support for strengthening marine spatial planning process by providing a special emphasis on bycatch and discards). On the social front, previous REBYC projects, including REBYC-II LAC, provided models on how to successfully strengthen

fisherfolk organizations to effectively participate in decision-making and management processes. However, additional efforts are required to connect fishing communities, including post-harvest workers, across countries and regions. The proposed project directly addresses the above gaps with a widened scope compared with the REBYC-II LAC project.

#### PROCARIBE+ project

The recently approved “*Protecting and Restoring the Ocean’s natural Capital, building Resilience and supporting region-wide Investments for sustainable Blue socio-Economic development (PROCARIBE+)*” project has been specifically designed to continue supporting and upscaling the coordinated and synergistic implementation of both the CLME+ SAP and the “People Managing Oceans” civil society SAP, as well as of the associated regional and sub-regional strategies and action plans. The project will produce the next iteration of the regional SAP(s) by 2025. In doing so, the project aims to support effective planning and managing the marine space and its uses in order to protect, restore and sustain coastal and marine ecosystem goods and services, and to achieve ocean-based, climate-resilient, inclusive socio-economic recovery and development, through inter alia the development of “blue” economies”. The proposed REBYC-III CLME+ project compliments the delivery of this project through supporting its sustainable management of marine resources aims.

#### CAF-FAO-GEF Blue economy project

The recently approved CAF-FAO-GEF *Promoting National Blue Economy Priorities Through Marine Spatial Planning in the Caribbean Large Marine Ecosystem Plus* (BE-CLME+) project supports national and regional development priorities and will contribute Blue Economic development and implementation plans for the Caribbean/CARICOM region, with tailored national blue economy and financing strategies to support sustainable development, and, particularly important as baseline the proposed REBYC-III CLME+ project, includes the use of Marine Spatial Planning to inform establishment of MPAs and promotion of ecosystem-based fisheries management. The proposed REBYC-III CLME+ project compliments the delivery of this project through supporting greater blue economy opportunities through management of bycatch and discards, particularly in SSF.

#### c. Other GEF-funded fisheries-focused projects in the CLME+ region

The proposed project builds on several other GEF-funded fisheries-focused projects operating in the CLME+ region. These include the FAO-GEF “*Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (CC4FISH)*” project, which includes Trinidad and Tobago. This project seeks to address climate change impacts on food security, livelihoods and household income. The project’s main approaches to increasing resilience of the fisheries sector to climate change are through: i) increased awareness and knowledge on climate change vulnerability of the fisheries sector; ii) capacity building of fisherfolk, fisherfolk organizations and aquaculturists; and iii) mainstreaming of climate change into fisheries policies, plans and legislation. The proposed project will draw on the CC4FISH results relating to climate change adaptation in the fisheries sector to improve resilience of the fisheries sector and the uptake of new ICT, but it also complements the CC4FISH project by adding value, opportunities, technology for data, and capacity for fisherfolk engaged in CC4FISH to realize national responsible fisheries opportunities for Eastern Caribbean island nations, principally in relation to bycatch mitigation.

Other GEF-funded projects in the region relevant as baseline for the proposed REBYC-III CLME+ project include the “StewardFish” project. This project seeks to empower fisherfolk throughout fisheries value chains to engage in resource management, decision-making processes and sustainable livelihoods, with strengthened institutional support at all levels, and includes Barbados and Guyana. The key baseline elements supporting the proposed project are: i) development of organizational capacity for fisheries governance; ii) enhancing ecosystem stewardship for fisheries sustainability; and iii) securing sustainable livelihoods for food and nutrition security. Another relevant baseline and complementary project is the “*Enhancing capacity for the adoption and implementation of EAF in the shrimp and groundfish fisheries of the North Brazil Shelf Large Marine Ecosystem (EAF4SG)*” project which has been submitted

for GEF approval. The project aims to enhance the capacity of the four beneficiary countries (Brazil, Guyana, Suriname and Trinidad and Tobago) for sustainable shrimp and groundfish fisheries management, with support for marine spatial planning (MSP), technical measures for stock conservation and to protect biodiversity, and improved performance of small-scale fisheries (SSF).

#### d. National fisheries efforts to address bycatch

Most national baseline efforts to address bycatch and implement the EAF and sustainable fisheries management plans have relied heavily on funding from the regional initiatives above. In terms of the countries participating in the proposed project, each nation differs to the extent to which effective bycatch management, discard mitigation and ALDFG measures have been developed, adopted and implemented and the degree of governance and institutional development necessary for the successful management of bycatch in their fisheries.

#### Bycatch, discard and ALDFG mitigation techniques and measures and uptake within the CLME+ region

There are various types of approaches and measures to manage bycatch and to protect juveniles and reduce discards of unwanted or prohibited species, including modifications to fishing gear or fishing practices, spatial and temporal measures (time and area restrictions), bycatch limits, effort restrictions and discard bans (e.g., European landing obligations). A variety of bycatch reduction devices have been developed over recent years to address bycatch of (i) juvenile target and non-target fish; (ii) marine turtles; (iii) elasmobranchs (sharks and rays); (iv) seabirds; and (v) marine mammals. Among the most common and successful bycatch reduction devices developed to date are the Super Shooter for marine turtles, marine mammals and elasmobranchs, Fisheye and the square-mesh window for non-target fish species, grid system for marine mammals, and a variety of approaches for seabirds. In addition, discards can be reduced through fleet communication, awareness raising, training, and economic incentives.

The main previous efforts to address bycatch in the CLME+ region have been through the FAO-GEF REBYC II LAC project (described above), although this targeted only the bottom trawl fisheries. Significant efforts were made under this project to reduce discards in many shrimp fisheries (e.g., Brazil, Suriname). This includes testing TEDs, BRDs, square-mesh panels and fisheye, and reported results indicated a minimum 20% bycatch reduction in BRD trials in the counties involved in the REBY-II LAC project. However, there were significant differences between countries in the experimental designs for evaluating the performance of the gear modifications, making comparisons problematic. In addition, outreach and extension efforts were poorly documented or described, and it appears that only a few countries engaged in comprehensive programs to share information with fishers and others.

Under the REBYC-LAC project, Suriname undertook various activities related to trawler bycatch, including studies to quantify and characterize bycatch in various fish and shrimp trawling fleets, reduce bycatch through the development of Turtle Excluding Devices (TEDs) and Bycatch Reduction Devices (BRDs) and participated in experiments related to the utilization of bycatch. However, work on bycatch in fisheries other than trawling has been very limited in Suriname.

In Trinidad and Tobago, there has been some research into bycatch mitigation approaches. For instance, square mesh paneling to facilitate the release of unwanted bycatch, including juveniles has been successfully tested on the double-rigged non-artisanal trawlers, and there are plans to incorporate the mandatory use of BRD in all non- artisanal trawlers (both double-rigged and single stern) in the regulations. However, appropriate BRDs remain to be identified and tested for the artisanal trawlers. In addition, preliminary joint discussions were held in January/February 2021 between the National Sea Turtle Task Force (NSTTF) of Trinidad and Tobago, Fisheries Division and researchers from NOAA, Arizona State University and Ecolibrium Inc. to develop leatherback bycatch reduction solutions that will benefit both fisherfolk and turtles. Previous research has also been conducted in Trinidad by WIDECast, including recommendations for gillnet modifications to reduce incidental capture of turtles, the introduction of alternative line fishing methods and the identification of potentially important areas for management. Also, during the CLME+ Shrimp and Groundfish Sub-Project, a process was initiated to develop an integrated fisheries management plan for Trinidad and Tobago, incorporating updates from the REBYC-II LAC BRD gear trials and shrimp trawl bycatch value chain study.

Some countries in the CLME+ region have now introduced TED regulations to protect sea turtles, with associated monitoring, control, and surveillance actions. This has partly been in response to Section 609 of Public Law 101-162 of the United States of America which requires fisheries to reduce marine turtle bycatch in order to export wild shrimp to the United States, as well as the US Marine Mammal Protection Act which is helping to reduce bycatch of marine mammals. However, regulations to reduce other bycatch including non-target fish bycatch, are much less developed or non-existent in the region, and appropriate technology is either non-existent or unobtainable, and most countries require additional technical support and guidance on bycatch management and discard reduction, particularly those countries that have made only modest, slow, or no gains due to lack of capacity or funding.

Current global efforts to address ALDFG are lead by FAO who is collaborating with International Maritime Organisation on a 4.5-year NORAD-funded GLoLitter Partnerships (GLP) programme which commenced in early 2020. GLP assists developing countries to prevent and reduce marine plastic litter from the maritime transport and fisheries sectors and identify opportunities for the reduction of plastic uses in both fisheries and maritime transport sectors. The FAO component of GLP specifically addresses concerns about Abandoned, Lost and otherwise Discarded Fishing Gear (ALDFG). The project helps support development of responsible fisheries in line with the Code of Conduct for Responsible Fisheries and the SDG target 14.1 to achieve significant reduction of marine pollution of all kinds. Although GLP is global programme including the CLME+ region, none of the 34 participating countries are REBYC III project target countries. However, lessons learnt to address ALDFG under the GLP will be applied to REBYC III target countries helping them to successfully address ALDFG. Although the governments of all the participating countries are looking for ways to introduce mandatory marking of fishing gear to address ALDFG, these have yet to be developed and implemented. To date, measures are largely focused on prohibiting certain gears, e.g. in Suriname the use of monofilament nets is prohibited in most fisheries since these are notorious for causing ghost fishing when lost in the environment. In Trinidad and Tobago, a draft Hard-substrate Demersal Fisheries Management Plan (2014-2019) includes a proposal to ban monofilament bottom-set gillnets in hard-substrates, and the Fisheries Management Bill 2020 makes provisions for regulations to be drafted to address registration, identification, use and management of fishing gear, including retrieval of lost fishing gear.

A more detailed baseline study on the extent to which bycatch management, discard reduction and measures to mitigate ALDFG have been addressed in the four participating target countries will be undertaken during the PPG.

#### Policy and regulatory frameworks and institutional capacity for MCS

Fisheries monitoring, control, surveillance (MCS) and enforcement, including for bycatch management, are generally weak in the region and need significant strengthening in all the participating countries, especially the skills and expertise for inspections (at sea and in port) on industrial vessels (inspection of trawl gear, longlines, engine capacity, etc.). Trinidad and Tobago, for instance, has developed a National Strategy and Road Map to implement provisions of PSMA and other complementary international instruments and mechanisms to combat IUU fishing, but lacks sufficient resources to effectively implement it. Specific needs identified include training for staff of the Fisheries Division and other relevant national agencies in implementation of national fisheries laws, use of MCS tools such as use of EMS, VMS and e-logs as well as species identification (whole and dressed product form), sampling techniques, and preservation of samples (i.e. for further species identification and evidence). In addition, there is a shortage of equipment to facilitate inspections of, and data collection on, catch and vessels at sea, at port and on land (e.g. landing site and processing facilities). An updated national Fisheries Management Plan (2021-2025) was recently endorsed by the Surinamese Ministry, largely based on EAF principles (e.g. including precautionary management of fishing effort). The Suriname Fisheries Act is currently under revision with support of FAO and will incorporate EAF elements. The proposed REBYC-III CLME+ project will address policy, regulatory and institutional capacity needs in relation to bycatch and discard management. More detail on the national policy, legal and regulatory frameworks in relation to fisheries is given in the Consistency with National Priorities section below.

#### Incentives to address unsustainable bycatch

Few specific incentives currently exist to encourage adoption of bycatch mitigation measures in any of the target countries. Certification of sustainable fisheries is not common or widespread in the CLME+ region. In Suriname, the trawl fishery for Atlantic seabob shrimp has been MSC certified since 2011, and recently a Fishery Improvement Programme (FIP) was launched for the gillnet and trawl fishery on groundfish (industry in collaboration with the NGO CeDePesca). Both of these are private sector initiatives. Other approaches include the exemption of Value Added Tax on TEDs, which are mandatory in the non-artisanal trawl fishery, in Trinidad and Tobago and this has been expanded to other BRDs, such as circle hooks and other devices proven to minimize bycatch. However, such measures are not widespread in the region. The proposed project will look to further develop and promote a suite of incentives to manage bycatch more sustainably.

*e. Private sector baseline in relation to bycatch mitigation and discard management*

Private sector engagement in addressing bycatch reduction and discard management in the CLME+ region was considered relatively little before the REBYC II LAC project. In Suriname, private sector engagement on addressing responsible fisheries was considered to have been quite strong in one specific segment of the fishing sector, namely the seabob shrimp trawl fleet (which is MSC certified). During the REBYC II LAC project, the level of engagement expanded to other segments of the fleet, notably the demersal fish trawl fleet and the artisanal gillnet fleet. Engagement primarily occurred through a National Working Group (NWG), specifically established for the project, which included representatives from the private sector, the government and NGOs. Towards the end of the REBYC II LAC project in Suriname this NWG was transformed into a formal national Working Group on Shrimp and Groundfish Fisheries, installed by the Minister of Agriculture, Animal Husbandry and Fisheries. The fisheries sector was also engaged in the testing of alternative fishing practices including bycatch reduction devices under REBYC II LAC project. In addition, REBYC-II LAC also contributed to the establishment of several local and one national overarching fisherfolk organisations, significantly improving the communication with and engagement of the artisanal (primarily gillnet) fleet. Similarly, in Trinidad and Tobago, the private fishing sector has been most engaged recently in measures to address bycatch and better manage discards through the REBYC II LAC project with a working group was formed with representatives from the Fisheries Division and members of the fishing community including the private fisheries sector to address BRD design and trials. In Guyana, there has been less private sector engagement but there is a commitment to move towards MSC certification for the seabob trawl industry.

In addition, in Grenada, FAO has worked under the Billfish project and CC4FISH project with the private sector on reducing by-catch in the pelagic long line fishery (use of circle hooks), and in Barbados an assessment (funded by FAO HQ) has been carried out engaging also private sector partners in developing the Pelagic fishery in Barbados to ensure greater economic, social and environmental benefits.

### **c. The proposed alternative scenario with a brief description of expected outcomes and components of the project**

The proposed project responds to the regional and national needs to manage bycatch and reduce discards and adverse effects of fishing on habitats in the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+). In doing so the project promotes more responsible fisheries and the conservation of marine living resources (particularly vulnerable species), while at the same time providing economic (particularly blue growth) opportunities for fishers as well as offering successful solutions to other LMEs. By addressing the barriers identified above and fostering local, national, regional and international linkages as well as public-private partnerships, the proposed project will create significant changes above the baseline scenario with respect to long-term solutions for environmentally, economically and socially sustainable utilization of marine resources. The project aims to strengthen integrated fisheries management that follows the EAF concept incorporating ecological, human well-being and governance and including increased stakeholder involvement. The goal 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. One goal of EAF is to reduce excessive levels of bycatch (i.e.,

killing of nontarget species or undersized individuals of the target species), because juvenile life stages and unmarketable species often play important roles in the ecosystem [41]. In this case, the project looks to eliminate unsustainable bycatch and discards while maintaining economic and social viability for fisheries stakeholders.

The proposed project provides an opportunity for strengthening of participatory and responsible fisheries and bycatch management within the ecologically, economically and socially important fisheries sector in the CLME+ region. It will help support the implementation of ecosystem-based fisheries management and more sustainable seafood value chains in Barbados, Guyana, Suriname, and Trinidad and Tobago, and advance national economic strategies, but has benefits for the wider region and beyond. In doing so, the project will help build further country ownership and commitment to the implementation of the CLME+ SAP at the national level. The project will promote capacity, collaboration and coordination between stakeholders on responsible fisheries and bycatch issues through seeking institutional, technical, and developmental solutions that are appropriate at the local, national, and sub-regional level. The involvement in the project of diverse actors from the fisherfolk, coastal communities and the industrial fisheries sector, Government fisheries agencies and other stakeholders from the public sector, private sector, civil society and academia is key to its successful implementation. The project will also strengthen institutional arrangements and collaboration through existing Regional Fisheries Bodies such as the WECAFC and the CRFM. It also offers an opportunity to build better resilience to climate change impacts, particularly for SSF and associated coastal communities through building capacity, empowerment and diversification of livelihood options, including direct benefits to women and marginalised groups.

The project's proposed policy reforms and capacity building efforts to support implementation of elements of EAF will also contribute to addressing IUU fishing and overfishing and incentivizing the sustainable management of marine capture fisheries. At the same time, the project will strengthen sustainable blue economy opportunities through supporting new opportunities and incentives to address bycatch and discards, including market mechanisms to support sustainable fisheries value chains, new bycatch mitigation related business opportunities, improving stewardship through co-management and other socio-economic initiatives among fisherfolk communities that will encourage greater adoption of more responsible fishing practices.

The proposed US\$ 5.7 million four-year project has been designed to deliver GEF Global Environmental Benefits and the overall project objective, and assist countries to address key trans-boundary environmental threats highlighted by the CLME+ SAP, including unsustainable fisheries. This project will enable participating countries to progress towards more sustainable seafood systems (GEF-7, Indicator 8) as well as benefiting biodiversity (GEF-7 Indicator 5 identified).

The causal logic of the project and how its immediate project outcomes lead to longer-term changes is described in the PIF and also summarized in the project's preliminary Theory of Change in Annex E (this will be further reviewed and revised during the PPG phase based on additional discussions with key stakeholders).

### **Objective of the REBYC-III CLME+ project**

*The project objective is to manage bycatch and reduce discards in the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) thereby promoting sustainable and responsible fisheries that provide economic opportunities while ensuring the conservation of marine living resources, supporting country implementation of the CLME+ SAP, with successful solutions for potential scale up to other LMEs, and the longer-term global environmental goal that the project seeks to contribute to is a healthy, resilient and productive fisheries that are well-governed and managed following an EAF approach in the CLME+ region.*

### **Target fisheries**

The project will target a range of fisheries in the four participating countries. Following analysis of the region's fisheries based on catch quantity and discard rates largely from official FAO statistics [1], the REBYC-III CLME+ project will focus on identifying best options and technologies to improve bycatch management, and the reduction of discards and other negative impacts of fishing gears on marine habitats (ALDFG and ghost fishing) in the potential target fisheries listed below.

- **Pelagic longline fishing** in Barbados and Suriname as well as **trolling lines** in Trinidad and Tobago, focused on the development and implementation of mitigation measures (e.g., novel stimuli, size of the bait and hook type) and strategies (e.g., fish only at deeper layers, limiting fishing period to certain times of day) to reduce both incidental bycatch of marine mammals, turtles, and sharks.
- **Trawl fishery targeting crustaceans** in Suriname, Guyana (e.g., seabob fishery), and Trinidad and Tobago. For Suriname, the focus will be on development and promotion of more selective trawl gears to mitigate bycatch of vulnerable species including skates, rays and sharks. For Guyana and Trinidad and Tobago, appropriate BRDs must be investigated to facilitate the release of juveniles captured in artisanal trawl fisheries.
- **Gillnets targeting demersal fish** in Guyana and Trinidad and Tobago, and **pelagic gillnets** in Barbados and Trinidad and Tobago, as well as **seines** in Trinidad and Tobago, with the development and implementation of mitigation measures (e.g., novel stimuli, acoustic deterrents) and strategies (e.g., limiting fishing period to night hours) to reduce incidental bycatch with a particular focus on sharks and turtles, and in the case of Trinidad and Tobago, marine turtles and mammals.

An assessment of bycatch issues across all fisheries in the four participating countries will be undertaken during the Project Preparation Grant (PPG) phase to identify and agree the most appropriate fisheries to target for the full project.

The key elements of the project – Components, outcomes and outputs - are presented below, along with the project's causal logic and how its immediate project outcomes lead to longer-term changes. The latter is summarized in a preliminary Theory of Change. The Theory of Change (ToC) sets out the project's causal logic and relationships between the project's outputs (goods and services delivered by the project) and immediate project outcomes (changes resulting from the use of project outputs by key stakeholders), medium and longer-term changes and states (changes not deliverable through efforts of the project alone), and the project's ultimate desired impact (fundamental, durable changes in environmental and social benefits). The ToC will be further reviewed and revised during the PPG phase as the project develops and key elements are further refined.

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## **Project Components and Outcomes**

The project will be implemented through four closely related components.

Component 1: Improving fishing practices to manage bycatch and reduce discards and the negative impacts of fishing gears in CLME+ fisheries, supporting countries implementation of CLME+ SAP priorities with a focus on the ecosystem approach to fisheries (Strategy 5).



Component 1 will address Barrier 1 by delivering more effective approaches and technologies to reduce bycatch and discards and other negative impacts in target CLME+ fisheries. It will achieve this through identifying and developing smart-gear modifications for trawl and non-trawl gears, including cutting edge pre-catch assessment technologies, with a focus on measures to reduce bycatch of ETP species, including measures to improve post-release survival of ETP species. In addition, it will develop innovative approaches to address Abandoned, Lost and Discarded Fishing Gear (ALDFG), which is being increasingly recognised as cause of bycatch (ghost fishing) and damage to marine benthic habitats but which to date has received relatively little attention in the CLME+ region. Component 1 has three immediate project outcomes.

***Outcome 1.1 - Approaches and tools to manage bycatch and reduce discards widely adopted in target trawl and non-trawl CLME+ fisheries***

The project will provide technical/technological solutions to reduce the adverse impacts of trawl and non-trawl fisheries on the marine environment, reducing both pre-harvest mortality and post-harvest discards. A number of short-, medium- or long-term bycatch mitigation strategies will be developed, tested and promoted, with a principal focus on improving selectivity of fishing gears to reduce unwanted catch, which will also benefit fishermen in terms of workload onboard e.g. more selective fishing reduces catch sorting time). The project will focus on quick adaptation and uptake of existing methods that have already been shown to be effective in other fisheries/region to reduce unwanted bycatch but will also develop and pilot new innovative smart-gear modifications and particularly innovations for non-trawl gears for more size- and species-selective fishing practices. This will include the development of technologies and fishing practices that enable pre-catch identification, thus allowing fishers to make informed decisions about whether to take the catch, minimizing the likelihood of unwanted bycatch. The fishing industry (including netmakers and gear technologists), and particularly fisherfolk communities for SSF, will be jointly involved in developing and piloting solutions that help achieve the stated fisheries-management or ecosystem objectives. As part of this, a feasibility assessment of the uptake of proposed bycatch approaches and technologies by both SSF and industrial fisheries will be undertaken, including identification of barriers (financial, capacity, socio-economic, cultural, etc) that would impede adoption along with measures to overcome these. Appropriate BRDs will also be investigated to facilitate the release of juveniles captured in artisanal trawl fisheries. The Outcome will be achieved through the following outputs:

Output 1.1.1: Development and piloting of smart-gear modifications for both trawl and non-trawl gears (such as gillnets and longlines) for more size- and species-selective fishing practices

Output 1.1.2: Innovative pre-catch technologies developed and tested to assess the composition of target schools of fish before they are harvested

Output 1.1.3: Capacity building for key stakeholders to adopt, use and monitor new bycatch and discards technologies and approaches delivered

It should also be noted that technologies that significantly reduce the negative impact of fishing operations on marine biodiversity are rapidly developing. Recent projects in the USA, Europe (such as Benthis and Discardless<sup>[4]</sup>), Australia and a number of other countries have developed a wide variety of practical, fisher-led solutions to bycatch that did not exist even 10 years ago, and the proposed project offers considerable potential for adapting emerging bycatch mitigation approaches or developing completely new ones.

***Outcome 1.2 - Effective mitigation measures to reduce adverse fisheries impacts on vulnerable, and Endangered, Threatened and Protected (ETP) species implemented in CLME+ fisheries***

This Outcome aims to reduce incidental bycatch of vulnerable and ETP species, including improving post-release survival of unwanted and incidental ETP species. This will include the examination of more selective fishing gears and strategies, such as novel stimuli, acoustic deterrents, fishing only at deeper layers, and limiting fishing periods to certain times of day to reduce ETP species interactions, and with procedures demonstrated and promoted and for the post-release survival of unwanted and incidental catches. For instance, possible specific approaches may include small sampling trawls with a purse seine for early catch identification and modifications to the purse seine to allow for releasing unwanted catches while live release is still viable. Project activities will also include training on safe handling and release practices for ETP species. This outcome will be achieved through the following two outputs:

Output 1.2.1: Strategies, approaches and technical measures to reduce opportunities for bycatch of vulnerable and ETP species developed and promoted

Output 1.2.2: Procedures and tools for improving post-release survival of unwanted and incidental ETP species developed, promoted and adopted in CLME+ fisheries, including capacity building to enable their use

### **Outcome 1.3 - Specific measures and technologies to address ALDFG and other adverse impacts of fishing gears on marine benthic habitats adopted**

Measures to address the problem of ALDFG can be broadly divided between measures to avoid creating ALDFG, to reduce the impact of ALDFG (e.g. ghost fishing) or to remove ALDFG from the environment. The project will enhance data collection for ALDFG and other adverse impacts of fishing gears on marine benthic habitats (e.g., identification and use of appropriate standards and quality of survey data sources) and will develop risk assessment and feasibility analysis of potential innovative technologies and incentive mechanisms to address losses caused by ghost fishing of ALDFG carried out for all fisheries in LME, including cost-benefit analysis of ALDFG removal (curative measures), as well as the piloting and promotion of preventative and/or mitigating measures to address ALDFG. Risk assessment analysis to assess likely impacts and prioritize high risk/sensitive areas for ALDFG recovery, will be undertaken for specific fisheries/pilot areas to provide accurate baseline information to decision-makers. These analyses will help support the development of effective local-level disposal solutions that consider aspects such as costs (including consideration of ALDFG removal and clean-up and habitat restoration costs) and identify potential barriers including the likelihood of stakeholder acceptability and enforcement of the measures.

Various solutions that have already been shown to reduce incidental bycatch in other areas, such as those supported through WWF's International Smart Gear Competition ([www.smartgear.org](http://www.smartgear.org)), will be trialled. These may include use of low-strength ropes that break under strain from marine mammals, magnets attached to longlines to repel sharks, passive pingers that retain effectiveness even when the gear is lost, as well as fishing gear-marking technologies, lost gear tracking and reporting systems (preventative measures) and smart-gear technologies to minimize the potential of ghost fishing and ways to better manage gear in the water (mitigating measures). Recycling schemes for recovered plastic fishing gear will also be considered. This outcome will be achieved through the following three outputs:

Output 1.3.1: Data and data collection frameworks on ALDFG and other adverse impacts of fishing gears on marine benthic habitats in target countries strengthened

Output 1.3.2: Risk assessment and feasibility analysis of potential technologies and incentive mechanisms to address ALDFG and ghost fishing carried out for target fisheries in CLME+, including cost-benefit analysis of ALDFG removal

Output 1.3.3: Mitigating measures to address ALDFG developed, piloted, and promoted in selected CLME+ fisheries

Output 1.3.4: Technological innovations for the mitigation of fishing impacts on benthic ecosystem developed and promoted

Component 2: Strengthening governance and management frameworks and enforcement measures to better manage bycatch and reduce discards in CLME+ fisheries supporting countries implementation of CLME+ SAP priorities particularly through improving regional governance arrangements for sustainable fisheries (Strategy 2) and the regional policy coordination mechanisms for governance of the marine environment (Strategy 3).

Component 2 will address Barrier 2 by addressing the need to strengthen governance and management frameworks and compliance to reduce bycatch and discards in target CLME+ fisheries. Specific guidance/advocacy materials on appropriate effective bycatch management and discard reduction measures will be formulated to inform decision-makers for mainstreaming into fisheries and marine conservation policy, regulatory and management processes. As part of this, the project will develop a system for the identification of bycatch and discards hot spots and develop maps identifying potentially unsuitable fishing areas

that can be integrated into existing (and planned) Marine Spatial Planning and Fisheries Management Planning processes. In order to support the enforcement of strengthened bycatch management and discard reduction measures the project will help build targeted capacity for monitoring, control and surveillance (MCS) measures including improving and standardizing data collection frameworks. Component 2 has three immediate project outcomes.

***Outcome 2.1: Improved policy and legal frameworks to manage bycatch and reduce discards and address ALDFG in target countries***

This Outcome aims to improve the enabling policy and regulatory environment with a focus on providing targeted guidance for decision-makers on effective bycatch mitigation and discard reduction measures to strengthen relevant national and regional fisheries policy, regulatory frameworks associated with target fisheries and protection of marine environment. The project will take into account the need to find a balance between 'top-down' (national government level) and bottom-up (local fisher community level) processes and look carefully at different governance/regulatory frameworks (e.g. changes in fishing gear and methods, input and output controls, quota management and transferability, and time/area restrictions to avoid bycatch hotspots and other vulnerable marine ecosystems, handling and release practices to increase the probability of post-release survival, cooperative/collaborative management), factors which encourage or discourage innovation and collaborative problem solving, monitoring and accountability. In terms of measures to reduce ALDFG (supporting Outcome 1.3), consideration will be given to strengthening policy and regulations aimed at restricting abandonment at sea to manage collateral effects, banning gear types with high ghost fishing efficiency, and promoting specific gear designs, gear marking, technology to track gear position to mitigate ghost fishing, prevent gear loss and establish adequate end-of-life fishing gear disposal and recycling options. This Outcome will be achieved through the following two outputs:

Output 2.1.1: Guidance on bycatch management, discard reduction and ALDFG mitigation measures formulated to update relevant fisheries policy and regulatory frameworks associated with target fisheries

Output 2.1.2: Recommendations on effective bycatch management, discards reduction and and ALDFG mitigation mainstreamed into relevant national, and regional policy processes

***Outcome 2.2: Integration of bycatch mitigation measures in marine fisheries management frameworks and Marine Spatial Planning in participating countries improved***

This outcome will address the systematic integration of measures to address unsustainable bycatch and discards into fisheries management operations targeting in particular marine spatial planning and fisheries management planning processes, strengthening both these processes at the same time. Bycatch and discards are a result of choices made at various stages during the fishing process, and understanding the importance of the different factors influencing the species discard composition is an important step in designing management programs which maximize landings and minimize discards, especially for mixed-species industrial fisheries [42]. Bycatch problems can be ameliorated through ocean zoning that prohibits use of non-selective or destructive gear in critical areas, as well as through the development and deployment of more selective and less damaging fishing technologies.

The project will undertake a study to identify and quantify factors that influence the species discards composition of industrial fisheries by means of a spatial-temporal explicit multivariate approach with a focus on potentially vulnerable species due to their life history traits. Various relevant criteria, including economic, vessel characteristics, spatial, temporal and environmental aspects will be used to create a framework for a comprehensive understanding of the spatial-temporal variation of bycatch and discards in the target fisheries that will help optimize the total amount of habitat protection needed for minimizing bycatch and discards of key sensitive species. This approach should also help fishers reduce costs by avoiding potentially unsuitable fishing areas (i.e., areas with low catches and high discards).

More generally, a set of guidelines will be produced to provide concepts, principles and practical measures to address bycatch when considering development of Marine Spatial Plans and Fisheries Management Plans. Conversely, conservation area protection for vulnerable and ETP species can also be a measure in marine fisheries management frameworks. An example of such an approach can be seen in Eckert [43]. On-going initiatives in the participating countries and target fisheries, e.g. the FAO-GEF BE-CLME+ project, that have a focus on these processes will be targeted by the project to support the conservation of target and non-target species. The feasibility of a multi-criteria spatial approach with consideration of catch and discard information that provides fishing vessels with maps of bycatch and vulnerable species of hot-spots to avoid will be investigated. Attempts will be made to develop near-real time maps that are updated at least seasonally. These will all help to improve fisheries resource exploitation and reduce costs by avoiding potentially unsuitable fishing areas (i.e., areas with low commercial catches and high discards). This type of management will be particularly amenable for SSF and bottom-up approaches such as co-management or self-governance.

Output 2.2.1: Spatial-temporal study of environmental, social and economic drivers of species bycatch and discards composition

Output 2.2.2: Maps identifying key bycatch and discard areas designed, developed and deployed in target fisheries

***Outcome 2.3: Monitoring, control, compliance and enforcement frameworks governing bycatch management and discards reduction in fishing fleets within CLME+ fisheries strengthened***

The effectiveness of any policy, regulation or management directive depends to a large extent on its enforcement. According to the CLME+ SAP, current enforcement systems remain inefficient, expensive, complex, and ineffectual. Responding to this, this Outcome will support activities to improve the Monitoring Control and Surveillance (MCS) systems in targeted CLME+ fisheries, in order to reduce unsustainable bycatch and discards practices. Activities under this outcome will also improve mechanisms for better cooperation among authorities that are responsible for MCS. The additional MCS activities will also support efforts to fight Illegal, Unreported and Unregulated (IUU) fishing through improved data collection and monitoring. The project will develop (through pilots and case studies) and promote the adoption of new and cost-effective technology and tools for control, monitoring, tracking/ surveillance (remote, real-time) and reporting of compliance on bycatch mitigation, tailored according to country needs and circumstances. For example, this may include innovative smart forms for improved monitoring and reporting of bycatch and discards. Further options will be investigated during PPG phase. It will also include capacity building for key stakeholders to use the new technologies and approaches, such as providing training for inspectors. Project activities will also help support efforts to implement national Port State Measures Agreement (PSMA) actions, by providing the means to conduct risk assessments of vessels so that resources (inspectors) can be allocated to vessels seen as higher risk, for example those vessels fishing within identified bycatch hotspots (identified through Output 2.2.2). Improved inspections will give better quality data on catches of bycatch species to address scientific and management information needs. This outcome will be achieved through the following two outputs:

Output 2.3.1: Innovative, cost-effective technology and tools for controlling, tracking and monitoring of compliance with bycatch regulations developed and widely adopted within target fisheries

Output 2.3.2: Capacity building for key stakeholders to use adopted technologies and tools to control and monitor bycatch and discards delivered

Given the capacity in the participating countries, simple and cost effective MCS interventions will be a key focus for the project.

Component 3: : Encouraging behavioural change for adoption of effective bycatch mitigation and discard reduction measures in target CLME+ fisheries, supporting the implementation of the CLME+ SAP particularly through actions to encourage responsible fisheries practices (Strategy 2)

Component 3 will address Barrier 3 and recognises the need to encourage behavioural change for adoption of effective bycatch mitigation and discard measures and wider uptake of more responsible fisheries practices in target CLME+ fisheries. This will be achieved through a range of project activities built on initial assessments to better understand the use of bycatch and discards and their importance to fisher communities (for livelihoods, income, food security and nutrition, and how they vary between men and women and SSF and industrial fisheries), as well as the costs and benefits (including financial) of the adoption and use of bycatch mitigation and discard measures. This component is expected to include a range of project activities such as support for new value chains for landed discards (particularly targeted at women) and co-management as well as exploration of financial and other incentives to encourage behavioural change. The project recognizes the dependence of target coastal communities on fisheries and bycatch for local livelihoods and food security, and the potential adverse impacts of reductions in the quantity of bycatch on these communities. The project seeks to minimize these impacts through incorporating the principles of EAF and the SSF Guidelines while at the same time addressing food security and poverty eradication through livelihoods enhancement and diversification. Component 3 has one immediate project outcome.

**Outcome 3.1: Incentives, strategies and measures to support behavioural change of stakeholders towards more responsible fishing practices developed and widely available in target CLME+ fisheries**

The project will seek to incentivize individual fishers, fishing communities and fishing companies, including processors and distributors, to adopt bycatch mitigation strategies and measures in both SSF and industrial fisheries. Activities will be consistent with the aims of the CLME+ SAP and other regional directives (e.g., seabob Fishery Management Plan in Suriname and Guyana), but also appropriate and understandable to the wider stakeholder community to engage their support.

Project activities will include an initial assessment of the use of bycatch and discards and fishers' perceptions on bycatch and responsible fisheries, value chain analysis, and socio-economic cost-benefit analyses to better understand the lives, habits and livelihoods of the target fishing communities and the extent of reliance on these fisheries and associated bycatch and discards. In cases where alternative fishing methods or livelihood strategies can be employed to reduce bycatch especially of vulnerable and ETP species, realistic alternatives would be identified, developed and made available to affected fishers. This will be followed by an assessment of attitudes and likely barriers to the adoption of any bycatch mitigation technologies and other measures to reduce unnecessary fishing mortality. This will include examining whether there would be any financial costs for SSF and the potential impact on livelihoods, food security and nutrition, and whether such measures would create a barrier to access the resource on which SSF livelihood depend. Possible alternative livelihood options will be identified and promoted to the key fishery industry stakeholders, including their financiers (e.g. investors, banks). Strong working relationships will be established with a range of stakeholders to build consensus on effective mitigation measures and to promote behavioural change to reduce unwanted and incidental bycatch mortality. Particular attention will be paid to developing opportunities for women and disadvantaged groups such as unemployed youth.

For SSF communities, a range of support and opportunities will be examined and developed as appropriate, which may include:

- i. Developing new businesses ventures such as manufacture of bycatch mitigation devices, and possible use of under-utilised species, e.g. catfish and flatfish in Trinidad and Tobago, with capacity building activities to support small business enterprise development, including new value chain and market development (with potential job creation in processing, packaging, marketing, distribution and sale of fish products), and training in business skills, etc;
- ii. Facilitating linkage to other alternative livelihood/income generating activities (diversifying sources of income to build community resilience) such as local agricultural and rural development initiatives and programmes, as well as marine conservation schemes and improving links with responsible tourism such as including fishers in the promotion of ETP species for ecotourism;

- iii. Linkage with rural and agriculture banks and financial institutions to promote greater investment in ventures based on more responsible fishing practices and technologies
- iv. Capacity building to strengthen co-management of local fishers, targeted at fisher community groups (e.g. identification and support for community level 'champions');
- v. Identifying, developing and promoting new or strengthened policies to support investments in SSF and bycatch mitigation measures, such as tax breaks for responsible fisheries.

In terms of engagement with the industrial fisheries sector, including fish processors, marketers, retailers and the institutions financing fisheries, project activities will include efforts to develop stronger public-private initiatives, promoting responsible fisheries as part of corporate Environmental and Social Governance priorities, development of guidance on best practice responsible fisheries, and facilitating access to improved knowledge on commercial solutions for addressing bycatch. Financial institutions providing funding for the fisheries sector (both to small- and large-scale fisheries) will be engaged by the project to encourage their financing of sustainable fisheries ventures and to highlight the risks from a 'business as usual' model.

In addition to helping to support fisherfolk to adopt more responsible fisheries practices (specifically unwanted and incidental bycatch mitigation) to reduce discards and ALDFG, these project activities will support livelihood diversification and local and national blue economy growth objectives in the participating countries. In some circumstances where ALDFG gear is perceived to be a particular problem, positive incentives through reward schemes for disposal of old and unwanted gears in appropriate facilities will be developed. Together, the above efforts will also help support the post-Covid 19 recovery process in fishing communities in the participating countries.

Given the small-scale nature of most fisheries in the participating countries, project activities under this Outcome will be guided by the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) [8]. Both fisherfolk communities and industrial fisheries will be involved in the project's efforts to design, develop and test new bycatch mitigation technologies and approaches from the very beginning of the initial design period. Based on the lessons learned during the REBYC-II LAC, the project will follow a participatory approach in how to deal with the bycatch mitigation, allowing for the use of the community stakeholder knowledge in testing and modifying proposed devices, and identifying the best strategy for utilization of the sustainable portion the bycatch. Various approaches to ensure stakeholders are fully involved will be considered, including the possibility of hiring of fishing industry liaisons to assist in the mobilization of the fishers in the community (to be examined during the PPG phase). This outcome will be delivered through the following three outputs:

Output 3.1.1: Socio-economic (including cost-benefit) analyses associated with adoption of mitigation technologies and measures to manage bycatch and reduce discards and the adverse effects of fishing gears undertaken and promoted, with results communicated to key fishery industry stakeholders in target CLME+ fisheries

Output 3.1.2: Strategies, measures and opportunities to encourage fishers and markets to reduce unwanted bycatch identified, developed and piloted

Output 3.1.3: Capacity building for fisher communities to engage with new opportunities associated with addressing bycatch and ALDFG delivered

Component 4: Knowledge Management and lesson learning, supporting implementation of the CLME+SAP at the regional level (Strategy 3).

Component 4 will address Barrier 4 and focuses on improving knowledge and knowledge management to enable more informed decisions on bycatch management and discard reduction, drawing upon key project results and lesson learned from Components 1-3 as well as other parallel initiatives.

Component 4 will include a road map for scaling up project results. It also includes project management activities related to adaptive management, based on monitoring, evaluation, lesson learning and project oversight. Component 4 has two immediate project outcomes.

**Outcome 4.1: Knowledge of measures, options and incentives for addressing bycatch mitigation and discards to improve sustainability of fisheries increased among key stakeholder groups (individual fishers, fishing industry and fish-buying public)**

This outcome seeks to improve decision-making in relation to addressing unsustainable bycatch by building the knowledge base among relevant stakeholders on lessons and best practices on effective bycatch management and discards reduction technologies and approaches. The project seeks to identify and disseminate its experiences, achievements, lessons learnt and best practices to a range of stakeholders in the CLME+ region and beyond to promote greater awareness, understanding and acceptance of solutions for addressing bycatch and discards, and make knowledge of these more widely and easily available. This will be guided by a Knowledge Management, Awareness-raising and Communication Strategy and Action Plan (including digital media strategy), which will be developed early in project implementation. It will set out key messages of the project, identify the most effective means of dissemination for the target audience (social media, project website, conferences, publications and peer-reviewed articles, etc), roles and responsibilities, and budgets. Special attention will be given to disseminating lessons learned and recommendations for successful implementation of effective bycatch management and discard reduction measures in similar communities and fisheries to those targeted by the project, with the identification of individual 'champions' and institutions to promote project results. Addressing ALDFG, such as preventing fishing gear loss, is an added goal of the project but there is little awareness on this issue. Consequently, this will be a specific focus for activities under this component. In addition, a roadmap for scaling up project successes, lessons and best practices to other tropical LME fisheries will be developed and promoted to relevant fisheries stakeholders.

At the global level, the findings and recommendations of the project will be shared through IW:LEARN and IW:LME and other relevant global knowledge platforms and with the FAO Committee on Fisheries (COFI), which will provide opportunities to promote project experiences and lessons learned on bycatch mitigation globally. Through the Regional Secretariats Network (RSN) the project will share experiences and team up with all RFBs. Promotion of results to environmental NGOs will take place largely at the global level through the Global Ghost Gear Initiative (GGGI), while scientific community ties will be secured through the ICES-FAO Working Group on Fishing Technology and Fish Behaviour. This outcome will be delivered through three outputs.

Output 4.1.1: Knowledge Management, awareness-raising and communication strategy and action plan to promote greater understanding of bycatch mitigation practices developed and implemented

Output 4.1.2: Project lessons learned and recommendations for successful implementation of effective bycatch management, discard and ALDFG mitigation measures identified and disseminated

Output 4.1.3: Roadmap for scaling successful solutions for better management of bycatch and reduction of discards in CLME+ fisheries and beyond developed and promoted by relevant stakeholders

**Outcome 4.2: Effective project implementation based on adaptive management**

This outcome aims to facilitate the effective and efficient implementation of the project by establishing appropriate management procedures, including coordination between partners and adaptive management based on a high-quality M&E framework. It will be delivered through two outputs.

Output 4.2.1: A gender-sensitive project Monitoring and Evaluation (M&E) system designed and operational

Output 4.2.2: Mid-term Review and Final Evaluation carried out

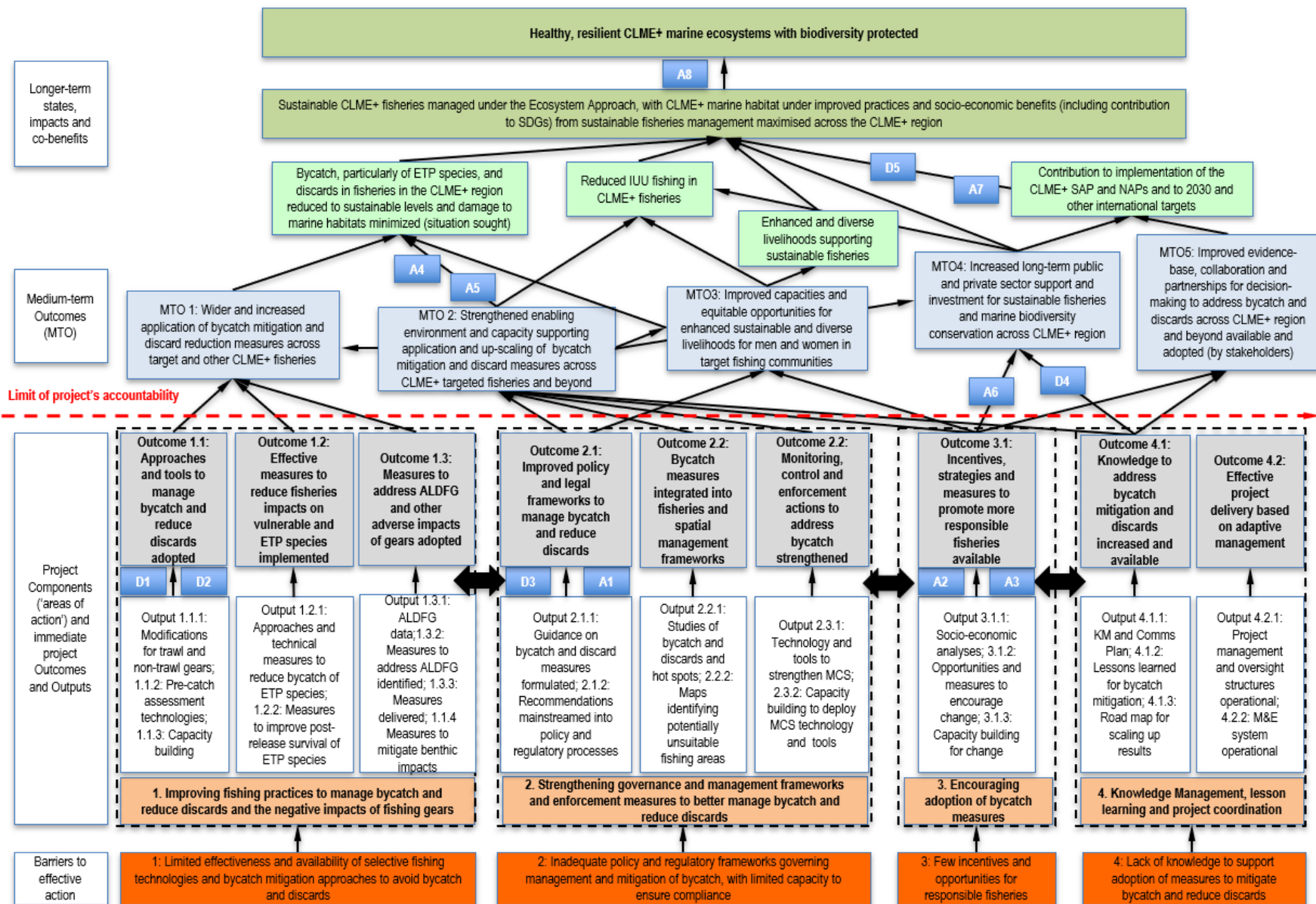
***Linkages, assumptions, drivers and longer-term outcomes and impacts of the project***

Several of the above Outcomes both within and between components interlink and work together or are dependent on the progress and results of others (as depicted by the network of arrows in Figure 2, the the graphic representation of the Theory of Change). For instance, identification of potential incentives under Outcome 3.1 will inform the development of policy guidance on bycatch measures under Outcome 2.1, and the uptake of bycatch measures under Outcomes 1.1 – 1.2 will be facilitated by successful delivery of project measures to integrate bycatch mitigation recommendations into policy and legal frameworks (Outcome 2.1) and specific incentives (such as tax incentives) identified under Outcome 3.1.

**Figure 2. Preliminary Theory of Change for the proposed REBYC-III CLME+ project**

(A = Assumption; D = Driver)





In addition, the achievement of the project outcomes and progress towards the project objective and longer-term impacts depends on a number of wider assumptions<sup>[5]</sup> being met. Assumptions that directly relate to achievement of the project's immediate outcomes are that:

A1 – Government fisheries agencies, fishing communities and private sector fishery groups are willing to engage in co-management of fisheries and marine resources,

A2 – Social and cultural barriers do not prevent women from effectively participating in the sustainable management of fisheries

A3 – The private sector is willing (or can be encouraged) to invest in activities to address bycatch and discards and continues to have a supporting enabling environment

In addition, operation of the project itself rests on several preconditions including that: (i) the project can secure the external expertise and technical assistance required for a full and timely implementation of project activities (needed for delivery of all Components); (ii) there is continued commitment of the participating institutions and actors from national to community level during the project lifetime, manifest through their continued staff involvement and co-financing contributions; (iii) there are no major political changes in participating countries that would prevent the project's institutional framework from continuing to operate and deliver project results; and (iv) the Covid-19 pandemic does not continue to have significant negative impacts on the ability of key stakeholders to engage with the project and deliver results, or adaptive management measures are not able to mitigate these impacts. In addition, it is assumed that fishing communities will grasp the opportunities offered by sustainable co-management, and are willing to invest the required time and energy (exact opportunities to be defined during the PPG phase) to adopt bycatch and discards measures (these will be encouraged through activities under Component 3).

There are also a number of impact drivers<sup>[6]</sup> that may make progress along the causal chain more likely:

D1 – The fishing industry (particularly the industrial fisheries subsector) is keen to reduce operational (ultimately financial) costs and losses owing to unwanted and incidental bycatch and discards

D2 - Obligations under international/regional policy and legal frameworks, such as the Landing Obligations under the EU Common Fisheries Policy (CFP) and the US Marine Mammal Protection Act – Fish and Fish Product Import Provisions, which are encouraging more responsible fishing practices in order to maintain fish exports

D3 – Increased awareness among government decision and policy makers about the value of marine ecosystems and their role in climate change mitigation and sustainable development, the opportunities offered by the blue economy and need to manage coastal and marine resources sustainably, together with increased promotion of the value of marine ecosystems by number of global level initiatives such as the High-Level Panel on Sustainable Ocean Economy

If the project outcome-level assumptions and impact drivers (A1-3 and D1-3) are met, then delivery of the four project Components will result in further gains along the causal pathway to achieving improved management of bycatch and a reduction in discards contributing to more responsible fisheries. Together the four Components and their 9 Outcomes combine to affect a number of medium-term outcomes (MTO). The outcomes associated with Components 2 and 3 combine to strengthen the enabling environment to support application and up-scaling of bycatch mitigation and discard measures across CLME+ targeted fisheries and beyond (MTO2), which combined with measures under Component 1 should lead to wider and increased application of bycatch mitigation and discard reduction measures across target and other CLME+ fisheries (MTO1). Similarly, the strengthened enabling environment (MTO2) together with improved value chains and incentives delivered from Component 3, should help improve capacities and equitable opportunities for enhanced sustainable and diverse livelihoods for men and women in target fishing communities (MTO3) and increase long-term public and private sector support and investment for sustainable fisheries and marine biodiversity conservation across CLME+ region (MTO4). Together these three medium-term outcomes supported by other non REBYC-III CLME+ project interventions and resources will lead to the eventual reduction of bycatch, particularly of ETP species, and discards in the fisheries of the CLME+ region to sustainable levels with reduced levels of damage to marine habitats, whilst also contributing to reducing IUU fishing in the CLME+ region (especially through Component 2 related activities), and enhanced and diverse livelihoods supporting sustainable fisheries. Apart from gains in specific countries and fisheries, the delivery of project outcomes would also improve the evidence base for more effective decision-making, collaboration and

partnerships for addressing bycatch and discards across CLME+ region and beyond (MTO5), contributing, for instance, to implementation of the CLME+ SAP and to the 2030 and other international targets. Achievement of these longer-term outcomes, which is beyond the immediate accountability of the project is subject to further assumptions (A4-A8) and two additional divers (D4-D5), namely that:

- A4. There is sufficient and continued commitment (political support, staff, resources, etc) by national government institutions responsible for fisheries policy, legislation and management for actions to implement EAF, including the desire to better manage bycatch and reduce discards and other associated damage through ALDFG
- A5. Perverse subsidies can be eliminated and do not continue to reward unsustainable fishing and encourage overcapacity of fishing fleets
- A6. Domestic and international markets for bycatch and discard value chain products can be sufficiently developed and maintained to provide long-term secure sources of income for local fishing communities, particularly for the benefit of women (so low likelihood of an economic crash)
- A7. Countries continue to see the value of, and commit resources for, regional cooperation and collaboration to address bycatch and discards and promote EAF
- A8. Future climate change impacts do not irreversibly affect the structure and function of the CLME+ marine and coastal ecosystems and habitats
- D4. Increasing global demand for premium certified sustainable fish products and/or those which meet national legislation of import countries that require no/mitigated bycatch (especially ETP species such as marine mammals)
- D5. Regional initiatives and forums, notably the CLME+ SAP, promoting regional visions, building capacity and facilitating increased inward investment for sustainable management of marine resources, along with international legal obligations, such as national commitments to the CLME+ SAP, SDGs, UNFCCC and CBD

Together with additional external inputs (e.g. other national and donor-funded initiatives), these would be expected to lead to the long-term 'situation sought' of 'Bycatch, particularly of ETP species, and discards in fisheries in the CLME+ region managed to sustainable levels and adverse impacts of fishing on marine habitats minimized, as well as contributing to the GEF IW Objective 1 to strengthen national Blue Economy opportunities to reduce threats to marine and coastal waters.

#### **d. Alignment with GEF focal area and/or Impact Program strategies**

The proposed project is aligned with GEF-7 International Waters objectives, principally through reducing key threats to marine and coastal waters (from incidental and unsustainable fisheries bycatch and discards and marine plastics pollution from ALDFG) and helping to sustain healthy coastal and marine ecosystems that continue to deliver vital ecosystem services through catalysing implementation of EAF measures. The project's proposed policy reforms and capacity building efforts to support implementation of aspects of EAF will also contribute to addressing IUU fishing and overfishing and incentivize the management for sustainable marine capture fisheries. At the same time, the project will strengthen sustainable blue economy opportunities through supporting new initiatives and incentives to address bycatch, including market mechanisms to support sustainable fisheries value chains, new bycatch mitigation related business opportunities, improving stewardship through co-management, and other socio-economic initiatives among fisherfolk communities that will encourage greater adoption of more responsible fishing practices. Specifically, the project aligns with two areas of strategic action under *IW Strategic Objective 1 (Strengthening Blue Economy Opportunities)*, namely *IW-1 Sustaining healthy coastal and marine ecosystems* and *IW-2 Catalyzing sustainable fisheries management*, but also contributes to *IW-3 Addressing pollution reduction of both nutrients and marine plastics*.

Although not funded from national GEF Biodiversity Focal Area contributions, the project will also contribute to GEF-7 *BD 1-1 Mainstream biodiversity across sectors as well as landscapes and seascapes*, and *BD 2 Address direct drivers to protect habitats and species*. It will largely achieve this through strengthening national fisheries policies and regulatory frameworks to address incidental bycatch (especially ETP species), ALDFG, reducing the threat of unsustainable capture of non-target species, and the negative impacts of fisheries on marine and coastal ecosystems, such as coral reefs. In addition, the project will indirectly support sustainable fisheries management measures addressing bycatch management within marine protected areas (MPAs) in the target countries. Specific MPAs to be targeted by the project will be determined during the project development (PPG) phase.

The proposed project is consistent with, and supports, several other GEF-funded interventions, including the *GEF-7 'BE-CLME+' project*, the *GEF-6 Coastal Fisheries Initiative (CFI)* and the proposed *EAF4SG* project, where there are complementary activities addressing adoption and implementation of various aspects of EAF, including critical capacity development for responsible fisheries management and socio-economic (blue economy) support, improved cross-sectoral and regional collaboration, and promoting stewardship for sustainable fisheries management.

A key GEF priority within the IW Focal Area is to invest in projects that support SAP implementation. The REBYC III CLME+ project directly supports many Strategies and associated Actions of the CLME+ SAP. These are listed in Box 3 above. The project also contributes to IW:LEARN (detailed in the Knowledge Management section of the PIF) which is a major resource platform for supporting the GEF IW focal area and delivery of LME SAPs.

#### **e. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing**

An incremental GEF investment is essential to continue to advance the adoption and implementation of EAF in Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) fisheries. The central problem the project seeks to address is the high levels of unsustainable, incidental, unwanted bycatch and discards in fisheries in Barbados, Guyana, Suriname and Trinidad and Tobago. Current fishing practices in these countries continue to have a significant negative impact on non-target species (ETP species are of particular concern) and, depending on the gear type, adverse knock-on wider impacts on CLME+ marine habitats and ecosystem. Current fishing practices are also wasteful in terms of fishing efficiency and operations.

The GEF investment builds on a series of previous GEF investments at the national and regional levels aimed at supporting more sustainable fisheries in CLME+ countries, and investments in other parts of the world that have targeted bycatch reduction (outlined in baseline section above). The proposed project particularly builds on the CLME+ SAP and associated National Action Plans, and a series of former REBYC projects (REBYC, REBYC-II CTI and REBYC-II LAC) undertaken over the last decade. However, whilst these previous efforts have shown some successes they have been limited and/or successes remain to be scaled up. The recently completed FAO-GEF REBYC-II LAC project, for instance, focused on bottom trawl fisheries, but other gear types, e.g. gill nets, longlines, seine nets, traps and pots, also generate high bycatch and discards as well as negative impacts on other marine biodiversity and habitats (and so impede moves to sustainable fisheries). Indeed, all these gear types and their associated fisheries in the CLME+ region require similar attention and investments. In addition, non-target species mortality and marine habitat damage associated with ALDFG remains largely unaddressed in the CLME+ region.

Despite baseline efforts described above, four main barriers act against the achievement of more responsible, sustainable fisheries: (i) limited effectiveness and availability of selective fishing technologies and bycatch mitigation approaches to avoid bycatch and discards and capacity to employ it; (ii) inadequate policy and regulatory frameworks governing management and mitigation of bycatch, with limited capacity to ensure compliance; (iii) limited incentives and opportunities to encourage and support responsible fisheries; and (iv) limited knowledge to support adoption of measures to mitigate bycatch and reduce discards.

The GEF-funded alternative will address the above constraints and barriers through concerted action with national and regional elements, focusing on selected fisheries and pilot cases in four countries. The project seeks to better manage bycatch and reduce discards in the CLME+ region thereby helping participating countries to implement an ecosystem-based approach to fisheries management, and at the same time improving the conservation of marine living resources. The project will also deliver development, social and economic co-benefits through diversified livelihood opportunities, reduced vulnerability to economic and environmental shocks, improved food and income security for fisherfolk communities, and greater involvement of communities in fisheries management decision-making (particularly for women), based on more responsible fishing practices.

Building on the baseline, the project will lead to improved bycatch management and a reduction in discards in fisheries in the CLME+ region, including a drop in the catch of vulnerable and ETP species, reduced ALDFG and ghost fishing, and lower impacts of target fisheries on other coastal marine biodiversity and vulnerable benthic habitats. These will be achieved through a wider transition to more sustainable fishing operations and gears, including increased use of effective bycatch reduction technologies and devices and, for ALDFG, through implementation of fishing gear marking and tracking measures. Enabling policy, regulatory and fisheries management frameworks will be strengthened through the project, with added value project contributions to support fisheries management planning and marine spatial planning processes not currently available (including support for management plans that incorporate bycatch and other management measures such as area and seasonal closures, within an EAF framework). The project will also improve the knowledge base and exchange of lessons on effective bycatch management to support EAF, and raising awareness and strengthening knowledge networks such as e-learning hubs, and building the capacity for the use of innovative ICT tools, will support more effective decision-making on sustainable fisheries management at government, private sector and fisher communities' levels. New technologies for remote tracking, near real-time monitoring and reporting, control and surveillance will be explored and deployed as appropriate, helping to strengthen MCS capacity which remains weak in the region. Incentives to encourage greater public and private investments in, and uptake of, more selective and innovative fishing technologies will be identified, developed and promoted, aimed at both small-scale fisheries and industrial fisheries. Measures to strengthen stewardship through co-management of fishing resources and direct support to local fisherfolk communities will be supported, including measures to improve access to financial services (credit, insurance) for small scale fisheries and linkage between fisherfolk organizations and markets for responsibly caught fish. The project will support identification and development of new bycatch/discards value chains (e.g. innovative processing techniques for discard species) while encouraging greater adoption of more responsible fishing practices and developing stakeholders' capacity to apply EAF. As a result, the GEF incremental investment will strengthen sustainable blue economy opportunities, contribute to addressing climate change resilience, supporting decent work opportunities, encouraging technical and financial innovation, as well as supporting national post-Covid recovery efforts in the participating countries, support which under the baseline would not have been available. An additional benefit is likely to be reduced energy use and greenhouse gas (GHG) emissions in target fishing fleets through the adoption of new (vessel, gear and on-board processing) technologies. Overall then, the GEF investment will create significant incremental benefit above the 'non-project' option with respect to environmental goods and services, their linkage with sustainable livelihoods, and with the broader well-being of the communities in the countries involved. Indeed, for a relatively small investment, the project will result in significant positive impacts, including over 5,299,500 hectares of globally significant marine habitat under improved management and an estimated 37,000 tons of globally over-exploited marine fisheries moved to more sustainable levels, as well as contributing to addressing Illegal, Unreported and Unregulated (IUU) fishing concerns.

The GEF funds will leverage a range of commitments, inputs and investments from FAO, WECAFC and the participating countries, as well as from the fisheries sector including private sector (e.g. commercial vessel operators and financiers), fisherfolk communities and national and regional fisheries associations, and civil societies, and will connect with other areas of major policy implementation and development investment.

The project's total co-financing is US\$ 24,565,884 comprised of both in-kind and cash contributions from project partners. The four countries collectively through their liaison ministries for the project are providing a combined US\$ 9,815,884 of in-kind and cash co-financing in the form of staff time, use of equipment, office space, etc. The WECAFC Secretariat is providing a co-financing contribution of US\$ 1,750,000 (cash and in-kind combined). The GEF

Implementing Agency FAO is also providing cash and in-kind contributions totaling US\$ 6,000,000. It is expected that the engagement of the private sector, Academic Institutions, and International Donors will provide additional co-financing contribution of US\$ 8,000,000 (cash and in-kind combined). The project's proposed multi-stakeholder coordinated approach will provide the necessary base for making coherent and viable investments, and consequently the cost-effectiveness of the project is expected to be high.

In the 'business as usual' scenario, unsustainable levels of bycatch will continue to occur in those fisheries which have not addressed mitigation, with continued loss and degradation of marine biodiversity and habitats. In addition, full adoption of ecosystem based fisheries management will be stalled or only undertaken on an *ad hoc* basis. Given most fish stocks are shared between several countries in the CLME+ region (particularly for shrimp trawl fisheries between Guyana and Suriname) and involve multiple stakeholders, coordination and support on advancing EAF is essential. Whilst under the baseline there is likely to be increasing awareness of the threats to fishery sustainability caused by the region's fisheries and unmanaged bycatch, without GEF involvement it will take longer to address these threats because of limited access to technical and financial assistance and capacity development. Under the baseline, the ability to effectively address bycatch will be particularly limited by the inadequate capacity of fisherfolk organizations and institutions to engage effectively in EAF management, largely because of a lack of financing for their participation. Furthermore, financing opportunities are likely to be uncoordinated, failing to take advantage of economies of scale and experiences from other CLME+ nations and other countries in the IW community. Investments by national governments in fisheries would be directed to largely maintaining core functions with *ad hoc* non-strategic projects used to fill urgent gaps which would likely fail to address the overarching and long-term needs of the fisheries and the fisherfolk who depend on them for their livelihoods. At the same time, private sector investment will continue to view responsible fisheries approaches as costly and with limited benefits. Also, given the recent conclusion of the REBYC-II LAC project and other sustainable fisheries initiatives in the region, there is a potential danger of a loss of critical institutional knowledge, expertise and opportunities to leverage information and project results, and importantly, stalling of political momentum for sub-regional cooperation towards and improving the implementation of EAF in CLME+ countries.

In the absence of the GEF incremental investment, this baseline is particularly likely following the Covid-19 pandemic, which has had significant economic and societal impacts on CLME+ countries, and when governments are likely to focus their attention on other immediate human development challenges over the next few years, and private sector investors will remain cautious due to the uncertainties over Covid recovery.

#### **f. Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)**

The project will contribute to several GEF-7 Core indicators targets, principally those related to the GEF International Waters Focal Area. These include: **GEF Core indicator 8 – Globally over-exploited marine fisheries moved to more sustainable levels** through reducing the levels of bycatch and discards with a conservative estimate of roughly 37,000 metric tonnes of over-exploited fisheries moving towards more sustainable levels; **GEF Core indicator 5 - Area of marine habitat under improved practices** (excluding protected areas) covering approximately 5,299,500 ha through supporting the implementation of fisheries management and marine biodiversity conservation plans within the EEZs of the target countries that aim to deliver more sustainable fisheries (including supporting the National Action Plans for the CLME+ SAP, see fit with national and regional priorities section below); and **GEF Core indicator 7 - Number of shared water ecosystems** (fresh or marine) under new or improved cooperative management, contributing to two LMEs – the combined CLME+ system – through implementation of some of the key aims of the CLME+ Strategic Action Programme relating to sustainable fisheries including strengthened EAF and fisheries co-management (particularly sub strategies 5a and 5b). Depending on the final decision on the locations for the project activities (to be determined during the full project's development phase), the project may also contribute to **GEF Core indicator 2 - Marine protected areas** created or under improved management for conservation and sustainable use, as there are a number of MPAs within the two LME areas of the four target countries where fisheries occur (area be determined during the project development phase). Finally, the project will also yield co-benefits under **GEF Core indicator 11: Number of direct**

**beneficiaries disaggregated by gender**, with an initial goal to generate direct benefits to 6,660 men and 2,670 women across the four participating countries. This includes the important part-time and seasonal labour forces in the fisheries, and those involved in proposed value chain development for bycatch and discards. More refined GEF Core Indicator targets values will be determined during the full project development phase.

The project will help protect habitat and reduce destructive practices through gear innovations and piloting of approaches to reduce ALDFG (thereby contributing to a reduction of marine plastic pollution), as well as helping to restore and protect populations of vulnerable marine species through reducing levels of unwanted bycatch of endangered, threatened and protected (ETP) species, such as marine turtles and marine mammals. Consequently, as noted above, the project will contribute to GEF Biodiversity Focal Area priorities. In addition, climate change issues will be addressed through the development of improved and more efficient vessel and selective gear technologies, which will potentially reduce Green House Gas emissions.

The proposed project will address SDG Goal 14 – Life below Water - which calls for specific actions in fisheries *inter alia*: effectively regulate harvesting including destructive fishing practices; address overfishing and illegal fishing; increase economic benefits from sustainable management of fisheries and aquaculture; provide access for small-scale fisherfolk to resources and markets and implement UN Convention on the Law of the Sea (UNCLOS) provisions. The project will particularly address targets 14.2 (Protect and restore ecosystems), 14.4 (Sustainable fishing), 14.7 (Increase economic benefits from sustainable use of marine resources), and 14.a (Increase scientific knowledge, research and technology for ocean health) and 14.b. (Support small-scale fishers), as well as contributing to target 4.1 (reduce marine pollution) through activities to address ALDFG.

The project is also relevant to the UN's Decade of Ocean Science (2021-2030), specifically the priority area of 'A Clean Ocean' where the sources of pollution are identified and removed. This project focuses on ALDFG and thus this component will be directly relevant. Also the project will be specifically relevant to the priority area of 'A sustainably harvested and productive ocean'. The proposed project will also support the relevant proposed post-2020 Biodiversity targets (notably successor to Aichi target 6), through the project's focus on addressing unsustainable bycatch and discards, ALDFG and promoting the EAF approach to fisheries management to ensure sustainable use of marine resources.

## **g. Innovation, sustainability and potential for scaling up**

**Innovation:** Innovation is evident in each of the components of the project. Component 1 focuses on adapting existing and/or piloting new technologies to better manage bycatch and reduce discards in fisheries where bycatch/discards has not been addressed or fully addressed. This particularly applies to gear types that have not been targeted by previous REBYC projects and other initiatives, notably bycatch associated with gillnets and longlines. It also seeks to address lost and discarded fishing gear (a cause of 'ghost fishing' and plastics pollution), through pilot activities focusing on gear marking and registration which is innovative for the CLME+ region, particularly if, as planned, they can be developed with local materials. More generally, any adaptation to fishing gears to mitigate risk of ghost fishing should it become ALDFG can be considered novel. Particularly innovative elements associated with Component 2 include introducing new policy directives that support investments in better management of bycatch and reduction of discards as well as piloting of improved monitoring and data collection on bycatch and discards in target fisheries using new digital approaches, including recording systems using mobile phone/tablet apps for SSF and port-based staff (supporting PSMA measures), training for recording species identification to improve data collection (with possible development of an AI system for fish id), and development of near real-time maps of bycatch and discard hotspots. For Component 3, encouraging and supporting behavioural change by identifying and promoting incentives and improved value chains related to bycatch and discards use with a focus on opportunities through blue economy development and building capacity among fisher communities are innovative for the target fisheries. The implementation of the blue economy concept is still relatively new in the CLME+ region and thus project successes and lessons will be transferable to other neighbouring coastal and island states. These will include experience of project activities to increase access to finance, insurance and markets and encourage public-private partnerships, improving training in SSF business skills and value chain development for appropriate bycatch/discards for new value-added fish products underpinned by decent work. Furthermore, by understanding private investors' needs, the project also aims to support de-risking investments from

microloans to fisherfolk (SSF) in support of new entrepreneurial enterprises, up to large private investments in regional and international firms, as innovative new business opportunities are realized. Sharing of knowledge on successful development of real-world smart solutions to bycatch management is a key feature of the project, and the transfer and scaling up of project-generated knowledge through the direct involvement of multiple end-users (fishers, managers, fishing agencies, environmental NGOs, etc) will be facilitated in Component 4.

*Sustainability* Sustainability of project results is built into the project design with actions to minimize the risks to sustainability. Experience from previous GEF-funded initiatives, such as the GEF-5 Common Oceans/Areas Beyond National Jurisdiction (ABNJ) programme and previous REBYC projects, shows that demonstration of the benefits of EAF including addressing bycatch/discards, and adoption of mitigation approaches and technologies (e.g. less crew time spent dealing with bycatch, increased target species catch due to less bycatch), will encourage their integration as standard operating practices within the fisheries industry. Similarly, the ability to demonstrate that fish is sourced from fisheries employing bycatch mitigation (following EAF and marine fisheries certification standards) will make the fishing industry business more competitive on regional and world markets. Indeed, recent fish import requirements by some developed countries to prohibit the intentional mortality or serious injury of some bycatch species/groups in the course of commercial fishing operations in the fisheries (including longline, gillnet and seine) or the requirement to have procedures in place to reliably certify that a country's exports of fish and fish products are not the product of an intentional killing or serious injury e.g. the US Marine Mammal Protection Act – Fish and Fish Product Import Provisions, also support sustainability aims. Enshrining the requirement to deploy bycatch mitigation technologies in different fisheries within national policy and legislation in the four target countries (Component 2) will help create the enabling platform for industry wide use of bycatch technologies.

The project's capacity building efforts (in all four Components) to employ bycatch mitigation and address discards, including strengthening national fisheries authorities to undertake MCS to ensure compliance with bycatch regulations, are a key element of the project. It is expected that by the end of the project (year 4), the key fisheries-related institutions, organizations and stakeholders will have sufficient capacity to ensure continuity of the project results. A 'training of the trainer' approach and learning-by-doing methodologies, combined with an effective Knowledge Management programme (Component 4) promoting wide sharing of project-generated information (with project data base/knowledge repository), lessons learned and good practice including linkage with well-established knowledge platforms and the websites of project partners, will ensure that capacity and knowledge generated by the project will be sustained over the longer-term.

The project is designed to reduce socio-economic risks to the sustainability of project results through empowering fisherfolk and fishing communities and promoting participatory co-management of fisheries that takes into account the local dynamics of social-ecological systems which are critical to the successful application of the EAF approach. Integral to this are project efforts to promote gender equality and gender mainstreaming throughout its components, strengthening capacity from the ground up. Developing the potential of alternative livelihoods, building better connections to relevant markets, and enhancing capacity in fisheries value chain analysis (through under Component 3), will help ensure more sustainable livelihoods and improved local food security and nutrition as well as increasing the resilience of the target coastal communities and support sustainability aims. These actions and promotion of fisheries co-management will offer the potential for fair and decent work including improved working conditions in the fisheries industry and therefore promote a better quality of life quality for workers (particularly for women) and their families, further supporting sustainability of project results. In this context, the FAO *Voluntary Guidelines for Securing Small-Scale Fisheries*, and the *Code of Conduct for Responsible Fisheries (CCRF)* will provide guiding principles for the design and implementation of the project. Further support for the sustainability of project results comes from the strong project partnerships with well-established regional and national entities, such as with WECAFC and CRFM, which share similar aims and mandates with regard to achieving responsible fisheries. For instance, the project has been designed in close alignment with already endorsed policies and mechanisms, such as the CLME+ SAP, the Caribbean Community Common Fisheries Policy (CCCFP), and the CRFM Strategic Plans. Consequently, the project does not rely heavily on



establishing new policy and institutional frameworks that would be required to promote project goals after the project concludes. Institutional sustainability will be further promoted by the involvement of the WECAFC Secretariat in the project, providing the opportunity to ensure that the project results are embedded in its strategy and programmes and also helping to facilitate scaling up through WECAFC's wide membership.

The project is also compliant with the FAO Environmental and Social Standards (ESS) and rated as 'low risk' given its overall focus on bycatch reduction and promoting responsible fisheries, which supports environmental sustainability aims.

*Scaling-up:* Project successes can be translated to other non-participating countries (both coastal and island states) in the CLME+ region as well as other tropical and sub-tropical LMEs and is a major element of Component 4. Project results, successful lessons and good practices will be disseminated and scaled up through both national, regional and global level partners and initiatives, and conversely the project will benefit from their lessons learned. At the regional level, potential opportunities for scaling up and wider dissemination of results include measures to implement the CLME+ SAP and its National Action Plans, and project linkage through non-participating member countries of WECAFC, CRFM, and CARICOM, and other GEF-financed projects including the UNDP-GEF *PROCARIBE+* project (a follow-up to the UNDP-GEF CLME+ project), the CAF-FAO-GEF BE-CLME+ project and the proposed FAO-GEF EAF4SG project, all of which support measures for sustainable use of natural resources in the CLME+ region. The existence of several closely connected GEF-funded projects also provides an unprecedented opportunity for scaling up through linkages and networking and potential leverage to achieve greater economies of scale depending on the sequencing of activities. The EAF4SG project is of particular relevance given its focus on EAF and the overlap in target countries – both the REBYC-III CLME+ and EAF4SG projects include Guyana, Suriname and Trinidad and Tobago. The project will also maintain close ties with the regional fishery bodies (WECAFC, CRFM, OSPESCA, ICCAT for pelagics, and others in the RFB network linked to FAO), as well as Fishery Advisory Committee and the National Inter-sectoral Coordination Mechanism in the target countries, the SPAW –RAC (based in Guadeloupe), research institutions (notably UWI) and NGOs (CANARI, CNFO) as well as global initiatives such as FAO-GEF Coastal Fisheries Initiative project. The project will achieve dissemination at the global level through sharing results with the IW:LEARN and LME:LEARN communities [5] and through FAO-supported fisheries networks.

The project also offers the potential to scale up impact through activities to attract private sector investments in responsible fisheries at the local, national, regional levels, including new or strengthened policies supporting private sector investments in SSF, the development of incentives for new business opportunities, strengthening capacity in value chains, development of public-private initiatives involving co-management, and facilitating access to improved knowledge on commercial solutions to achieving responsible fisheries through online content. Related to this, it is expected that follow-up bankable proposals will be developed to scale-up the key achievements of this project during the final year of the project as part of a sustainability strategy.

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#### [Footnotes]

[1] According to FAO [8], artisanal, or small-scale fisheries, are traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amounts of capital and energy, relatively small fishing vessels (if any), engaging in short fishing trips, usually close to shore, and mainly fishing for local consumption. They can be for subsistence or commercial. The term “artisanal” refers to the relative level of technology, while “small-scale” refers to the size of the fishing unit (scale).

[2] See final project evaluations of the REBYC, REBYC-CTI, and REBYC-II LAC.

[3] FAO (2021). Terminal Evaluation of the Project “Sustainable management of bycatch in Latin America and Caribbean trawl fisheries” (REBYC-II LAC) GEF ID: 621538. Advanced draft, reviewed 28 August 2021.

[4] [www.benthis.eu](http://www.benthis.eu) and [www.discardless.eu](http://www.discardless.eu)

[5] *Assumptions* are defined here as external factors or conditions that need to be present for change to happen, but are beyond the power of the project to influence or directly address, e.g. turnover of government officials, global financial situation.

[6] *Impact drivers* defined here as significant external factors that can positively influence the direction of change along the project's causal pathways from outputs to outcomes to impacts, and over which the project, or its stakeholders/partners has some degree of control or influence, e.g. public pressure on decision-makers through KM and advocacy activities.

[7] See <https://www.iwlearn.net/> and <https://ioc.unesco.org> respectively

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## 1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

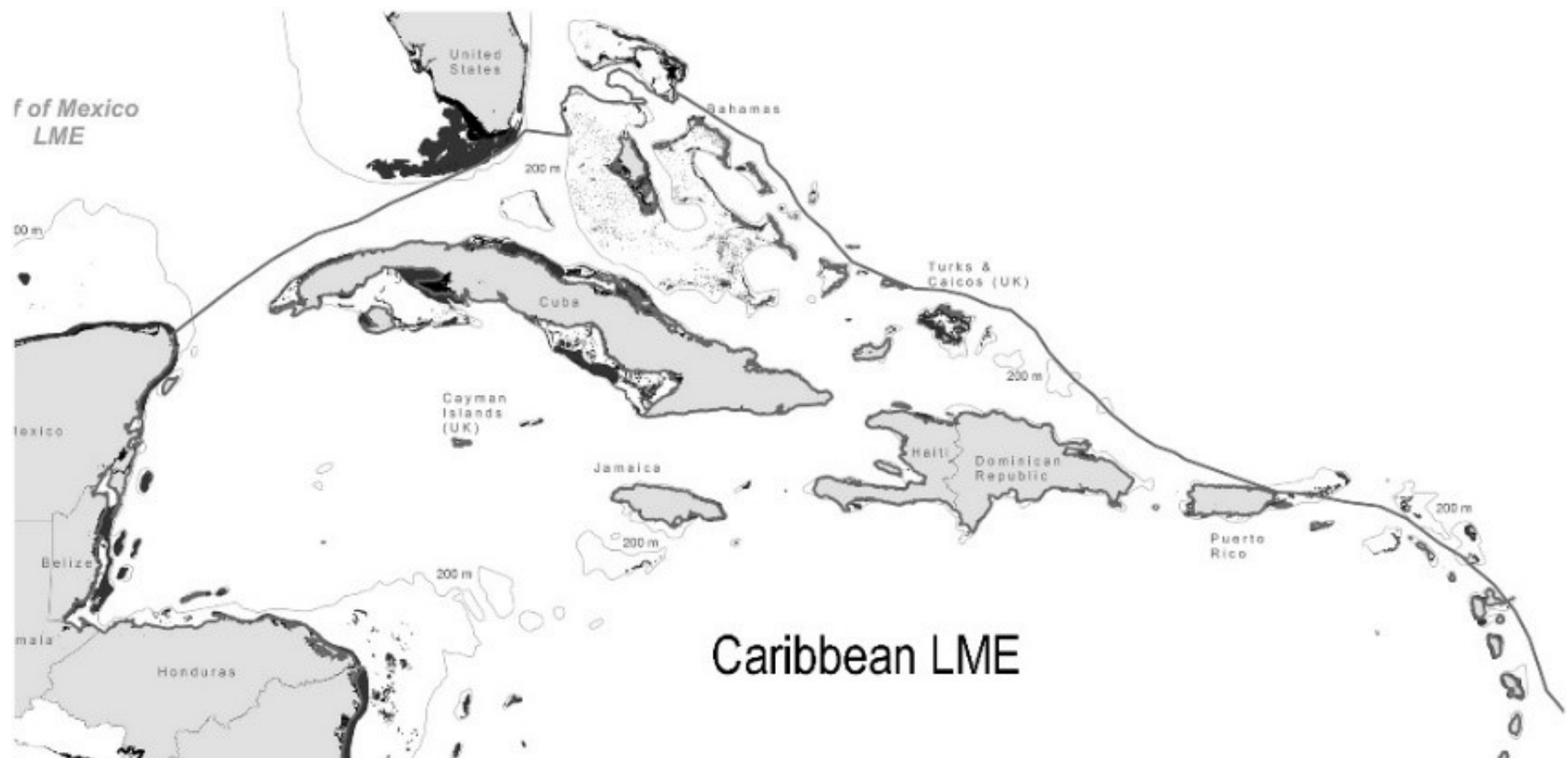
Coordinates

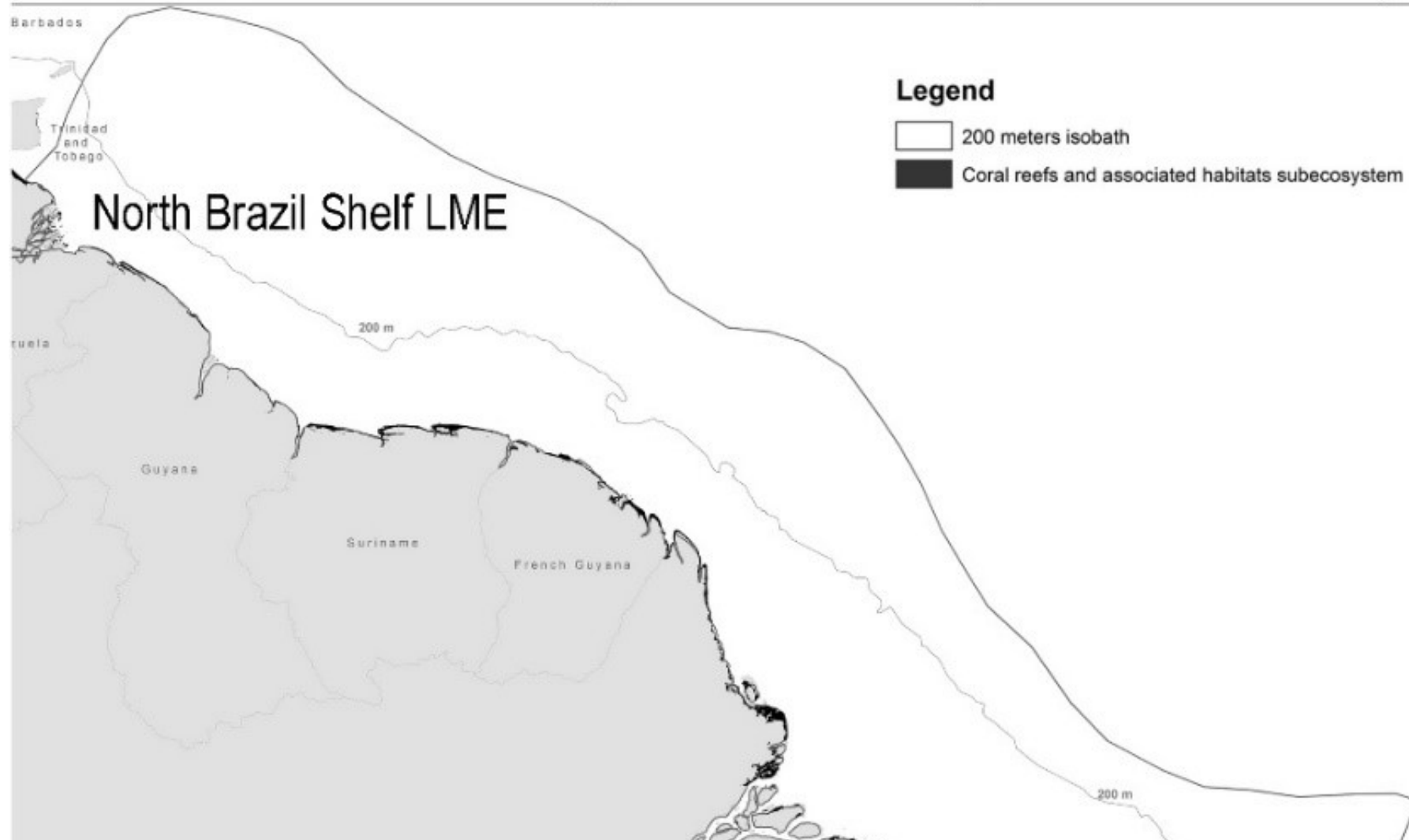
24°40' N, 89°45' W

01°00' S, 89°45' W

01°00' S, 45°04' W

24°40' N, 45°04' W







## 2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

Stakeholder consultations during the PIF phase were constrained by COVID-related lockdowns and restrictions. Nevertheless, the project has engaged with a variety of key stakeholders at the national and regional levels during the initial project development phase. This included the national fisheries agencies of Barbados, Guyana, Suriname and Trinidad and Tobago, notably officials at the decision-making level (Permanent Secretaries/Ministries and GEF OFP, and Chief Fisheries Officers), FAO (sub-regional office in Barbados as well as FAO Country Offices in Guyana, Suriname and Trinidad and Tobago), and the WECAFC Secretariat. In addition, the project has had exchanges with the design teams of the GEF-funded PROCARIBE+, BE-CLME+ and proposed EAF4SF projects to explore possible collaboration and synergies. Project development has also been informed by other regional GEF projects, including the FAO-GEF CC4Fish project. Initial discussions included assessment of the current situation, identification of specific needs and prioritization of project needs and activities based on an outline project concept document. The proposed project was presented at a virtual meeting to the national country partners on 20<sup>th</sup> July 2021. More in-depth consultations with the key stakeholders will be undertaken during PPG including those shown in the table below.

This project will draw together a large and diverse group of stakeholders who play important roles in fisheries in the CLME+ region, including fisheries management and regulatory authorities, fisherfolk communities, academic and private sector groups involved in developing and testing bycatch mitigation technologies, those involved in financing fisheries, and stakeholders involved along target fisheries value chains. The project will build on existing collaborations (particularly through those developed through the FAO-GEF REBYC-II LAC project). Key stakeholders to be involved in the full project development include the national fisheries authorities of the four target countries (Fisheries Division, Ministry of Maritime Affairs and the Blue Economy, Barbados; Fisheries Department, Ministry of Agriculture, Guyana; Fisheries Department, Ministry of Agriculture, Animal Husbandry & Fisheries, Suriname; and Fisheries Division, Ministry of Agriculture, Land and Fisheries, Trinidad and Tobago), as well as fisherfolk organisations (local and national) and private sector fishing enterprises (SSF as well as industrial fisheries companies operating in the target fisheries), including processors, marketers and retailers as well as the institutions financing their fisheries.

At the regional level, linkage with other Regional Fisheries Bodies, including the CRFM and OSPESCA, NOAA, the French Research Institute for the Exploration of the Sea (IFREMER), the Caribbean Network of Fisherfolk Organizations (CNFO) and the Cartagena Convention SPAW Protocol/RAC will help facilitate the scaling up and wider impact of project successes across the CLME+ area.

Strong linkages are also foreseen with civil society organisations including the Caribbean Natural Resources Institute (CANARI), National Sea Turtle Task Force (the NSTTF of T&T also has a formal By-Catch Working Group), the Barbados Sea Turtle Project, and the Trinidad and Tobago Marine Mammal Stranding Network, together with regional academic institutes such as the Center for Resource Management and Environmental Studies (CERMES) of the University of the West Indies in Barbados. Other existing regional initiatives with which collaboration and synergies will be explored during the PPG phase include: the Regional Master Plan for Sustainable Development of Coastal Fisheries Resources in the Region (CRFM/ CARICOM), ACPFish II/CANARI/CNFO work on the promotion of the Ecosystem Approach to Fisheries among fisherfolk organizations in the Caribbean and the FAO/WECAFC/CRFM "Review of current fisheries



management performance and conservation measures in the Western Central Atlantic region". Depending on how activities under Component 3 are developed linkages during the PPG phase will also be formed with financial and insurance sector companies and groups/NGOs addressing gender and alternative livelihood issues in fisher communities.

An overview of main stakeholders is presented below with their roles and responsibilities during the full project design period and expected role during project implementation outlined. The latter will be elaborated further during the project development phase.

Stakeholder	Participation during project preparation	Role/expected participation during project implementation
<b>Government Institutions</b>		
<b>BARBADOS</b>		
Fisheries Division, Ministry of Maritime Affairs and the Blue Economy	Project Focal Point, Liaison Office in country and lead national agency supporting development of project activities in Barbados	Direct responsibility for ecosystem-based fisheries management, research and licensing and enforcement of fisheries regulations. Also, facilitate and support legal, policy and institutional related outcomes proposed by the project  National executing partner for project, responsible for delivery of project activities relevant to country including project M&E at national level
Ministry of Environment and National Beautification	GEF Operational Focal Point  Validation and endorsement of PIF and CEO Endorsement Request	Facilitate and support legal, policy and institutional related outcomes proposed by the project  Liaison with the GEF Implementing Agencies and the project's Executing Agency  Contributes to project oversight (member of national PSC)
Coastal Zone Management Unit	Source of technical data and advice on integrated coastal zone management	Key capacity building and advocacy partner for the ecosystems approach and Knowledge Management within a blue economy context
Barbados Coast Guard	Consultation on operational opportunities to promote fisheries MCS	Key partner for capacity building and definition of strategies to promote legal fishing
Barbados National Union of Fisherfolk Organisations	Consultation on opportunities for promotion of information sharing on sustainable fisheries. effective bvc	Key institution representing fishers' socio-economic interest and source of extensive local knowledge on fishing.

	catch/discard measures, co-management and value chain analyses and blue growth	<p>Key partner for implementation of all components</p> <p>Instrumental in ensuring the participation of fishers in capacity building and in supporting sustainable fisheries implementation</p>
Barbados Sea Turtle Project	Consultations on design and piloting of TEDs for relevant target fisheries in Barbados	Involvement in piloting of TEDs for relevant target fisheries in Barbados
<b>GUYANA</b>		
Fisheries Department	Project Focal Point, Liaison Office in country and lead national agency supporting development of project activities in Guyana	<p>Direct responsibility for ecosystem-based fisheries management, research and licensing and enforcement of fisheries regulations. Also, facilitate and support legal, policy and institutional related outcomes proposed by the project</p> <p>National executing partner for project, responsible for delivery of project activities relevant to country including project M&amp;E at national level</p>
Environmental Protection Agency	<p>GEF Operational Focal Point</p> <p>Validation and endorsement of PIF and CEO Endorsement Request</p>	<p>Facilitate and support legal, policy and institutional related outcomes proposed by the project</p> <p>Liaison with the GEF Implementing Agencies and the project's Executing Agency</p> <p>Contributes to project oversight (member of national PSC)</p>
Ministry of Agriculture	Parent ministry responsible for fisheries policy and management	Important project partner for policy and decision-making on EAF at the national level, including on mitigation and management of bycatch and MCS measures
Ministry of Business	Source of information on fisheries business ventures within the context of blue economy	Important project partner for supporting blue economy initiatives, including improving access to financing, development of value chains, as well as other incentives for adoption of responsible fisheries, Also inputting to associated capacity building, and Knowledge Management

Upper Corentyne, Guyana a National Fisherfolk Organisation	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discards measures, co-management and value chain analyses and blue growth	Key institution representing fishers' socio-economic interest and source of extensive local knowledge on fishing.  Key partner for implementation of all components  Instrumental in ensuring the participation of fisherfolk in capacity building and in supporting sustainable fisheries implementation
Georgetown Fishermen's Cooperative Society Limited - Guyana	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discards measures, co-management and value chain analyses and blue growth	Key institution representing fishers' socio-economic interest and source of extensive local knowledge on fishing.  Key partner for implementation of all components  Instrumental in ensuring the participation of fisherfolk in capacity building and in supporting sustainable fisheries implementation
<b>SURINAME</b>		
Sub-Directorate Fisheries, Ministry of Agriculture, Animal Husbandry and Fisheries	Project Focal Point, Liaison Office in country and lead national agency supporting development of project activities in Suriname	Direct responsibility for ecosystem-based fisheries management, research and licensing and enforcement of fisheries regulations. Also, facilitate and support legal, policy and institutional related outcomes proposed by the project  National executing partner for project, responsible for delivery of project activities relevant to country including project M&E at national level
Ministry of Spatial Planning and Environment	GEF Operational Focal Point  Validation and endorsement of PIF and CEO Endorsement Request	Liaison with the GEF Implementing Agencies and the project's Executing Agency. Responsible for policy with regard to environment and climate change.  Facilitate and support legal, policy and institutional related outcomes proposed by the project  Contributes to project oversight (member of national PSC)
Ministry of Land and Forestry	Consultation in project aims and components	Responsible for management of coastal zone and enforcement within Multi Use Management Areas (Iago

		ons)
Maritime Authority Suriname	Consultation opportunities to promote sustainable fisheries and improve MCS	Key partner responsible for maritime services including registration of vessels and safety of shipping.
Ministry of Justice and Police: maritime police and prosecution	Consultation opportunities to promote sustainable fisheries and improve MCS	Key partner for enforcement of fisheries regulations and the follow up with prosecution
Suriname Coast Guard	Consultation opportunities to promote sustainable fisheries and improve MCS	Key partner for enforcement of fisheries regulations
Seafood Association Suriname and Suriname Industrial Fisheries Cooperative	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth.	<p>Key institution representing fishers' socio-economic interest and source of extensive local knowledge on fishing.</p> <p>Key partner for implementation of all components</p> <p>Instrumental in ensuring the participation of fisherfolk in capacity building and in supporting sustainable fisheries implementation</p>
Suriname National Fisherfolk Organisation (SUNFO)	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth	<p>Key institution representing fishers' socio-economic interest and source of extensive local knowledge on fishing.</p> <p>Key partner for implementation of all components</p> <p>Instrumental in ensuring the participation of fisherfolk in capacity building and in supporting sustainable fisheries implementation</p>
<b>TRINIDAD AND TOBAGO</b>		
Fisheries Division, Ministry of Agriculture, Land and Fisheries	Project Focal Point, Liaison Office in country and lead national agency supporting development of project activities in Trinidad and Tobago	<p>Direct responsibility for ecosystem-based fisheries management, research and licensing and enforcement of fisheries regulations. Also, facilitate and support legal, policy and institutional related outcomes proposed by the project</p> <p>National executing partner for project, responsible for delivery of project activities relevant to country incl</p>

		uding project M&E at national level
Environmental Management Authority	<p>GEF Operational Focal Point</p> <p>Validation and endorsement of PIF and CEO Endorsement Request</p>	<p>Regulatory agency with respect to the environment.</p> <p>Liaison with the GEF Implementing Agencies and the project's Executing Agency. Responsible for policy with regard to environment and climate change.</p> <p>Facilitate and support legal, policy and institutional related outcomes proposed by the project</p> <p>Contributes to project oversight (member of national PSC)</p>
Ministry of Agriculture, Land and Fisheries	Parent ministry responsible for fisheries policy and management	Important project partner for policy, legislation and decision-making on fisheries at the national level. Facilitate and support all policy related outcomes proposed by the project.
Ministry of Planning and Development	<p>GEF Political Focal Point</p> <p>Source of information on activities being conducted in the coastal zone.</p>	<p>Parent ministry responsible for environmental policy and management</p> <p>Responsible for management of the coastal zone</p>
Institute of Marine Affairs	Source of information on fisheries resources and marine environment	Key partner in fisheries and marine research
Maritime Services Division, Ministry of Works and Transport	Consultation opportunities to promote fisheries MCS	Key partner responsible for maritime services including registration of vessels and safety of shipping.
Caribbean Fisheries Training and Development Institute	Consultation opportunities on capacity-building for fishers	Key partner for conduct of training of fishers in such areas as safety at sea, engine repair, fish handling and processing
Ministry of Trade and Industry	Source of information on trade and industry within the context of fisheries and blue economy	Key partner in regulating fisheries-related trade
Community Development Division, Ministry of Sport and Community Development	Consultation on opportunities to promote alternative and enhanced livelihoods for fishers	Key partner in livelihood enhancement of fishers

Co-operative Development Division, Ministry of Labour and Small and Micro Enterprise Development	Consultation on opportunities to promote organization of fishers	Key partner in capacity building of fishers with respect to establishment and administration of co-operatives as viable business enterprises. Responsible for oversight of fisher co-operatives.
Trinidad and Tobago United Fisherfolk	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth.	<p>Umbrella association representing fishers' socio-economic interests.</p> <p>Source of local knowledge on fishing.</p> <p>Instrumental in ensuring the participation of fishers in capacity building and in garnering support for sustainable fisheries.</p> <p>Key partner for implementation of all components</p> <p>Key partner in development and implementation of fisheries policy</p>
Office of the Prime Minister, Gender and Child Affairs	Consultation on opportunities to promote women in fisheries.	Key partner on gender perspective.
Trinidad and Tobago Longliners' Association	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth.	<p>Association representing non-artisanal longliners' socio-economic interests.</p> <p>Instrumental in ensuring the participation of fishers in capacity building and in garnering support for sustainable fisheries.</p> <p>Key partner for implementation of all components</p> <p>Key partner in development and implementation of fisheries policy</p> <p>Source of extensive traditional knowledge on fishing.</p>
Fisher Organizations (Associations and Co-operatives) at the various landing sites around Trinidad and Tobago	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth.	<p>Associations and co-operatives representing socio-economic interests of fishers operating from various sites around Trinidad and Tobago and using various fishing methods including gillnets, seines, lines, trawl nets, fishpots.</p> <p>Instrumental in ensuring the participation of fishers in</p>

		<p>instrumental in ensuring the participation of fishers in capacity building and in garnering support for sustainable fisheries.</p> <p>Key partners for implementation of all components</p> <p>Key partners in development and implementation of fisheries policy</p> <p>Source of extensive traditional knowledge on fishing.</p>
Trinidad and Tobago Industrial Fishing Association Limited	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth.	<p>Association representing non-artisanal trawl fishers' socio-economic interests.</p> <p>Instrumental in ensuring the participation of fishers in capacity building and in garnering support for sustainable fisheries.</p> <p>Key partner for implementation of all components</p> <p>Key partner in development and implementation of fisheries policy</p> <p>Source of extensive traditional knowledge on fishing.</p>
Future Fishers	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth, as well as joint research.	<p>NGO on east coast of Trinidad representing socio-economic interests of fishers.</p> <p>Instrumental in ensuring the participation of fishers in capacity building and in garnering support for sustainable fisheries.</p> <p>Key partner for implementation of all components</p> <p>Key partner in development and implementation of fisheries policy</p> <p>Source of extensive traditional knowledge on fishing.</p>
<b>Inter-governmental and External Governmental Institutions</b>		
Food and Agriculture Organization of the United Nations (FAO)	GEF Agency for this project. Key partner on region-wide fisheries management approaches and lessons learned.	Global coordinating entity, ensuring coherence in global-regional fisheries management and development, including sustainable bycatch/discard strategies and blue growth, and FAO has worked extensively on fisheries management throughout the region

		Responsible for project implementation, including providing substantial technical support. The FAO Regional Headquarters in Barbados provides support for WECAFC
Western Central Atlantic Fishery Commission (WECAFC)	Provided support during the PIF and has pledged support for coordination of project development during the PPG.	Regional Fisheries Body. Key for coordinating project in regional and sub-regional fisheries management approaches, including blue economy and EAF. Convener of sub-regional meetings.
Caribbean Regional Fisheries Mechanism (CRFM)	They will be engaged throughout the project to make certain activities are well-aligned with the CFRM strategy	CRFM is an inter-governmental organization concerned with the promotion of sustainable fisheries in the region.
Caribbean Fisheries Management Council (CFMC)	Will collaborate on numerous project activities	CFMC is responsible for the creation of management plans for fishery resources (FMPs) in the US Caribbean Exclusive Economic Zone (EEZ) off Puerto Rico (PR) and the United States Virgin Islands (USVI)
Interim Coordination Mechanism for Sustainable Fisheries of CRFM, OSPESCA and WECAFC	Will be kept informed of project activities and several of its Working Groups, e.g. those for Fisheries Data and Statistics, are expected to be involved in project activities	The ICM aims to facilitate, support and strengthen the coordination of actions among the three RFBs to increase the sustainability of fisheries. It formalizes the joint working arrangements and processes, particularly for the joint working groups on various species and specific fisheries
Central American Fisheries and Aquaculture Organization (OSPESCA)	Promotes the development and the coordinated management of regional fisheries and aquaculture activities, helping to strengthen the Central American integration process	Coordinates communication between all project stakeholders and knowledge dissemination in Central America  They will be engaged in and benefit from a variety of project activities.
National Oceanic and Atmospheric Administration (NOAA) of USA	NOAA already engages with WECAFC on a variety of science and monitoring activities. These programs and project collaboration will help to inform and strengthen the design of project outputs.	Provides fisheries information systems for conservation and management, as well as more responsible fishing technology
SPAW-RAC (Guadeloupe)	Will collaborate on project activities related to ETP species and mitigation	A regional agreement for the protection and sustainable use of coastal and marine biodiversity in the Wider Caribbean Region



	ation measures to reduce negative impacts of fishing gears on marine habitats	er Caribbean Region.
International Commission for the Conservation of Atlantic Tuna (ICCAT)	Consultation on obligations for bycatch management of member states (includes Barbados and T&T), potential technical support in project design on appropriate BRDs	Consultation on design of BRDs and technical support for their implementation for tuna fisheries targeted by the project
<b>Civil Society Organizations, Big and Small Non-Governmental Organizations</b>		
World Wide Fund for Nature (WWF)	Involvement in providing support on sustainable fisheries certification and standards	Knowledge management and information exchange especially on marine spatial planning, ecosystem health, biodiversity. Involvement in involvement in the MSC marine resources certification schemes in Suriname and Guyana.
Caribbean Natural Resources Institute (CANARI)	Important partner to be consulted on ecosystem-based strategies and civil society participation within the context of blue economy	Important partner on civil society and small business participation within the context of EAF  Key capacity building and advocacy partner for the ecosystems approach and Knowledge Management within a blue economy context
<b>Academia</b>		
Centre for Resource Management and Environmental Studies (CERMES) of UWI	Source of data and information on the socio-economic benefits of responsible fisheries and blue growth in Caribbean.	Source of technical expertise and consultations in processes to develop and implement responsible fisheries, blue growth opportunities, engagement and awareness strategies. Support for capacity building activities and Fisheries Policy and Plan development.
Department of Agricultural Economics and Extension, Faculty of Food and Agriculture, University of the West Indies (UWI), St. Augustine	Source of data and information on fisheries socio-economics and value chains.	Source of technical expertise in socio-economics and value chain analysis of fisheries and carry out ICT training.
University of Trinidad and Tobago	Source of data and information on fisheries	Source of technical expertise in fisheries science and research

Institute of Gender and Development Studies, UWI, St. Augustine	Source of data and information on gender perspective.	Source of technical expertise on gender perspective.
Department of Life Sciences, The UWI, St. Augustine	Source of data and information on fisheries	Staff can provide a source of technical expertise in fisheries science and research. There are 5 undergraduate courses being taught that are focused on coastal and marine ecosystems, one of these courses is specifically focused on Fisheries Management.
<b>Private Sector</b>		
Caribbean Network of Fisheries Organizations	Consultation on opportunities for promotion of information sharing on effective bycatch/discard measures, co-management and value chain analyses. They will be engaged to provide insights regarding development of project activities and will be a beneficiary of project activities.	Key NGO representing a variety of fishing interests including on fishers' socio-economic conditions and is a source of extensive traditional knowledge on fishing  Instrumental in ensuring participation of fishers in capacity building and in garnering support for sustainable fisheries, including uptake of bycatch mitigation measures, and blue economy policy.
Commercial fisheries enterprises	Consultation on opportunities for promotion of information sharing on sustainable fisheries, effective bycatch/discard measures, co-management and value chain analyses and blue growth. Several companies engaged in the REBYC-II LAC project will be approached during the PPG stage, e.g. Marisa Fisheries N.V., Holsu N.V., Heiploeg Group, and Deep Sea Atlantic N.V.	There are several commercial entities engaged in commercial fisheries throughout the region. These will be primary stakeholders throughout project implementation as well as beneficiaries of project improvements. Heiploeg Suriname N.V, for instance, is a key company representing fish processing companies that export shrimp. Important for consultation, especially on seabob.

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

PPG phase resources will be utilized to engage all key stakeholders listed above during the project design phase, during which a more comprehensive stakeholder analysis will be conducted to determine specific stakeholder needs and priorities. Further in-depth consultations will be undertaken to establish/strengthen partnerships and practical modalities for linkage and collaboration, and a project partner and stakeholder engagement plan will be developed.

A series of stakeholder workshops and regular communications with key individuals and stakeholder groups will be held during the PPG phase. Two regional workshops (inception and project document finalization) and national consultations will be held to identify and involve the relevant stakeholders. These workshops may be conducted online depending on the Covid restrictions and public health risks at the time. The national fisheries administrations are expected to take a coordinating role during the design phase in their project countries, while WECAFC is likely to coordinate the regional level workshops and activities. The mechanisms for full project partnerships, coordination, implementation, monitoring and evaluation will be fully developed and agreed on during the design phase.

### 3. Gender Equality and Women's Empowerment

**Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).**

FAO is committed to gender equality and women's empowerment and has a specific gender policy and strategy that is integrated across all of its programmes and projects. The project will follow both FAO and GEF gender policies to ensure that the project maximizes participation, inclusion, opportunities and benefits to women in all project activities, whilst respecting the norms, values and customs of targeted communities. The FAO Policy on Gender Equality 2020-2030<sup>[1]</sup> is set on a foundation of four objectives<sup>[2]</sup> that seek to promote gender equality for development and natural resource management, and on which the gender-related objectives of the project are focused. The project will also complement the implementation of CRFM's gender mainstreaming policy for the fisheries sector, a regional protocol<sup>[3]</sup> on securing sustainable small-scale fisheries for Caribbean Community fisherfolk and societies. The project also draws on experience gained from relevant regional projects including the recently completed 'Mainstreaming Gender Equality in Fisheries in the Caribbean' project which had a focus on improving governance for gender-responsive fisheries planning and decision-making and enhancing national capacities for mainstreaming gender into fisheries management within the CLME+ sub-project "EAF for the Eastern Caribbean Flyingfish".

A gender-sensitive approach<sup>[4]</sup> will be adopted across the project and throughout its life cycle, with representation of, and consultations with, women, youth and other vulnerable groups emphasized. The goal of gender equality will guide the selection of participants in project activities as well as in project staffing (particularly leadership positions), and specific opportunities and activity sets at both national and fishing community levels to help empower and directly benefit women giving them an equal voice and participation in decision-making (which link to FAO gender objectives 1 and 2) and also benefit other minority or marginalised groups such as unemployed youth. Special attention will be given to complementing post-Covid-19 recovery measures to ensure women and men's diverse needs are met.

During the PPG phase, the project will provide training on gender analysis and equality to project participants, gender awareness and responsiveness to those involved to ensure that gender mainstreaming is maximized in the project design. A project Gender Strategy and Plan will be developed during the project design (PPG) phase, with actions to be taken under each component, specific gender targets and gender-specific indicators built into the project's M&E framework and necessary budgetary provision as appropriate. A gender specialist will also be included in the project management team. Gender data will be collected and analysed in the proposed project during the PPG stage to better understand the gender dimensions of bycatch/discard problems and the impacts and sustainability of alternatives along the value-chain and to ensure gender-specific views will be fed into the design and implementation of project components.

Gender is a particularly important when considering improvements to market and processing facilities, value adding activities (in particular in relation to bycatch and fish waste (e.g. fish silage). In addition, providing improved food safety training results in less post-harvest losses and improved livelihoods of processing workers, which are mostly women. The project will also promote a participatory, climate- and gender-sensitive approach to any Marine Spatial Plans, Fisheries Management Plans, fisheries policies or legislation targeted for improvement through bycatch management measures.

Project activities targeted at women will be included in all four Components, but Component 3 has a specific emphasis on opportunities for women, as women frequently play the major role in processing, packaging, marketing, distribution and sale of fish products in SSF. This includes a focus on support for new value chain and market development with a focus on the utilization of bycatch, promotion of alternative income-generating activities, improving access to micro-credit facilities and insurance for existing or new bycatch/discard fish processing or waste product ventures, or alternative livelihood marine conservation schemes, as well as associated capacity enhancement for small business enterprise development specifically targeted at women (supporting

FAO gender objectives 3 and 4). A detailed assessment of the current situation of women in the sector and opportunities for more sustainable livelihoods based on addressing bycatch/discards will be undertaken during the PPG phase. The project has set an initial Core Indicator 11 target of generating direct benefits to approximately 6,660 males (out of a total of 26,650) and 2670 females (out of 10,680) across the four countries participating in the project.

In developing gender-responsive project activities and implementation, the project will draw on FAO's long-standing technical capacity in its the Fisheries Division in assisting FAO Members in the development of gender-responsive fisheries programmes and projects and supporting women's empowerment in the fisheries sector. FAO will provide guidance on gender mainstreaming for the project's activities and events, gender-sensitive knowledge product development, and gender-targeted awareness raising and capacity development activities including supporting improved capacity for collecting and reporting gender statistics and fostering women's economic empowerment throughout the value chains of fisheries, thus contributing to all project components. In addition, project communication products will ensure appropriate mainstreaming of gender into all communication products, with targeted effective communication products developed for women and distributed through the most gender appropriate communication channels, and gender will have a special focus in the Communication Strategy of the project.

The project will also consider how best to engage and include groups representing youth (as agents of change through awareness creation) and persons with disabilities within the project during the PPG phase.

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#### [Footnotes]

[1] FAO. 2020. FAO Policy on Gender Equality 2020–2030. Rome. <http://www.fao.org/3/cb1583en/cb1583en.pdf>

[2] Objective 1: Women and men have equal voice and decision-making power in rural institutions and organizations to shape relevant legal frameworks, policies and programmes; Objective 2: Women and men have equal rights, access to and control over natural and productive resources, to contribute to and benefit from sustainable agriculture and rural development; Objective 3: Women and men have equal rights and access to services, markets and decent work and equal control over the resulting income and benefits; Objective 4: Women's work burden is reduced by enhancing their access to technologies, practices and infrastructure and by promoting an equitable distribution of responsibilities, including at household level.

[3] The protocol is being developed within the framework of the Caribbean Community Common Fisheries Policy (CCCFP). Further, the proposed project recognizes that the UN Entity for Gender Equality and the Empowerment of Women (UN Women) and CARICOM entered into an MOU in January 2017. The project will explore every opportunity to support CARICOM in implementation of the objectives of this MOU through the proposed project.

[4] Gender Sensitive: Identify and acknowledge the existing gender differences and inequalities between women and men. Gender is integrated as a means to achieve other objectives without seeking to change structural barriers.

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes**

**closing gender gaps in access to and control over natural resources; Yes**

**improving women's participation and decision-making; and/or Yes**

generating socio-economic benefits or services for women. Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

#### 4. Private sector engagement

##### Will there be private sector engagement in the project?

Yes

##### Please briefly explain the rationale behind your answer.

Private sector engagement is essential for achieving successful outcomes and impact of this project, particularly for changing fisher attitudes, behaviours and investments towards more ecosystem-based fisheries management, and importantly for the scaling up and sustainability of project successes, as almost all of the fishing vessels operating in the participating countries waters are privately owned. Specifically, the project will help to stimulate private sector engagement along value and supply chains to manage bycatch and reduce discard impacts, working with both large-scale commercial fishing fleets as well as SSF and identifying new investment opportunities for responsible fisheries and marine conservation. It will also engage with the private sector through awareness-raising on approaches and technologies for sustainable fisheries (helping to de-risk private sector investment and finance).

The private sector will be instrumental in the delivery of each project component. Fishing companies will be directly involved in Component 1 through the co-design, piloting and adoption of bycatch mitigation approaches and technologies on vessels, and the piloting of gear marking (especially for gill and trawl nets) to tackle ALDFG. A small number (2-3) of potential private sector companies with vessels operating in the region have been provisionally identified as partners to test and refine the mitigation technology, based on their previous involvement in bycatch mitigation initiatives. In Suriname, for instance, most of the companies involved in industrial trawl fishing, have indicated their willingness to partner with the Fisheries Division (one such company is Marisa Fisheries). In partnership with these companies, a small number of industrial fishing vessels will also be fitted with innovative systems to improve MCS capacity and performance (this may include with experimental EMS, which will be examined during the PPG), and the private sector will also be co-partners in the design of strengthened fisheries policy, regulatory and management frameworks including improving key fisheries data collection and analysis (both under Component 2). Along with supporting measures to better manage bycatch and reduce discards, this will also engage the private sector in greater efforts to address IUU fishing and support wider adoption of EAF within the fisheries sector. The project also aims to facilitate increased private investment in Small-scale Fisheries (SSF) under Component 3, through improving value chains and associated business skills, and opportunities for alternative livelihoods and decent work. The private sector will also be engaged in project Knowledge Management and lesson learning activities (under Component 4) and the private sector represents a key focus for dissemination and upscaling of project results, through individual fisheries companies, trade bodies and fisher associations.

FAO will provide expertise on private sector engagement at the international and regional levels, and project partner WECAFC works closely with key industry organizations in the fisheries sector, so strong engagement of the private fisheries sector is expected. The project responds to the GEF's Private Sector Engagement Strategy (PSES<sup>[1]</sup>). In line with PSES guidance private sector stakeholders will be engaged through a variety of approaches and mechanisms, including:

- Targeting communication activities and channels to inform private sector parties of the GEF process, objectives of the IW focal area and entry points for the private sector;
- Providing guidance on potential private sector roles and support for the REBYC III CLME+ project based on identification of individual private sector company priorities and their alignment with (mapping to) the project objectives and GEF country and focal area priorities;
- Use of tailored private sector-specific workshops, consultations, and working groups to explore possible matching of their interests with those of the project, as well as direct capacity building with project staff (costs met through co-financing);
- Ensuring communication of private sector interest and engagement among the project partners;

- Sharing lessons learned from the project's experience with private sector engagement with partners and more widely (e.g. through IW:LEARN);
- Providing accurate and timely information for guidance documents, such as case studies;
- Exploring barriers to private sector involvement in the project and potential solutions to these (particularly during the PPG);
- Ensuring project representation and promotion of project results at key fishing industry fora held in the participating countries and wider CLME+ region, such as meetings of the regional fisheries bodies (WECAFC, CRFM and OSPESCA), and
- Arranging co-hosted project events with senior fisheries industry leadership.

The project will develop a Partnership and Stakeholder Engagement Strategy along with a Knowledge Management and Communications Strategy during the PPG phase, both of which will have a specific focus on the private sector, supporting effective engagement and communications with the private sector. The principle approaches to strengthen coordination with the private sector on the project will be through regular briefings to private sector partners by the project management unit staff, their representation on the Project Steering Committee, as well as direct interaction on key technical aspects of the project, such as the partnership with key fishing company vessels for the sea trials of bycatch mitigation technologies, discard reduction measures and responsible fishing practices.

It should be noted that the private sector fisheries industry operating in the CLME+ region is increasingly aware of, and acting on, the need for management for sustainable fisheries and adoption of responsible fisheries practices. Many of the larger private sector companies who were involved with the REBYC II LAC project follow the FAO Code of Conduct for Responsible Fisheries and have some form of Social, Environmental and Governance (ESG) policies and strategies. Some of these are interested in engaging with the REBYC III CLME+ project.

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[1] GEF/C.57/06 November 22, 2019



## 5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved or may be resulting from project implementation, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable). The table below shows the main risks to project results being delivered and achieving longer term impacts.

Risk	Impact/ probability rating (Low: 1 to High: 5)	Mitigation measures
Low commitment and engagement in project (poor political support, staffing, co-financing, and/or changed priorities due to adverse economic conditions) from key partners and government institutions responsible for fisheries management	Impact: 3 Probability: 2	The project has been designed to respond to, and directly supports, the priorities of WECAFC, CRFM and CARICOM and their member states participating in the project. The project will leverage existing coordinating and cross-cutting intergovernmental and transboundary mechanisms that govern these institutions to ensure participation remains strong. The project supports regional and national fisheries priorities addressing EAF, SSF and blue growth, including helping to strengthen capacity of the national fisheries authorities as well as the needs of local fishing communities and associations. As an example, the CLME+ SAP explicitly calls for actions to support sustainable fisheries in the region and countries are required to develop CLME+ National Action Plans, which the project can help deliver. The need to adopt EAF and move towards more sustainable fisheries, including reducing unwanted and incidental bycatch, particularly of ETP species, and address ALDFG, is well recognized in the region having had awareness raised on this issue through previous EAF and biodiversity conservation initiatives, including the REBYC-II LAC. In addition, FAO has extensive experience in working with many of the main project partners and there are FAO representations in each of the participating countries which will facilitate continued engagement in the project during implementation. Political buy-in will also be maintained through strategic and periodic awareness-raising and communication to key decision-makers including parliamentarians, and through carefully crafted messages to targeted audiences at the national level. The fact that two of the four participating countries (Suriname and Trinidad and Tobago) participated in the REBYC-II LAC project and requested a follow up project demonstrates good political interest. The establishment of the Project Steering Committee (PSC) during the project inception phase will also ensure participation, ownership and engagement of key partners and

		maintain attention on the project.
Low participation of local fishing communities, particularly the engagement of women, during the life of the project	Impact: 2 Probability: 2	Careful attention will be given to ensure involvement of relevant local stakeholders, including fisherfolk, at an early stage in the PPG phase and throughout the project implementation process. Special attention will be paid to ensuring that social and cultural barriers do not prevent women from effectively participating in the project. Specific activities and incentives are aimed at encouraging and supporting engagement, including promotion of fisheries co-management, a 'bottom-up' participatory approach and negotiated agreements, as well as demonstration of socio-economic benefits and use of trust-building and conflict resolutions mechanisms. Capacity building and training of local fishers will take place as much as possible to fit with their work calendar. Women tend to bear the bulk of household responsibilities, consequently project activities targeted specifically at women will be programmed to ensure they are not excluded due to any family commitments. The project will carry out a structured Knowledge Management programme and targeted awareness-raising campaign to increase public understanding and awareness of EAF benefits. In addition, an analysis of the performance of the REBYC-II LAC project during the COVID 19 pandemic will be undertaken to determine what lessons can be learned from delivering training/capacity building virtually or blended in the evenings. Key project personnel in each country will be identified to act as fishing community liaisons/contacts and similarly specific individuals within the communities (project 'champions') will be identified as focal points for the SSFs targeted by project.
Private sector is hesitant to engage or invest in sustainable fisheries management improvements, particularly to address bycatch and discards, and support additional data collection and enforcement (MCS), because of short-term financial interests and/or	Impact: 3 Probability: 2	Engagement and support by the private sector is important and will require dedicated attention by the project. Consequently, the project will engage private sector groups directly from early in project design. There is growing pressure (drivers) for the fishing sector regionally and globally to demonstrate sustainable fishing practices, which can command a premium on fish prices. The benefits of bycatch mitigation and opportunities from addressing excessive discards will be demonstrated to both large- and small-scale fisheries. Financial institutions providing funding for the fisheries sector will be engaged by the project to encourage their financing of sustainable fisheries and the risks from not doing so highlighted. For example, the recently completed GEF-financed Caribbean Billfish Project has successfully shown that if interventions are designed to specifically address and respond to the needs of the private sector, uptake and sustainable management improvements can be made in a very short period of time. This is particularly the case if those improvements lead to both fisheries conservation advances and increased efficiency and profitability. In addition, a small number of companies will provide vessels for piloting bycatch mitigation and MCS technologies and act as 'champions' in the private sector to promote the financial, social and environmental advantages to be gained from supporting moves to

ear of legal action		wards EAF. The project will identify financial and risk barriers to encourage market interventions, while also empowering fisherfolk (especially women and youths) with skills and financing to engage in entrepreneurial programmes. This combined bottom-up and top-down approach aims to make for a strong enabling environment for investors and the private sector generally.
Insufficient capacity to support the proposed transformational changes, particularly with regard to institutional and administrative support	Impact: 2 Probability: 2	The scope of the project has been agreed with the relevant stakeholders and, by focusing on a selected number of issues in a limited number of countries and locations, it will be possible to achieve results without putting undue pressure on the existing government institutions. Capacity building at both the individual and institutional levels is a central element of the project within each component and capacity needs will be identified and a capacity building strategy and plan will be developed during the PPG phase. In addition, project partnerships with non-governmental and academic institutions will also help cushion the impacts of any changes to changes in national policy and political administrations.
Large number and diversity of stakeholders constrain efficient coordination and implementation of the project's activities	Impact: 2 Probability: 2	Key stakeholders will actively support the project activities through the establishment of regional networks and partnerships. A project stakeholder engagement strategy and plan will be developed during the PPG to ensure effective, coherent stakeholder coordination. Addressing the issues of particular concern to stakeholders and demonstrating the socio-economic benefits will contribute to greater collective engagement among key stakeholders. The establishment of a Project Steering Committee during the PPG phase with appointment of National Project Committees and Focal Points, and project technical committees as appropriate during implementation will also support coordination and continued participation of the key partners. An effective Knowledge Management and Communication Strategy will also support stakeholder engagement and coordination.
Women may be less able to participate and benefit from the project due to their generally greater child-care and family responsibilities compared with men.	Impact: 2 Probability: 3	Special attention will be paid to ensuring that social and cultural barriers do not prevent women from effectively participating in the project. The project will focus on promoting participation of women; empowering them to engage 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. Project activities targeted specifically at women will be programmed to ensure they are not excluded due to any family commitments. Participation of women, but also of youth, will be promoted through multi-stakeholder workshops, consultation and validation processes used in project activities, and the employment of a gender officer within the project who will particularly focus on supporting women's engagement and enterprise opportunities
Difficulty in defining		

<p>...sustainable fisheries value chains results in ineffective project interventions with poor engagement of local fisher groups</p>	<p>Impact: 2 Probability: 3</p>	<p>Providing increased opportunities that benefit from better bycatch management and ways to address discards at the fishing community level is seen as important and the project has several approaches to address this. Specific value chains and opportunities to strengthen these will be identified early in the PPG and comprehensive training workshops and an information campaigns launched early in project implementation to ensure the buy-in necessary for a successful project intervention.</p>
<p>The current Covid-19 pandemic continues to have significant negative impacts on the ability of key stakeholders to engage with the project and deliver results (including delays, shortage of technical staff, reallocation of Government resources for other post Covid recovery measures with risk to project co-financing, etc), or adaptive management measures are not able to mitigate these impacts</p>	<p>Impact: 3 Probability: 2</p>	<p>The project's mitigation strategies to address the Covid-19 pandemic will be guided by both GEF and FAO policies and guidelines on operating during the pandemic, and lessons learned through execution of other projects in the CLME+ region during 2020-2021 period. In addition, the project's strategy of not overly relying on individual staff, but on institutions and organizations, and spreading capacity development within individual countries so that as many individuals are involved and trained as possible, will help address some of the potential loss and reallocation of partner staff due to Covid. The FAO Sub-regional office (FAOSLC) and national FAO Country Offices will closely monitor the Covid situation and risks, with regular discussions held with project partners. The project will employ an adaptive management approach where work plans are frequently reviewed and revised to take into account changing circumstances as needed. Other co-financing sources not dependent on public sector funding will also be identified during the PPG and implementation. In addition, meetings and workshops will be conducted virtually whenever feasible (within internet limitations), and as much as possible local resource persons will be engaged for interactions with communities (which will also help maintain local community buy-in and support dissemination of result). Key fishing community liaisons, who can participate in virtual meetings with the fisheries authorities and other stakeholders, will be identified in the relevant fishing communities and capacity building support offered to these individuals as required. It should also be noted that the project results can support opportunities to 'build back better', for example, through the adoption of more sustainable fishing practices, better utilization of bycatch, and livelihood enhancement.</p>
		<p>Although noticeable climatic changes and impacts, such as major shifts in distribution or migratory routes of fish species, are unlikely to occur over the four years of project implementation, climatic trends do need to be addressed and are a major concern of the project. The project will draw on the experience gained from several other on-going initiatives in the region that are addressing climate vulnerability and resilience in fisheries, including the FAO-GEF CC4Fish and "Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (CCA)" projects that are being undertaken in several Eastern Caribbean states. Furthermore, the FAO and CFRM have developed a Protocol on Climate Change Adaptation and Disaster Risk Management in Fish</p>

<p>Adverse effects of climate variability and climate-driven changes driven natural disasters (e.g. damages to infrastructure, ocean warming and changes to species abundance and distribution in the Caribbean) compromise the project's achievements, and in longer term impact fish operations</p>	<p>Impact: 4 Probability: 5</p>	<p>Under a Protocol on Climate Change Adaptation and Disaster Risk Management in Fisheries and Aquaculture in the Caribbean [44] that will inform the development and implementation of the project. An impact assessment (utilizing FAO technical expertise) of the impact of climate change on the target fishing communities and key stakeholder groups in the participating countries will be undertaken at the PPG stage.</p> <p>In the longer term, there are likely to be significant impacts on fish populations and therefore fisheries and their dependent fishing communities. For instance, populations of adult shrimp and groundfish could move further offshore to deeper areas to avoid warmer temperatures, which is likely to make access for fishers more difficult. Travel times to the fishing grounds will become longer, catches likely to decrease with lower catch per unit of effort (CPUE), resulting in declining productivity of a fishery and fishery-related incomes [28] making the fishery less economically viable. Similarly, populations of pelagic fish, including highly migratory species such as tuna, are likely to shift their distribution range polewards and thus become less abundant in the Caribbean over the medium-term and perhaps even leave the region altogether over the long-term.</p> <p>Although climate impacts on the target fisheries are likely to be limited during the period of the project, other climate impacts on the fishing communities and government agencies may also affect the project's delivery. For instance, government priorities may shift after a significant climate event, such as a hurricane, which can mean fewer resources for fisheries management (and hence project co-financing), as well as direct damage to government fisheries management structures, infrastructure and equipment (e.g. in Dominica, an entire building of fisheries division was destroyed, including computers, desks, printers etc). A detailed climate risk screening will be undertaken during the PPG phase.</p>
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## 6. Coordination

**Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.**

FAO will be the GEF Implementing Agency. The project's lead Executing Agency will be determined during the PPG. It will be responsible for managing the project, including day-to-day operations with national entities subcontracted to run activities at the national and local levels. FAO play an oversight role particularly with regard to project monitoring and reporting to GEF. FAO's Fishing Technology and Operations team (NFIFO) will particularly assist with aspects of project implementation, acting as the lead technical unit (with the FAO Lead Technical Officer embedded in the project team), to ensure the technical and economic feasibility of the measures introduced by the project, and to facilitate sharing of experiences with other regions.

A Project Management Unit, will be responsible for the regional-level project activities (project coordination, day-to-day project management, as well as Knowledge Management and lessons exchange and common capacity building activities). Project monitoring will be led by dedicated M&E staff, leveraging existing M&E mechanisms in the region, including continued alignment with national monitoring frameworks and the CLME+ SAP, and use of common monitoring indicators where possible. A project Mid-Term Review will provide an independent assessment on project progress after two years of implementation and an opportunity to adjust/improve project execution if required, supporting adaptive management.

The national fisheries authorities are expected to act as the national executing partners and focal point for national level activities, which will be carried out in close collaboration with the national fisherfolk organisations, as well as with other fisheries-related stakeholders. National project delivery will draw on experiences from the successful model employed by the REBYC-II LAC project with a National Project Coordinator (NPC) appointed by each national co-executing partner to lead their project execution and a multi-stakeholder National Working Group (NWG) to support the NPC and oversee the technical implementation of national project activities and work plans. However, different main executing agencies may have responsibility for individual project components in their country. The capacity of the executing partners to deliver the project effectively will be assessed at the PPG stage, and, where needed, targeted capacity building carried out during the first 3-6 period of project inception, including training on project management and financial reporting.

A Project Steering Committee (PSC) will be established to provide project oversight and support close coordination with other national and regional initiatives including other donor-funded (e.g. EU-funded) fisheries projects, while also offering a channel for scaling up project successes and lessons. The PSC will include representation from the national executing partners and key stakeholder groups listed above in the stakeholder section.

During the PPG phase, in-depth consultations will be undertaken to establish project management arrangements and partnerships and the practical modalities for linking, collaborating and communicating with on-going initiatives (many identified above), to explore the potential for joint activities and avoid duplication, and to ensure that GEFTF resources effectively build on the progress and achievements made to date through these other projects and initiatives. Preliminary discussions between the agencies involved have been held. The project executing agency (to be determined during the PPG) and the co-executing partners will collaborate with FAO to identify opportunities and mechanisms to facilitate synergies with other relevant GEF projects particularly the BE-CLME+, EAF4SG, and PROCARIBE+ projects, as well as other initiatives including the WWF (actively involved with initiatives towards bycatch reduction in Suriname), Caribbean Fisheries Training and Development Institute (CFTDI) based in Trinidad and Tobago, UWI-CERMES, University of Florida, and the UNEP-RCU. These strengthened regional and global linkages will help support future collaborative efforts to address responsible fisheries and sustain project results beyond the project period. An initial stakeholder engagement strategy and plan for collaboration with relevant on-going and planned initiatives will be prepared during the PPG phase, including defining the roles and responsibilities of critical partners and stakeholders.

As described in the baseline section above, the project design has been informed by a number of lessons learned from other projects and interventions, particularly by the results of the FAO-GEF REBYC-II LAC project and the findings and recommendations from its Terminal Evaluation. A deeper review of global experience of approaches to managing bycatch and reducing discards will be undertaken during the PPG phase with the identification of appropriate measures for the target fisheries which will be further refined during full project implementation.

## 7. Consistency with National Priorities

**Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?**

Yes

**If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc**

The project will help participating countries meet their responsibilities and commitments under numerous conventions and associated national strategies. The project directly addresses fisheries and marine conservation policies, plans and programmes supporting the implementation of current initiatives for sustainable use of marine resources as well as socio-economic development, including implementation of priorities in the CLME+ SAP and other international commitments of the target countries. More generally, it also supports the widely recognised need to further operationalise the EAF in the region.

At the national level, the institutional structures for fisheries management include fisheries and environmental ministerial functions and stakeholder associations. The policy and legal context in support of sustainable fisheries management is covered by a wide variety of instruments, including: parent Acts governing the access, use, and management of biological resources such as Acts covering Fisheries, Wildlife Protection, Protected Areas, Coastal Zone Management, Environmental Protection; regulations dealing with Species Protection, Marine Reserves; policies relating to National Fisheries, National Tourism, Integrated Coastal Zone Management; and planning documents concerned with Fisheries Management, Natural Resources Management, and Integrated Coastal Zone Management. Specifically, the project is consistent and fully in line with the following key national priorities and policies in the four participating countries (some of which are under review and have been delayed during to the Covid pandemic):

- In Barbados, the work of the Fisheries Division is guided by the Fisheries Act, Fisheries (Management) Regulations (1998), the Barbados' Fisheries Sector Management and Development Policy (2013) (the Act and the Regulations are being updated), and a draft Strategic Action Plan for the Local Fisheries Sector (under review) and focuses on protecting and strengthening the fishers' livelihood assets (natural, human, social, physical and financial), improving governance (structures and processes), creating an enabling environment to pursue sustainable livelihood and identifying measures to mitigate and recover from the impacts of vulnerabilities. A Fisheries Management Plan has also been drafted and is under review. The new policy, regulatory and management frameworks include elements related to bycatch;
- For Guyana, the Fisheries Act (Chap71:08) was gazetted on May 26 2018 and work on the Fisheries Products Regulation is ongoing;
- In Suriname, the fisheries policy is derived from the wider Agricultural Development Plan 2017-2021. The Suriname Fisheries Act is currently under revision with support of FAO and will incorporate EAF elements. An updated national Fisheries Management Plan (2021-2025), largely based on EAF principles (e.g. including precautionary management of fishing effort), was recently endorsed;
- In Trinidad and Tobago, the Fisheries Management Bill 2020 is at the Parliamentary review stage. There is need to develop Regulations and other subsidiary legislation to facilitate implementation of the new Act. Standard Operating Procedures (for inter-agency collaboration and for internal processes) for operationalisation of the laws still need to be drafted and implemented. In addition, a draft National Plan of Action for the Conservation and Management of Sharks (NPOA-Sharks) has been developed which is to be submitted for Cabinet's approval. An Integrated Fisheries Management Plan is under development and incorporates and updates all draft management plans including for shrimp trawl and hard substrate resources.

Although none of the four participating countries has a specific fisheries sector policy covering measures following recovery from the Covid pandemic, each country does focus on the need for economic recovery following the pandemic, and the fisheries sector (and associated sectors such as tourism in some cases) is seen as an important sector that can support recovery in these countries and to secure more sustainable food security. For instance, the 'Roadmap



for Trinidad and Tobago Post COVID-19 Pandemic' identifies the Agriculture Sector (which includes fisheries and aquaculture) as an essential service and adopts "policy positions to immediately and aggressively boost the agriculture sector and launch (TT)\$500 million Stimulus Programme for the Sector" in order to make Trinidad and Tobago a more food secure nation by "reducing the country's dependence on specific imported foods, increasing productive capacity and accessibility to domestic produce". Consequently, the REBYC-III CLME+ project will help to support national post-Covid recovery efforts.

The four participating countries are all signatories of the UNCBD and have developed National Biodiversity Strategies and Action Plans (NBSAP), all of which contain specific references to the government commitment to sustainable use of coastal and marine resources. The project is in line with these NBSAPs, each of which outlines fisheries and marine conservation as a high priority.

The countries participating in this project are signatories to numerous conventions and agreements at the global and regional levels related to environment and development. Those listed below are the most relevant for the adoption of EAF and sustainable fisheries management including promoting better management of bycatch and reduction of discards in the CLME+ region.

#### Global level

The 1982 United Nations Convention on the Law of the Sea (UNCLOS), sets out the legal framework within which all activities in the oceans and seas must be carried out, including fisheries activities, and it sets out the sovereign rights of coastal States for the purposes of exploring and exploiting, conserving and managing living resources within areas under national jurisdiction, as well as their duties with regard to the conservation and utilization of such resources. While it does not explicitly state the need for an ecosystem approach to fisheries (EAF), it is one of its underlying principles. Project Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, and 3.1 all support the target countries in meeting obligations under this agreement to sustainably manage living resources (including fisheries) within their jurisdiction.

The 1992 United Nations Convention on Biological Diversity (UNCBD) is a binding agreement that seeks to ensure the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. The 1995 Jakarta Mandate further develops the ecosystem approach adopted by the CBD. It encourages the use of integrated management of coastal areas as the most suitable framework for addressing human impacts on marine and coastal biological diversity and for promoting conservation and sustainable use of it. Project Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3 and 3.1 all support the target countries in meeting obligations under this agreement to ensure the conservation of biological diversity and the sustainable use of its components.

The FAO Code of Conduct for Responsible Fisheries (CCRF) [45] was adopted by FAO in October 1995 by 80 countries as a voluntary instrument to promote principles and international standards of behaviour for sustainable and responsible fishing and aquaculture on a global scale. It seeks to establish: (i) principles for responsible fishing and fisheries activities, taking into account all their relevant biological, technological, economic, social, environmental and commercial aspects; (ii) policies for the conservation of fisheries resources and fisheries management; (iii) fisheries for food security; (iv) facilitation of the legal and institutional framework for sustainable fisheries; (v) the protection of living aquatic resources and their environments; and (vi) the trade of fishery products. The CCRF calls on States to adopt measures to minimize catch of non-target species, waste, and discards that include, "to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques". In addition, it calls for the involvement of all stakeholders and emphasizes the need for a participatory approach in the decision-making process and calls for an ecosystem-based approach to fisheries management. National institutions have a key role to play as the CCRF can only be effectively achieved when governments incorporate their principles and goals into their national fishery policies and legislation [46]. The principles of the CCRF appear within national policies and plans to differing extents in the

CLME+ region, such as through Fisheries Management Plans, as well as the regionally binding Caribbean Community Common Fisheries Policy (CCCFP). Project Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3 and 3.1 all support the target countries in meeting obligations under this agreement with particular regard to Flag State duties, fishing operations and fishing gear selectivity.

Despite the CCRF, there is continuing concern internationally that levels of bycatch mortality from fishing threaten the long-term sustainability of many fisheries, the maintenance of biodiversity, and even food security in some areas. This has prompted the General Assembly of the United Nations and the FAO to reaffirm on several occasions the need for incidental mortality in fisheries to be responsibly managed and led to the development of the FAO International Guidelines for Bycatch Management and Reduction of Discards [47, 48]. These voluntary international guidelines aid States in implementing the CCRF and an ecosystem approach to fisheries through effective management of bycatch. The proposed project promotes the adoption of these guidelines. Project Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3 and 3.1 all support the target countries in meeting obligations under this agreement to promote responsible fisheries and minimize levels of bycatch and discards.

The 1995 Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995 UN Fish Stocks Agreement) is a legally binding agreement that complements the UNCLOS, and entered into force in 2001. The UNFSA aims to ensure that measures taken for the conservation and management of straddling fish stocks and highly migratory fish stocks in areas under national jurisdiction and in the adjacent high seas are compatible and coherent and that there are effective mechanisms for compliance and enforcement of those measures on the high seas. Project Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3 and 3.1 all support the target countries in meeting their obligations under this agreement by contributing to the conservation and management of straddling fish stocks and highly migratory fish stocks.

The 2001 International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) is a voluntary instrument developed within the framework of the CCRF. It seeks to prevent, deter and eliminate IUU fishing by providing States with comprehensive, effective and transparent measures by which to act, including appropriate regional fisheries management organisations. Essentially, it encourages countries to implement international fisheries instruments in their National Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (NPOA-IUU). National level activities to address IUU fishing vary across the CLME+ region. For instance, in Trinidad and Tobago an Action Plan to address IUU Fishing in the Ports and Waters under the Jurisdiction of Trinidad and Tobago has been developed and is being implemented under a Development Programme Project, whereas Suriname has no national plan of action for IUU. Outcomes 2.1, and particularly 2.3 support the target countries in meeting their obligations under this agreement to prevent, deter and eliminate IUU fishing.

The 2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate IUU Fishing (PSMA) aims to prevent IUU-caught fish from entering international markets through implementation of harmonized measures by countries and through regional fisheries management organizations (RFMOs) and focuses on IUU through implementing robust port state measures. It aims to enhance regional and international cooperation and block the flow of IUU-caught fish into national and international markets. Of the four participating countries in the project, Barbados, Guyana and Trinidad and Tobago are Parties to the agreement. Outcomes 2.1, and particularly 2.3 support the target countries in meeting their obligations under this agreement by improving overall levels on Monitoring Control and Surveillance (MCS) which is a vital component of risk assessment in determining where to target port inspection resources.

The 1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels, addresses the responsibilities of Flag States and seeks to stop vessels that are flagged by States that are not a member of a regional fisheries management organization (RFMO) from fishing in contravention with the conservation measures taken by the RFMO. Outcomes 2.1, 2.2 and 2.3 support the target countries in contributing to their obligations under this agreement by facilitating transposing of conservation measures into national legislation and related MCS activities required to monitor implementation.

The 2014 Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication<sup>[1]</sup> are complementary to the CCRF and seek to enhance the contribution of small-scale fisheries to global food security and nutrition. They seek to support responsible fisheries and sustainable social and economic development, with an emphasis on small-scale fishers and fish workers, including vulnerable and marginalized groups. Caribbean fisherfolk have been engaged in promoting and implementing the SSF Guidelines and have advocated for a protocol to incorporate them in the CCCFP. Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1 and 4.1 all support the target countries in meeting their obligations under this agreement by contributing to support responsible fisheries and sustainable social and economic development.

The project also responds to a recent report from the High Level Panel for a Sustainable Ocean Economy on the science-based priorities for post-Covid-19 recovery [17]. The project specifically addresses the call to 'invest in coastal and marine ecosystem restoration and protection'. More generally the project responds to all five 'areas of transformation' - ocean health, ocean wealth, ocean equity, ocean knowledge and ocean finance. It also contributes to the ambitions of the UN Decade of Ocean Science for Sustainable Development, as well as the UN Decade of Ecosystem Restoration (2021-2030). Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1 and 4.1 all support the target countries in meeting their obligations under this agreement by contributing to investment in coastal and marine ecosystem restoration and protection.

The Sustainable Development Goals (SDGs), were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. REBYC III project Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1 and 4.1 all support the target countries to meet obligations of several SDGs with particular regard to SDG14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development, target 14.1 to reduce marine pollution of all kinds, 14.2 to sustainably manage and protect marine and coastal ecosystems, and 14.4 to effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices

#### Regional agreements

The 2015-2025 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), which has been politically endorsed by over 23 States of the Caribbean region, constitutes a major driver fostering consistent and converging strategies and policies among regional and national institutions concerned by challenges to restore a better state of the Caribbean marine environment, including fishery resources, biodiversity, coastal habitats and reduced pollution. The project outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1 and 4.1 all support the CLME+ SAP aims to improve management of shared living marine resources and address unsustainable fisheries, habitat degradation and marine pollution (particularly strategy S6 but also S1, S2 and S5, and particularly sub-strategy 5B (Enhance the governance arrangements for implementing an ecosystem approach for large pelagics fisheries) through addressing unsustainable bycatch/discards and building capacity for MCS.

The Caribbean Regional Fisheries Mechanism (CRFM) Agreement is a legally binding agreement established in 2002 and seeks to establish a regional fisheries body to promote cooperation in the sustainable use and management of fisheries in the countries party to the Agreement. The region's priorities for fisheries development and management are further elaborated in the CRFM Strategic Plan (2013-2021). The basic objective is to achieve sustainable social, economic and nutritional benefits, while preserving the health and productivity of the fish stocks, the integrity of the marine ecosystems, and ensuring a better standard of living and quality of life for fishermen and fishing communities that rely on fisheries. The REBYC-III CLME+ project outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1 and 4.1 specifically address Strategic Goals 1 and 2 and is aligned to Strategic Objective C: Sustainable management of fisheries resources as the project supports adopting and implementing the EAF, and to Strategic Objective G (Capacity building and institutional strengthening) as the project has capacity building elements built into each component and is particularly relevant to organizational result G2 (Fisherfolk organizations and their representatives are competent and capable to collaborate and participate actively in fisheries management and conservation processes at local, national and regional level).

The 2014 Caribbean Community Common Fisheries Policy (CCCFP) is a regional treaty designed to help countries work together to ensure that the region's fisheries and other aquatic resources make a contribution to the region's development in a sustainable manner, and it calls for more scientific and market research, and attention to develop better and easier access to export markets, to support fishers and coastal communities and economic development. The CCCFP seeks to expand the data and information used in decision-making and resource management, enabling States and fishers to better protect their interests and manage the resources. The CRFM Strategic Plan (2013-2021) operationalizes the CRFM Agreement and CCCFP through goals and objectives that frame the workplan for the CRFM. Outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1 and 4.1 all support development of the regions fisheries in a sustainable manner.

All four participating countries are members of Western Central Atlantic Fishery Commission (WECAFC), and the project is aligned with WECAFC's Programme of Work as it relates to the following Technical Focus Area 1 (Improve regional fisheries governance), Area 2 (Increase regional information and collaboration in fisheries) and Area 3 (Strengthen regional fisheries management and best-practice approaches for fisheries and aquaculture development). The 2016 Interim Coordination Mechanism is a formal collaboration between WECAFC, OSPESCA and CRFM, which seeks to increase the uptake of information and fisheries management advice generated at national and sub-regional level to the regional level, support dissemination of best practices, improve harmonization and boost the impact of measures, decrees and regulations adopted within the frameworks of these RFBs. The three RFBs agreed to work on a number of priority areas such as the provision of advice in support of management of fisheries of spiny lobster, queen conch, shrimp and groundfish, recreational fisheries, flyingfish, FADs fisheries, sharks, spawning aggregations, and IUU fisheries. Joint Working Groups on these species and fisheries have been established in recent years, and the Coordination Mechanism has built on these initiatives, and relevant Working Groups will provide technical advice to the REBYC-III CLME+ project, thus contributing to project outcomes 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, and 3.1.

The International Commission for the Conservation of Atlantic Tunas (ICCAT) is an inter-governmental fishery organization responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and its adjacent seas. ICCAT regularly assesses between one and ten fish stocks and manages more than 50 fisheries. ICCAT has established a system for data collection for nominal annual catches, number of fishing vessels by size, gear and flag, catch and effort by area, gear, flag, species and month, actual size frequencies of fish, and catch-at-size data. ICCAT also encourages the provision of data on interactions with, and incidental catches of, seabirds and turtles. ICCAT has also adopted several measures to combat IUU fishing, including IUU vessel lists, transshipment regulations and port inspections. Barbados and Trinidad and Tobago are members of ICCAT and Guyana is a cooperating member of ICCAT. Outcomes 1.1, 1.2, 2.1, 2.2, 2.3, 3.1 and 4.1 all support Barbados and Trinidad and Tobago in meeting their obligations under this agreement and the same outcomes will support Guyana in becoming a full member of ICCAT by inter alia assisting Guyana to improve the fisheries sector data collection system (equipment and training at the local and institutional level) and support putting in place measures to reduce bycatch (e.g. through the use of circle hooks).

The Regional Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (RPOA-IUU) was developed with support from the GEF funded FAO CLME+ sub-project on shrimp and groundfish and endorsed by WECAFC in July 2019. IUU fishing is one of the critical challenges facing the region. The WECAFC RPOA-IUU is an important link between the implementation of the IPOA-IUU and the formulation of National Plans of Action to Prevent, Deter and Eliminate IUU fishing (NPOA-IUU) and corresponding measures to combat IUU fishing in WECAFC Member States. It has been developed in accordance with the principles and provisions of the IPOA-IUU, the PSMA and other complimentary international instruments. Outcomes 2.1, 2.2 and 2.3 support the target countries in contributing to improve their MCS framework thus contributing to addressing IUU fishing.

The Castries (St. Lucia) Declaration on IUU fishing, approved by the Ministerial Council of CRFM in 2010, is a voluntary declaration. It seeks to prevent, deter and eliminate IUU fishing by enhancing effectiveness of monitoring, control and surveillance at the national and regional level by creating and sustaining the necessary harmonized and contemporary legislative and regulatory regime. It complements the PSMA. Project Outcomes 2.1, 2.2 and 2.3 support the target countries in contributing to improve their MCS framework thus contributing to addressing IUU fishing and implementation of the PSMA.

The Cartagena Convention (1986) and its Protocol Concerning Specially Protected Areas and Wildlife (SPAW, 2000), which has been ratified by Barbados, Guyana and Trinidad and Tobago, is also relevant.

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[1] SSF Guidelines - <http://www.fao.org/3/a-i4356e.pdf>

## 8. Knowledge Management

**Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.**

Outline the “Knowledge Management Approach” for the project and how it will contribute to the project’s overall impact, including plans to learn from relevant projects, initiatives and evaluations.

Knowledge Management (KM) is an integral part of the project, essential for generating awareness, promoting learning and continuous improvement (linked to project M&E activities), generating content for up-scaling of project achievements, lessons and good practices, enabling institutional memory, and supporting stakeholder engagement on key issues such as ecosystem-based fisheries management in the Caribbean. Specific KM activities are included under Component 4 and will support capacity building and training actions under all the components. A core element of Component 4 will be the development of a KM Strategy and Plan (linked to the project’s Stakeholder Engagement Strategy and Plan), which will direct the project’s knowledge generation, lesson learning, information sharing, and awareness-raising activities with clear identification of roles and responsibilities, deliverables, resources and timing (what, how, when, who and with what resources). A broader dissemination of experience and lessons learnt generated by the project will be pursued through engaging national and regional technical and educational institutions, and regionally and internationally through South-South cooperation mechanisms.

The project will draw on a broad range of both innovative and established KM services and products provided by FAO. These will be available for the entire data cycle from data collection (e.g. locally adaptable SMARTForms /mobile apps for data collection, monitoring and reporting including on bycatch), data analytics, generation of statistics, and indicator dashboards (such as through the new FAO/NFI geospatial infrastructure, Reference data and Metadata management (EBX5, Ckan), and the Calipseo national statistical system), and publication and dissemination (e.g. new fact sheets engine on gear types). The utility of these for the project’s KM approach and practice along with other FAO corporate KM products will be explored more fully during the PPG phase.

Key elements of KM are document and publication management, and data persistence and re-use, which are also key for the project’s sustainability strategy. In relation to these, the project will draw on FAO capacity and experience with regional multi-topic on-line Atlases, such as the prototype Regional Database for WECAFC. These multi-tenant and metadata-driven atlases are designed to offer flexible, locally owned, secure, and spatially explicit KM. In addition, other relevant FAO specialized KM capacity, such as OpenASFA<sup>[1]</sup>, is already available in the region.

Online/virtual training and information exchange are expected to play a significant role in the project’s KM approach and will be supported through the creation of a dedicated digital project KM platform (part of the project website), linked to other relevant national, regional and global platforms, including existing FAO, WECAFC, CRFM, CARICOM and CLME+ websites. The project will also be able to draw on a broad range of innovative KM services provided by FAO to connect local data platforms to global data infrastructures, with a focus on data standardization and harmonization. This will ensure broad dissemination of knowledge on an ongoing basis and inform wider decision-making, including on effective bycatch management measures and capacity development for SFF. In addition, the FAO eLearning Academy will support the project’s remote learning activities. FAO is particularly well capacitated for this effort, with alignments to numerous fisheries management organizations globally. These formal and informal links, including the FIRMS partnership, provide a platform to discuss and design locally adapted KM services.

The project will be an active partner of IW:LEARN, LME:LEARN and the CLME+ HUB to further promote effective dissemination of knowledge, and will draw on the deep knowledge and experiences of these platforms, especially participating in exchanges on topics related to bycatch mitigation, EAF, SSF development, and marine conservation issues at the national and regional levels. The project will participate in IW:LEARN activities, including trainings, workshops, IWCs

(by the project management unit and ministerial representatives from each participating country) as well as contribute to GEF Experience Note/Results Note/Good Practice Brief and other relevant knowledge products during project implementation.

A minimum of 1% of the GEF IW grant financing will be ring-fenced to support participation in IW:LEARN activities, which will be identified by a specific budget line within the project budget (to be developed at the PPG stage and included in the Project Document). The project will be able to draw upon the experience and lessons learned from engagement in IW:LEARN by previous FAO-GEF project (e.g by REBYC II LAC project and GEF-5 Common Oceans ABNJ programme) to ensure effective and impactful delivery of knowledge products through IW:LEARN.

**[Footnotes]**

[1] The Aquatic Sciences and Fisheries Abstracts (ASFA) database is the premier reference in the field of fisheries, aquatic and marine sciences. It is produced under the auspices of the ASFA Partnership, a network that includes 4 United Nations sponsoring agencies and more than 50 international and national partners as well as further 45 collaborating institutions and the ASFA Publisher. FAO provides the Secretariat for the ASFA Partnership.

**9. Environmental and Social Safeguard (ESS) Risks**

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

**Overall Project/Program Risk Classification\***

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

**Measures to address identified risks and impacts**

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Two moderate environmental and social risks were identified during the development of the PIF, i.e. risks for youth work mostly as unpaid contributing family workers/lack access to decent jobs; and gender inequality in the labour market. For both risks, the project will develop a environmental and social risks analysis during the PPG phase. Moreover, the project will implement gender tailored action plan ensuring access to productive resources for all. Finally the project will tailor several actions supporting youth empowerment and fair employment.

#### Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
FAO ES Risk Certificate - REBYC III Project	



### 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 with this template).

Name	Position	Ministry	Date
Daphne Kellman	Permanent Secretary - GEF Operational Focal Point	MINISTRY OF ENVIRONMENT AND NATIONAL BEAUTIFICATION	8/26/2021
Kemraj Parsram	Executive Director - GEF Operational Focal Point	ENVIRONMENTAL PROTECTION AGENCY	8/16/2021
Ivette Pengel – Patterzon	Legal and Policy Advisor - GEF Operational Focal Point	MINISTRY OF SPATIAL PLANNING AND ENVIRONMENT	8/18/2021
Hayden Romano	Managing Director - GEF Operational Focal Point	ENVIRONMENTAL MANAGEMENT AUTHORITY	8/25/2021

## ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Coordinates

24°40' N, 89°45' W

01°00' S, 89°45' W

01°00' S, 45°04' W

24°40' N, 45°04' W

Within the CLME+ there are three main types of marine sub-ecosystems which support the region's most important fisheries and biodiversity [9]: the **coral reefs** and associated habitats, the **continental shelf**, and the **pelagic** sub-ecosystem (Figure A1). The extent of the coral reefs and associated habitats sub-ecosystem is defined by the location of coral reefs, mangrove forests and seagrass beds. In the NBSLME, this sub-ecosystem is dominated by mangroves. The continental shelf sub-ecosystem is approximately contained between the coastlines and the 200m isobath, and, in general terms, the pelagic sub-ecosystem is located beyond the 200m isobath.



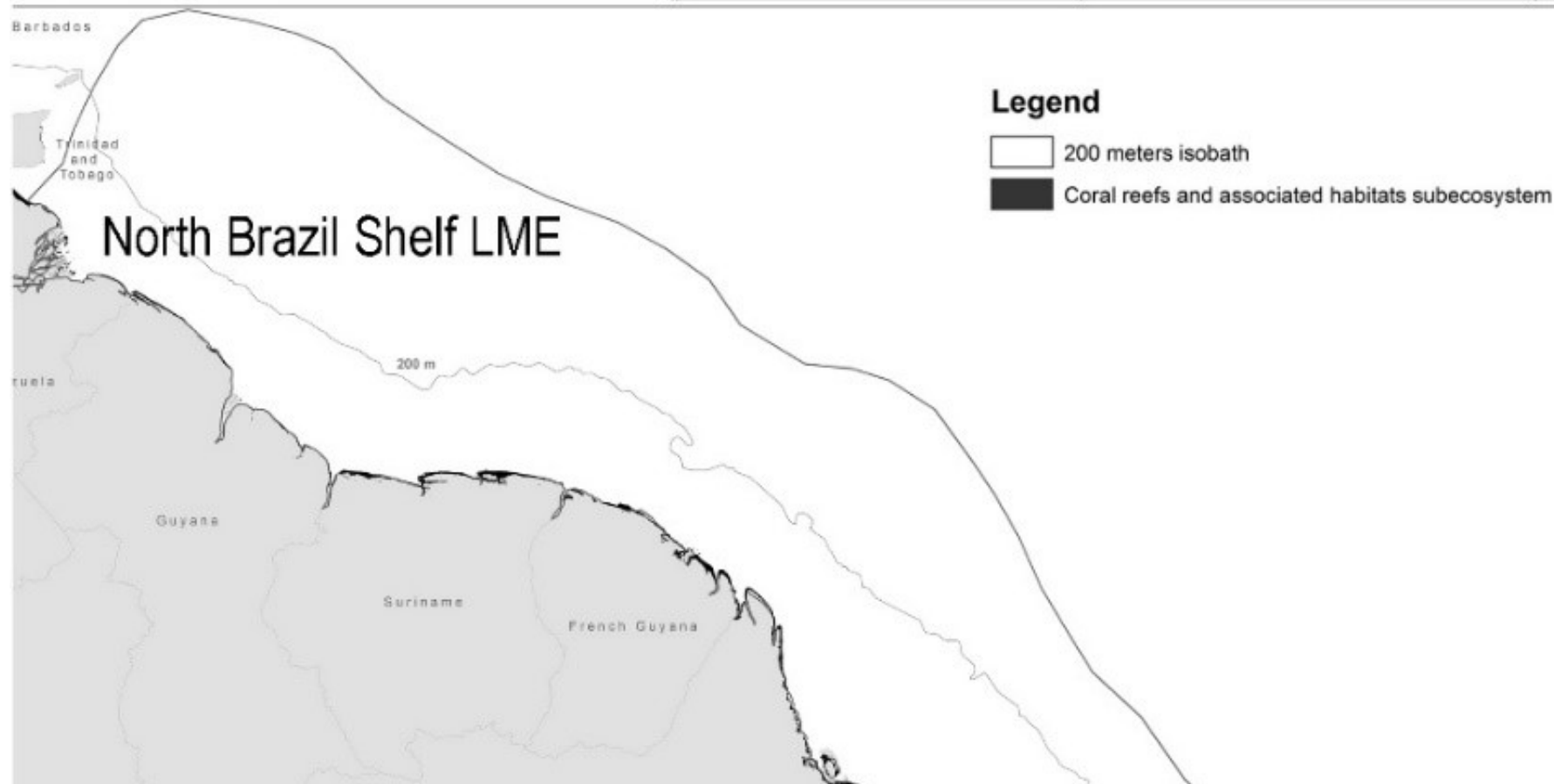




Figure A1. Approximate distributions of the 3 key sub-ecosystems in (a) the CLME and (b) the NBSLME. The 200 m isobath is an indication of the extent of the continental shelf sub-ecosystem. The coral reefs and associated habitats sub-ecosystem include habitats such as coral reefs, mangroves and sea grass beds. *Source: adapted from Dunn et al. [9].*

Caribbean reefs constitute 12% of the global coral reef area [49]. Besides their contributions to coastal protection, their biodiversity and associated amenity value for tourism, coral reefs and associated habitats sub-ecosystems in the CLME+ area are of great importance for fisheries [50]. Among the many species harvested, Caribbean spiny lobster and queen conch produce the highest revenue [50, 51]. Associated systems such as mangrove forests and sea grass beds provide important nursery grounds.

Many mobile species, from small coastal pelagic fishes to large coastal and oceanic species including tunas, sharks, turtles and marine mammals, spend part or all of their life-cycle within the pelagic sub-ecosystem. However, with overfishing and the decline of reef and inshore fisheries, pelagic resources have become a focus of fisheries expansion [52, 53]. Commercially targeted species include flyingfish, yellowfin and skipjack tuna, billfishes and dolphinfish. The pelagic sub-ecosystem in the CLME+ further supports important shipping services and contributes to global climate regulation. Within the CLME+ region, the continental shelf is most extensive in the Guianas–Brazil (NBSLME) sub-region (Figure A1) where it supports major shrimp and groundfish fisheries, including species of major commercial value such as red snapper and seabob shrimp [54].