

Terminal evaluation of the project “Sustainable management of bycatch in Latin America and Caribbean trawl fisheries” (REBYC-II LAC)

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Terminal evaluation of the project
“Sustainable management of bycatch in
Latin America and Caribbean trawl fisheries”
(REBYC-II LAC)

GCP/RLA/201/GFF
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Abstract

This report presents the results of the terminal evaluation of the regional project “Sustainable management of bycatch in Latin America and Caribbean trawl fisheries” (REBYC-II LAC project). The project was supported by GEF and implemented and executed by FAO from July 2015 to July 2021. The participating countries were Brazil, Colombia, Costa Rica, Mexico, Suriname, and Trinidad and Tobago.

Evaluation methods and tools to collect data and information included an evaluation matrix, desk reviews, virtual interviews with partners and stakeholders, and stakeholder surveys. Cancellation of in-person interviews and site visits because of the COVID-19 pandemic was a major limitation. Case studies were prepared by national consultants for Brazil, Colombia and Mexico, and incorporated in the main evaluation report.

The project is highly relevant to the countries, GEF and FAO. Nearly all the planned targets, outputs and outcomes were fully achieved, some expectations exceeded, and unintended, positive results realized. Notable results include strengthening regional collaboration, improving legal frameworks and co-management mechanisms; successful trials of bycatch reduction devices; and building capacity, including of women. Limited progress was made in identification of opportunities for enhanced livelihoods and integrating women in the management of the trawl sector. All the project countries performed satisfactorily. The Global Environment Objective (GEO) and the Project Development Objective (PDO) were partially achieved, reflecting the over-ambitiousness of the design. However, the enabling environment created, and the transformational results will contribute towards achievement of these objectives in the long-term. The project was efficient and cost-effective despite factors such as the long time for development of partnerships, cumbersome administrative processes, institutional and political changes in the countries, and the pandemic. Strategic partnerships and the high level of stakeholder engagement including the private sector contributed to successful delivery. There is high likelihood that results will be sustained and long-term impacts achieved but will require appropriate actions including addressing environmental, social, institutional and financial risks.

Recommendations include actions to be taken by the project partners and stakeholders to build on the project results to achieve sustainable, long-term impact; thematic areas for follow-up projects; more realistic project objectives and improvement in institutional arrangements and administrative procedures for future projects; sustaining partnerships; enhancing livelihoods and empowerment of women fish workers; and better communication and knowledge management.

The overall project evaluation rating is Highly Satisfactory.

Contents

Abstract	iii
Acknowledgements	vii
Abbreviations and acronyms	viii
Executive summary	ix
1. Introduction	1
1.1 Purpose of the evaluation	1
1.2 Intended users	1
1.3 Scope and objectives of the evaluation	3
1.4 Methodology.....	4
1.5 Limitations.....	6
2. Background and context of the project	1
2.1 Project information	1
2.2 Project context and framework.....	2
2.3 Theory of change.....	5
3. Key findings	11
3.1 Relevance	11
3.2 Effectiveness	13
3.3 Efficiency, project implementation and execution.....	23
3.4 Sustainability.....	30
3.5 Factors affecting performance.....	35
3.6 Cross-cutting issues.....	38
4. Lessons learned	43
5. Conclusions and recommendations	45
5.1 Conclusions	45
5.2 Recommendations	47
Bibliography	51
Appendix 1. People interviewed (main report)	53
Appendix 2. GEF evaluation criteria rating table	55
Appendix 3. Rating scheme	57
Appendix 4. Co-financing committed and realized by the end of the project	59
Appendix 5. Stakeholder analysis	61
Appendix 6. Key stakeholders in Suriname	64
Appendix 7. Key stakeholders in Trinidad and Tobago	65
Appendix 8. Evaluation matrix	66
Appendix 9. Questionnaire	72
Appendix 10. REBYC-II LAC project framework	73
Appendix 11. Status of planned project outputs in Components 1-3	74
Annexes	78

Boxes, figures and table

Boxes

Box 1. Evaluation questions by area of analysis.....	3
Box 2. Basic project information.....	2

Figures

Figure 1. Map showing the six participating countries in the REBYC-II LAC project.....	1
Figure 2. REBYC-II LAC project management structure	4
Figure 3. REBYC-II LAC project theory of change.....	6
Figure 4. Annual budget and expenses from 2015–2021.....	24

Table

Table 1. Number of persons interviewed and survey responses by country.....	5
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Abbreviations and acronyms

AUNAP	<i>Autoridad Nacional de Acuicultura y Pesca</i>
B&D	International Guidelines on Bycatch Management and Reduction of Discards
BRD	Bycatch reduction device
CCRF	FAO Code of Conduct for Responsible Fisheries
CERMES	Centre for Resource Management and Environmental Studies
CRFM	Caribbean Regional Fisheries Mechanism
EAF	Ecosystem approach to fisheries
FAO	Food and Agriculture Organization of the United Nations
FMP	Fisheries management plan
GEF	Global Environment Facility
GEO	Global Environment Objective
IFREMER	<i>Institut Français de Recherche pour l'Exploitation de la Mer</i>
INAPESCA	<i>Instituto Nacional de Pesca y Acuicultura</i>
INCOPESCA	<i>Instituto Costarricense de Pesca y Acuicultura</i>
INVEMAR	<i>Instituto de Investigaciones Marinas y Costeras</i>
M&E	Monitoring and evaluation
NGO	Non-governmental organization
NOAA	National Oceanic and Atmospheric Administration
OSPESCA	<i>Organización del Sector Pesquero y Acuícola del Istmo Centroamericano</i>
PDO	Project Development Objective
PSC	Project Steering Committee
REBYC-II LAC	Sustainable management of bycatch in Latin America and Caribbean trawl fisheries
REBYC-III CLME+	Strategies, technology and social solutions for the reduction of unwanted and incidental bycatch in tropical Large Marine Ecosystem Fisheries
SSF	Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication
TED	Turtle excluder device
WECAFC	Western Central Atlantic Fishery Commission

Executive summary

Introduction

1. The regional project “Sustainable management of bycatch in Latin America and Caribbean trawl fisheries” (hereinafter “REBYC-II LAC project” or “the project”) was implemented from July 2015 to July 2021 in Brazil, Colombia, Costa Rica, Mexico, Suriname, and Trinidad and Tobago. Financial support for the project amounted to USD 5.8 million from the Global Environment Facility (GEF) and over USD 19 million in co-financing. The Food and Agriculture Organization of the United Nations (FAO) served as the executing and implementing agency while the Western Central Atlantic Fishery Commission (WECAFC) and the national fisheries authorities of the six participating countries were among the project’s co-executing partners.
2. The FAO Office of Evaluation (OED) carried out the terminal evaluation of the project from February to August 2021, with the purpose of promoting i) accountability to GEF; and ii) learning, feedback and sharing of results and lessons learned among GEF and its partners. The terminal evaluation assessed i) project performance at the regional and national levels, ii) its results, their sustainability and transformational changes for sustainable shrimp trawl fisheries; and iii) shortcomings and good practices in project implementation. Some of the main intended users of the evaluation are the GEF, FAO, WECAFC, co-executing agencies and other project partners.

Methodology and limitations

3. The evaluation team was comprised of an international consultant (team leader) and three national consultants. The geographic coverage of the terminal evaluation is the regional level as well as the six project countries, with in-depth assessment of project implementation in Brazil, Colombia and Mexico. Evaluation criteria established by GEF and FAO were applied: Relevance, Effectiveness, Efficiency, Sustainability, Monitoring and Evaluation, and Stakeholder engagement. Each criterion was rated on a six-point scale from highly satisfactory to highly unsatisfactory. Other evaluation criteria were Environmental and social safeguards, Gender, Co-financing, Progress to impact, and Knowledge management.
4. Data and information from a variety of sources were collected through a combination of methods and tools, including an evaluation matrix with key questions, desk review, interviews with key informants, and stakeholder surveys. Cancellation of face-to-face interviews and site visits because of the COVID-19 pandemic was a major limitation. The evaluation team conducted virtual interviews using online videoconferencing platforms in addition to telephone and WhatsApp calls, all of which have inherent limitations. To triangulate the evidence, the evaluation team relied on the interviews, project results and documentation, and the project website as well as the national (Colombia and Mexico) and regional events held to disseminate the project results.

Main findings and conclusions

5. The main findings and conclusions for each evaluation criterion are as follows:

Relevance

6. The project has remained highly relevant to the development objectives of the participating countries regarding sustainable trawl fisheries, and to the objectives and priorities of FAO and GEF. Its importance to some of the countries has increased due to recent trawling bans and shrimp export embargos, lifting of which can potentially be supported by the project’s results related to

reduction of bycatch and discards. In addition, the drive by the countries to develop a blue economy has made the project even more relevant.

Effectiveness

7. Nearly all the planned project outputs and outcomes have been fully achieved, some expectations exceeded, and some unintended, positive results realized. Notable results include strengthening regional collaboration, improving legal and fisheries management frameworks and co-management mechanisms; successful trials of bycatch reduction devices; and strengthening stakeholder capacity in various areas. Limited progress was made in identification of opportunities for enhancing livelihoods and integrating women in the management of the trawl sector. Contributing factors included the limited capacity of the co-executing institutions to pursue enhanced livelihoods and the strong cultural traditions of fisheries in the countries, with the latter making fishers hesitant to adopt changes. All the countries performed satisfactorily although the level of achievement in some was higher, due in part to their greater institutional and technical capacity. The Global Environment Objective (GEO) and Project Development Objective (PDO) were only partially achieved reflecting the over-ambitiousness of the project design. Ultimately, these objectives cannot be achieved through only one project and gear modifications to reduce bycatch. However, the enabling environment created, and the transformational results obtained by the project will contribute to achievement of the GEO and PDO in the long-term. The participation of women, especially as project beneficiaries, is crucial for the achievement of the PDO, since women play an important role in the value chain and are highly dependent on trawl bycatch for livelihoods and food security.

Efficiency

8. Implementation was affected by factors such as the slow start of the project, time and effort to develop partnerships, institutional and political changes in some of the countries, and convoluted administrative rules and procedures within the countries and FAO. These had knock-on effects on implementation throughout the project duration in some of the countries although attempts were made to streamline certain processes. Momentum and performance improved following the mid-term evaluation. The delivery of nearly all its outputs, targets and outcomes, and even exceeding expectations in some cases – within budget and despite the challenges imposed by the pandemic and other circumstances – indicates an efficient and cost-effective project. Important contributing factors included the technical and administrative support provided by FAO and WECAFC throughout the project as well as the approaches adopted in project execution, such as extensive stakeholder engagement and participation, forging strategic partnerships, bottom-up approaches, and strengthening individual and institutional capacity.

Sustainability and progress to impacts

9. There is a high likelihood that project results will be sustained, due to the enabling conditions created and the transformational impact of the project. There is evidence of limited progress to impact at the pilot scale in some of the project sites. Addressing the environmental, social, institutional and financial risks to sustainability will require continued actions by the project partners. The socio-economic effects of the COVID-19 pandemic pose a substantial risk to achievement of the long-term impact.

Factors affecting performance

Monitoring and evaluation

10. The monitoring and evaluation (M&E) plan was practical and adequate. It was implemented in accordance with GEF and FAO requirements, and effectively used in adaptive management to support implementation.

Stakeholder engagement

11. One of the project's most transformational accomplishments is the high level of engagement of a diverse range of stakeholders. This was instrumental in helping the project adapt to the challenges encountered and its successful delivery. The co-finance realized attests to the high level of stakeholder buy-in for the project. However, stakeholder engagement, building trust and nurturing partnerships can be lengthy and demanding processes. This can reduce the available time of the Regional Project Coordinator (RPC) for coordination and technical backstopping, in the absence of a dedicated expert to manage stakeholder engagement and partnerships.

Environmental and social safeguards

12. Social safeguards are embedded in the project's design, as articulated in the PDO, ecosystem approach to fisheries (EAF) principles, and the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines). Environmental safeguards are embedded in the project GEO, with one of its principal aims to reduce and mitigate the risks to biodiversity and benthic habitats from harmful trawl fishing practices. However, reducing bycatch can have adverse consequences for individuals who are dependent on bycatch for livelihoods and food security.

Gender

13. The project has contributed to elevating the visibility of women and improving the understanding of their role in the value chain and strengthening their capacity for enhanced livelihoods. However, further efforts are needed to empower women for participation in the value chain and the management of the trawl sector.

Knowledge management

14. Inadequate provisions for knowledge management/communication including the hiring of an appropriate expert and the lack of a knowledge management/communication strategy constrained the production of appropriate knowledge management products and their effective dissemination in the first half of the project, especially to local communities and decision makers. 'Cross-fertilization' and sharing of lessons and experiences among the national project teams were also limited. Efforts by the knowledge management consultant, who was hired in the final year of implementation, and project partners to produce and disseminate a range of knowledge management products tailored to different groups of stakeholders are crucial in promoting the uptake of project results.

Co-finance

15. Co-finance realized at the time of the terminal evaluation exceeded the amount pledged at CEO endorsement by nearly USD 750 000. This includes a high level of cash co-finance and unanticipated contributions from some institutional partners and the fisheries private sector.

Recommendations

16. The following recommendations provide guidance for activities to sustain the results of the REBYC-II LAC project, and to improve similar FAO/ GEF projects in the future.

Recommendation 1. To FAO, project countries and co-executing partners of REBYC-II LAC. Within one to two years after project closure, implement actions to promote sustainability and the achievement of the long-term impact, including sharing results with stakeholders; upscaling and mainstreaming results; maintaining partnerships; accelerating the endorsement and implementation of pending legislation and management plans; continuing to build capacity for implementation of EAF; commercialization of the new value added products; and continuing to build trust among stakeholders.

Recommendation 2. To FAO GEF Coordination Unit, FAO Technical Divisions, and GEF. To improve the design and implementation of future projects, the following are recommended:

Project design/follow on projects

- i. Set more realistic GEO and PDO.
- ii. Incorporate other measures and gear modifications for minimizing trawling impacts on benthic habitats and marine organisms.
- iii. Place more focus on gender and livelihoods, private sector engagement/co-management, incentives for adoption of alternative fishing gear, and differences between small-scale and large-scale trawl fisheries in the design of bycatch reduction strategies and other management measures.
- iv. Align the follow-up project (REBYC-III CLME+) with other planned regional projects to avoid duplication and build synergies; and minimize the time lag in the start of new projects.

Institutional arrangements and administration

- i. Consider institutional arrangements for execution in which a technical or academic institute with the required competence is designated to work alongside the government co-executing agency.
- ii. Promote South-South cooperation between the appropriate countries such as those with high capacity and those with low capacity in specific thematic areas.
- iii. Continue to streamline and harmonize administrative and operational mechanisms at the various levels at which the project operates.

Stakeholder engagement and partnerships

- i. Develop and implement a stakeholder engagement plan and allow adequate time at project start for stakeholder engagement, establishment of partnerships, institutional strengthening, and fostering trust among stakeholders.
- ii. Adopt operational modalities that may be more efficient, such as Operational Partners Agreements (OPA) instead of Letters of Agreement (LOAs).
- iii. Appoint a dedicated consultant to manage stakeholder engagement and partnerships.
- iv. Make provisions in the project budget for incentives to increase participation by local communities, especially women.

Recommendation 3. To Participating countries, FAO GEF Coordination Unit, and GEF. Continue initiatives for enhanced livelihoods and empowerment of women fish workers under follow-up projects and programmes; and involve the appropriate government agencies and institutions with the relevant expertise related to gender and livelihoods in the design and implementation of these initiatives.

Recommendation 4. To FAO GEF Coordination Unit. Develop an appropriate risk management plan with an adequate budget and incorporate flexibility in the design of new projects to mitigate the potential

impacts of any delays in project start up, or unexpected political and institutional changes in the participating countries or co-executing agencies.

Recommendation 5. To FAO GEF Coordination Unit and GEF. Make adequate provisions in the project budget for communication and knowledge management throughout project implementation, including:

- i. Hiring of a dedicated project communication/knowledge management expert from the start and engaging local communication/knowledge management experts and local 'champions' for communication with local communities.
- ii. Preparation of a communication/knowledge management strategy at the start.
- iii. Production and dissemination of knowledge management products that are targeted for key stakeholder groups.

GEF criteria ratings table

Criteria	Rating
1) RELEVANCE	
Overall relevance of the project	HS
2) EFFECTIVENESS	
Overall assessment of project results	HS
Outcome 1.1. Strengthened regional collaboration	HS
Outcome 1.2. Improved legal and institutional frameworks	HS
Outcome 2.1. Co-management of shrimp fisheries through EAF	HS
Outcome 2.2. Enabling environment including incentives and promoting responsible trawl practices	S
Outcome 3.1. Enhanced sustainable and diverse livelihoods created and gender equality promoted	MS
3) EFFICIENCY, PROJECT IMPLEMENTATION AND EXECUTION	
Overall quality of project implementation and adaptive management (implementing agency)	S
Quality of execution (executing agencies)	S
Efficiency (including cost effectiveness and timeliness)	S
4) SUSTAINABILITY	
Overall sustainability	ML
Environmental sustainability	ML
Social sustainability	ML
Institutional sustainability	ML
Financial sustainability	ML
5) FACTORS AFFECTING PERFORMANCE	
Overall quality of stakeholder engagement	HS
Overall quality of M&E	S
M&E design at project start up	S
M&E plan implementation	HS
OVERALL PROJECT RATING	HS

1. Introduction

17. This report presents the findings of the terminal evaluation of the Global Environment Facility (GEF) regional project “Sustainable management of bycatch in Latin America and Caribbean trawl fisheries” (hereinafter “REBYC-II LAC project” or “the project”), GCP /RLA/201/GFF. The Food and Agriculture Organization of the United Nations (FAO) has the dual role of the project’s executing and implementing agency. In accordance with GEF and FAO requirements, the FAO Office of Evaluation (OED) carried out a mid-term evaluation from October 2018 to June 2019, and in February 2021 initiated the terminal evaluation, which was completed in August 2021. The terminal evaluation report incorporates material from the country study reports prepared by the national consultants for the terminal evaluation focus countries (Brazil, Colombia, and Mexico), presented in Annexes 1-3.

1.1 Purpose of the evaluation

18. The terminal evaluation, which is required by the GEF and FAO and provided for in the Project Document, has a dual purpose to:
- i. Promote accountability to the main donor (GEF) for the achievement of GEF objectives, through the assessment of results and their contribution to global environmental benefits, effectiveness and processes, as well as the performance of the partners involved in the GEF-financed activities.
 - ii. Promote learning, feedback and knowledge sharing on results and lessons learned among GEF and its partners as a basis for decision-making on projects, programmes, programme management, policies and strategies; and to improve performance. In the process of assessing the achievement of results, their impact and the contribution to the project objectives, measures will be identified to consolidate the sustainability of the results of the project itself and, in turn, highlight main lessons learned from project implementation to inform future decision-making by FAO and the GEF.
19. The terminal evaluation also serves to inform regional bodies and national governmental actors and counterparts in the execution of the project on its performance. The main purposes and intended users of the evaluation are presented in Box 1 in the evaluation terms of reference (TOR).
20. The evaluation’s specific objectives are to: i) assess the results achieved by the project during the period of its implementation and the extent to which these results contributed to the project objectives; ii) assess the sustainability of the project intervention and its potential impact, if any, in the long-term; and iii) identify lessons learned from project design, implementation and management. The evaluation also provides recommendations targeted to the GEF, FAO, government co-executing agencies in the participating countries, and other project partners.

1.2 Intended users

21. The intended users of the terminal evaluation report are the key stakeholders who were involved in the project as donors, implementing and executing agencies, partners and beneficiaries. A stakeholder analysis (regional level) was conducted during the inception phase and is included in the terminal evaluation inception report (see Appendix 5). In addition, detailed stakeholder analyses in Brazil, Colombia, Costa Rica and Mexico are included in the inception report and the study reports for the three focus countries – Brazil, Colombia and Mexico (Annexes 1-3). The key stakeholders in Suriname and Trinidad and Tobago are listed in Appendix 6 and Appendix 7,

respectively. These lists were used in the selection of terminal evaluation interviewees and survey respondents.

22. Some of the key stakeholders are:

- i. **International organizations:** FAO; GEF; World Wide Fund for Nature (WWF).
- ii. National fisheries authorities and REBYC-II LAC co-executing partners:
 - Brazil: Secretariat of Aquaculture and Fisheries of the Ministry of Agriculture, Livestock and Supply (SAP/MAPA).
 - Colombia: Instituto de Investigaciones Marinas y Costeras (INVEMAR), and Autoridad Nacional de Acuicultura y Pesca (AUNAP).
 - Costa Rica: Instituto Costarricense de Pesca y Acuicultura (INCOPESCA).
 - Mexico: Instituto Nacional de Pesca y Acuicultura (INAPESCA), Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SAGARPA; now Secretaría de Agricultura y Desarrollo Rural, SADER).
 - Suriname: Ministry of Agriculture, Animal Husbandry and Fisheries.
 - Trinidad and Tobago: Fisheries Division of the Ministry of Agriculture, Land and Fisheries.
- iii. **Civil society organizations (CSO), private sector and local communities:** Fishers and fish workers in both small-scale and semi-industrial fisheries (in the Atlantic Ocean/Caribbean Sea and Pacific Ocean) and related enterprises, who are among the key beneficiaries. Important groups of stakeholders within the local fishing communities are women, who are heavily involved in the post-harvest sector, as well as indigenous and afro-descendant communities who are dependent on the fisheries sector for food and livelihoods.
- iv. **Regional and subregional intergovernmental organizations:** Key regional fisheries bodies (RFB) are the Western Central Atlantic Fishery Commission (WECAFC), Caribbean Regional Fisheries Mechanism (CRFM), and the *Organización del sector pesquero y acuícola del Istmo Centroamericano* (OSPESCA).
- v. **Universities and research institutes:** Among these, the Centre for Resource Management and Environmental Studies (CERMES) of the University of the West Indies (UWI), which provided inputs into project design, in particular with regard to the livelihoods and gender aspects of Component 3; Saint Mary's University (Canada) and the International Community Conservation Research Network (CCRN), concerning interactions of fishery conservation initiatives, fishing community livelihoods and policy aspects; and Duke University. At the national level, several relevant universities and research institutes collaborated with executing partners to provide technical and scientific support. Researchers from the Government of the United States of America National Oceanic and Atmospheric Administration (NOAA) Fisheries Harvesting Systems Unit (based in Pascagoula, Mississippi), assisted with the identification and development of bycatch reduction devices (BRD).

1.3 Scope and objectives of the evaluation

23. The terminal evaluation covers the entire project implementation period from its inception in July 2015 to the end of July 2021 when the technical activities were completed. It also assessed the project design, implementation, and achievement of outputs and objectives. The evaluation assessed i) project performance considering both its regional and national dimensions; ii) its results, their sustainability and any transformational changes that occurred in the enabling environment for sustainable shrimp trawling fisheries; iii) shortcomings and good practices of the project implementation.
24. The geographic coverage of the terminal evaluation extends to all six project countries as well as activities at the regional level. However, Brazil, Colombia and Mexico were selected for in-depth assessments based on the likelihood presented by the project implementation and the specific features of the shrimp trawl fisheries to generate case studies and important lessons learned that will be useful for other countries in the region. National consultants conducted in-depth assessments and prepared country reports for Brazil, Colombia and Mexico (Annex 1-3), while the lead consultant was responsible for the assessment of the project at the programmatic and regional levels as well as for Suriname, and Trinidad and Tobago.
25. The list of main evaluation questions is presented in Box 1.

Box 1. Evaluation questions by area of analysis

Areas of analysis (criteria)	Main questions
Relevance	To what extent is the project relevant to countries priorities, and GEF and FAO priorities and strategic objectives and programmes?
Achievement of project results	To what extent has the project contributed to the achievement of stated environmental and development objectives? Were intended results achieved as expected and were there any unintended results?
Efficiency, project implementation and execution	To what extent has the project been implemented efficiently and cost-effectively and was able to adapt to changing conditions?
Sustainability	What is the likelihood that the project results will continue to be useful or will remain after the end of the project? What process has the project generated or supported that ensure sustainability? What are the key risks that may affect the sustainability of the project benefits?
Progress to Impact	To what extent may the progress towards long-term impact be attributed to the project?
M&E	Monitoring and evaluation (M&E) design: Was the M&E plan practical and sufficient? M&E implementation: Did the M&E system operate as per the M&E plan? Was the information from the M&E system appropriately used to make timely decisions and foster learning during project implementation?
Stakeholder engagement	To what extent were actors, such as civil society, indigenous population or local communities and private sector involved in project design or implementation, and what was the effect on the project results?
Environmental and social safeguards	To what extent were environmental and social concerns taken into consideration in project design and implementation? Has the project had any unintended, adverse environmental and social consequences?
Gender	To what extent was gender taken into account in designing and implementing the project? Was the project implemented in a manner that ensures gender equitable participation and benefits as well as women empowerment?
Knowledge management	How is the project documenting and sharing its results, lessons learned and experiences, and is this adequate? Are communication and knowledge products targeted to different audiences?
Co-financing	To what extent did the expected co-financing materialize, and how did shortfall in co-financing, or materialization of greater than expected co-financing affect project results?

1.4 Methodology

1.4.1 Approach

26. The evaluation adhered to the United Nation Evaluation Group (UNEG) Norms and Standards and is in line with the Office of Evaluation (OED) Evaluation Manual and methodological guidelines and practices. It adopted a consultative and transparent approach with internal and external stakeholders throughout the evaluation process. Findings and judgements are based on sound evidence, which was triangulated as far as possible.
27. The evaluation methodology integrates the GEF evaluation criteria (relevance, effectiveness, efficiency, including project implementation and execution, sustainability, and factors affecting performance, among others) and requirements to facilitate comparison with the reports produced by the GEF and to contribute to the GEF programme selection process aimed at identifying and prioritizing among potential projects for GEF support. In this respect, the evaluation presents an assessment of each of the GEF criteria using the qualification scheme or ratings (Appendix 3) and a series of associated evaluation questions.

1.4.2 Data collection methods and tools

28. Primary and secondary data to answer the evaluation questions were collected using the following methods and sources:
 - i. **Desk review.** Document reviewed included i) background reports and documents such as the project design document and related country reports; ii) annual work plans and budgets, annual project implementation report (PIR) reports, semi-annual project progress reports (PPR), country monitoring matrices, and the mid-term evaluation report; iii) technical reports produced by the project; iv) reports of FAO support missions; and v) Letters of Agreement (LOA) and budgets. The list of documents reviewed and consulted is presented in the Bibliography.
 - ii. **Semi-structured interviews.** Because of the COVID-19 pandemic, interviews were conducted remotely¹ (using interview protocols developed by the evaluation team) with key informants including public and private sector stakeholders and participants at the regional, national and local levels. The number of persons interviewed in each country (and by location for Brazil, Colombia, Costa Rica, and Mexico) is shown in Table 1. An effort was made to ensure that a representative cross-section of stakeholders was consulted. Special attention was paid to adequately engage women, and where applicable, indigenous groups and disadvantaged groups. The names of persons interviewed are listed in Appendix 1.
 - iii. **Focus group discussions.** These were held remotely (using appropriate protocols) with project participants and stakeholders, including local communities involved in the artisanal fishery.
 - iv. **Surveys** of key stakeholders who were not interviewed were conducted online, and in the case of local communities, assistance was provided by national partners in the completion of a simple questionnaire (Appendix 9), which was translated into the appropriate languages. The number of questionnaires distributed, and responses

¹ Using regular telephone and online platforms such as Skype, Zoom, and MS Teams.

received in each country (and by location for Brazil, Colombia, Costa Rica, and Mexico) is shown in Table 1.

Table 1. Number of persons interviewed and survey responses by country

Country	Location	Number of persons interviewed	Number of questionnaires distributed	Number of responses
BRAZIL	North Subregion (Amazon continental shelf and northern part of Northeast subregion)	3	11	2
	Northeast Subregion	15	35	16
	Central Subregion	19	27	19
	Southeast Subregion	12		
	South Subregion	11		
	Southeast/South Subregion	3	51	26
	Not indicated		7	7
	TOTAL	63	131	70
COLOMBIA	Santa Marta (Caribbean)	2		
	Salamanca Gulf (Caribbean)	1		
	Cartagena Port (Caribbean)	1		
	Bahia Solano (Pacific Ocean)	1		
	Buenaventura Port (Pacific Ocean)	6		
	Cali (Pacific Ocean)	2		
	Santa Barbara de Iscuandé (Pacific Ocean)	1		
	Bogota	8		
		TOTAL	22	None
COSTA RICA	Punta Arenas Port (Pacific Ocean)	4		
	San Jose	8		
	Barra de los Colorados (Caribbean)	3		
	Golfo Dulce and surroundings	1		
	TOTAL	16	None	
MEXICO	Campeche	22	19	9
SURINAME	NA	10		9*
TRINIDAD & TOBAGO	NA	16	Unknown	7**
*Questionnaire administered via telephone by FAO Consultant				
**Questionnaire distributed by Fisheries Division staff at a workshop. Number distributed unknown				

1.4.3 Evaluation matrix

29. The evaluation report is structured around key evaluation questions corresponding to each of the evaluation criteria. To answer the key questions, an evaluation matrix was developed and included in the inception report (Appendix 9). The matrix presents sub-questions, with related indicators and means of verification. Evaluation matrices capturing specific features of project implementation at country level are included in the focus country reports (Annexes 1-3).

1.5 Limitations

30. The major limitation to the evaluation was presented by the COVID-19 pandemic and associated travel restrictions and human health risks. As a result, the evaluation team was unable to hold face-to-face interviews with stakeholders, to visit the project sites and see the tested gears and BRDs or meet with local communities. This limited the data collection and potentially the triangulation of evidence.
31. As a mitigation measure, virtual interviews were conducted using online videoconferencing platforms (principally Zoom) in addition to telephone and WhatsApp calls. Virtual (including telephone) interviews have certain potential drawbacks, including poor connectivity making communication difficult or impossible and prolonging the interview time interviewees' unease with virtual interviews including being "on camera" or being recorded, and the potential for the evaluator to miss certain nuances that are better discerned in in-person interviews. A questionnaire was prepared and distributed to stakeholders in the participating countries in the national languages (Appendix 9). Limitations associated with the use of the surveys stemmed from the low response rate and the inadequate level of detail provided in the responses as well as the difficulty in obtaining clarifications and additional information from the respondents. Where local stakeholders at the project sites were difficult to reach by virtual means, the country teams assisted in obtaining inputs from some individuals through telephone and the survey.
32. To triangulate the evidence, the evaluation team relied on the interviews that were conducted, project results and documentation, and the project website as well as the national (Colombia and Mexico) and regional events held to disseminate the project results. The evaluation team considers that the limitations did not affect the quality of the terminal evaluation since ample information was available through the various other sources.

2. Background and context of the project

2.1 Project information

33. The REBYC-II LAC project, which had a duration of six years, became operational in July 2015 and officially closed in September 2021. Of the total committed budget of USD 22 998 491, USD 5 800 000 were financed by the GEF, with the remainder represented by the co-financing (cash and in-kind) committed by the REBYC-II LAC project partners and other national counterparts. The project was implemented in six countries: Brazil, Colombia, Costa Rica, Mexico, Suriname, and Trinidad and Tobago (Figure 1). FAO was both the executing and implementing agency for the project. Through annual Letters of Agreement issued for each participating country, the national fisheries entities have been co-executing partners directly involved in project implementation, under the coordination of the WECAFC.

Figure 1. Map showing the six participating countries in the REBYC-II LAC project



Source: MapChart, from mid-term evaluation report. Map conforms to UN. 2019. [Map No. 3977, Rev. 6](#). A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

34. The mid-term evaluation found that performance varied among the countries, and some results have been obtained that were contributing to the creation of an enabling environment for sustainable shrimp trawl fisheries in the countries. Further, the mid-term evaluation highlighted areas for improvement and recommended relevant actions to improve implementation. The

implementation of specific mid-term evaluation recommendations on project performance are discussed throughout Section 3 (Findings).

35. Basic information on the REBYC-II LAC project is provided in Box 2.

Box 2. Basic project information

- GEF Project ID Number: 621538
- Recipient countries: Brazil, Colombia, Costa Rica, Mexico, Suriname, and Trinidad and Tobago
- Implementing agency: FAO
- Executing agency: FAO
- GEF Focal Area: International Waters (IW)
- GEF Strategy/operational programme: GEF5 IW Objective 2: "Catalyse multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and large marine ecosystems (LME) while considering climatic variability and change."
- PIF approved: 24 April 2013
- Date of CEO endorsement: 4 March 2015
- Date of PPRC endorsement: 23 March 2015
- Date of project start: 22 July 2015
- Initial date of project completion (original NTE): February 2020
- Revised project implementation end date: 30 September 2021 (no-cost extension)
- Date of mid-term evaluation: September 2019 (report finalization)

2.2 Project context and framework

36. The six countries participating in the REBYC-II LAC project share marine areas and marine resources in the Pacific and Atlantic Oceans. Spanning a considerable area, there is great diversity in marine resources and fisheries in the project region. While only Suriname shows an important contribution of fisheries to national gross domestic product, shrimp/bottom trawl fisheries constitute an important part of the total marine fisheries economy in the project countries, contributing to employment, local incomes, food security and foreign exchange earnings.
37. Tropical and subtropical shrimp/bottom trawl fisheries are highly multispecies and produce significant quantities of bycatch and discards. The quantity of bycatch can amount to 10-15 times more than the quantity of the targeted (shrimp) catch. This bycatch is composed mainly of juveniles of targeted species of other fisheries as well as of non-targeted species, small-sized fish species, and endangered marine turtles and other endangered species including elasmobranchs. In all the project countries, bycatch contributes to food security, nutrition and income for local communities. However, when bycatch is discarded or if catches are unsustainable, it represents a substantial loss – to people and to the global and regional environment. Another concern is the destruction of sensitive seabed habitats by bottom trawling.
38. In general, shrimp and other key target species in the project countries are overexploited. Because of generally decreasing catches and increasing costs of operation, many fishers find it difficult to maintain the profitability of their operations. There is a general recognition of the need to improve shrimp/bottom trawl fisheries and bycatch management in the Latin America and Caribbean (LAC)

region, as recognized in the "Puntarenas Declaration"² which: i) expressed the growing concern of the impact of bycatch and discards on the sustainability of fisheries, maintenance of marine biodiversity, and food security in the LAC region; and ii) demanded a call for support of a regional programme aimed at mitigating problems associated with bycatch and discards. During project development, the major barriers to effective shrimp/bottom trawl fisheries and bycatch management, responsible practices and sustainable livelihoods in the region and the countries were identified as: insufficient regional collaboration, inadequate institutional and regulatory frameworks at the national level, lack of relevant information on bycatch and discards, lack of knowledge on adoption of suitable solutions and management measures, and insufficient capacity and knowledge to promote enhanced livelihoods for men and women. The REBYC-II LAC project aimed to address these barriers through four components, as described below.

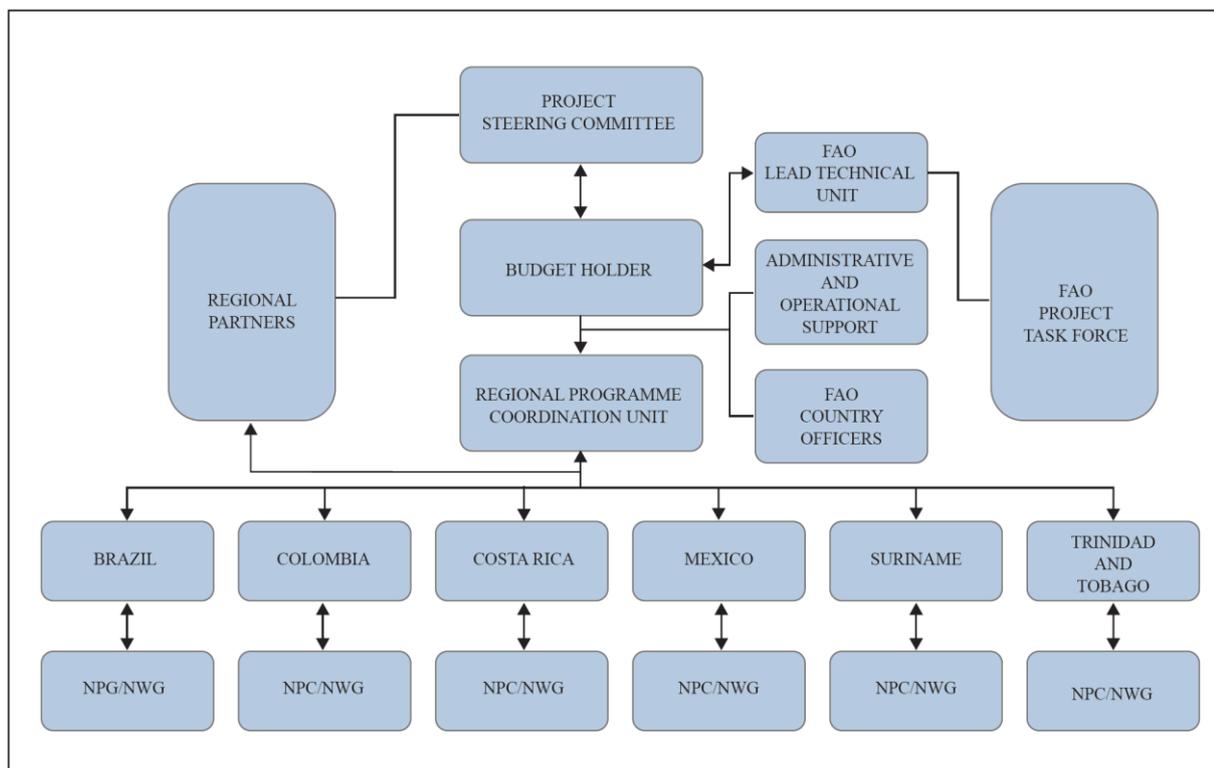
39. The project results framework is presented in Appendix 10. The two overarching project objectives are:
- i. **Global Environment Objective:** reduce the negative ecosystem impact and achieve more sustainable shrimp/bottom trawl fisheries in the LAC region through implementation of an ecosystem approach to fisheries (EAF), including bycatch and habitat impact management.
 - ii. **Project Development Objective:** strengthen resilience of coastal communities through promotion of responsible fishing practices and livelihoods enhancement and diversification contributing to food security and poverty eradication.
40. The four project components are:
- i. **Component 1.** Improving institutional and regulatory frameworks for shrimp/bottom trawl fisheries and co-management.
 - ii. **Component 2.** Strengthening bycatch management and responsible trawling practices within an EAF framework.
 - iii. **Component 3.** Promoting sustainable and equitable livelihoods through enhancement and diversification.
 - iv. **Component 4.** Project progress monitoring, evaluation and information dissemination and communication.
41. The project results framework consists of six outcomes with associated indicators and end-of-project targets, and 12 substantive outputs in Components 1-3 and three outputs in Component 4. In addition, the countries' results frameworks consist of end-of-project targets under each output, with the type and number of targets varying among the countries. During the inception phase, some of the country targets were re-formulated to better suit the local contexts, particularly for Costa Rica, Suriname, and Trinidad and Tobago.
42. As bycatch management is a crucial part of EAF, the project intended to support the implementation of the International Guidelines on Bycatch Management and Reduction of Discards (B&D Guidelines) and the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines). It was also grounded in the FAO Code of Conduct for Responsible Fisheries (CCRF). The project's alignment with FAO, GEF and national priorities is described in section 3.1 on Relevance.

²Produced during the Regional Workshop on Bycatch Management and Reduction of Discards, held in Costa Rica in February 2010.

2.2.1 Institutional framework for project implementation

43. The REBYC-II LAC project management structure is shown in Figure 2. FAO WECAFC was the Lead Technical Unit responsible for the overall project technical execution and host of the Regional Project Coordination Unit (RPCU). A regional Project Steering Committee (PSC) was established to supervise and support the coordination of project implementation.

Figure 2. REBYC-II LAC project management structure



Source: Project Inception Report.

44. At the country level, the national Fisheries Authorities, which also served as the national focal points, were co-executing partners directly involved in project implementation. In Brazil, Colombia and Mexico, the institutional execution arrangements consisted of a partnership between the national Fisheries Authority and a technical/academic institute, while in the other countries, the Fisheries Authority led the project execution:
- i. Brazil: Secretariat of Aquaculture and Fisheries of the Ministry of Agriculture, Livestock and Supply (SAP/MAPA),³ and Apolônio Sales Foundation for Educational Development (FADURPE) based at the Federal Rural University of Pernambuco (UFRPE);
 - ii. Colombia: *Autoridad Nacional de Acuicultura y Pesca* (AUNAP), and *Instituto de Investigaciones Marinas y Costeras* (INVEMAR);
 - iii. Costa Rica: *Instituto Costarricense de Pesca y Acuicultura* (INCOPECA);
 - iv. Mexico: *Instituto Nacional de Pesca y Acuicultura* (INAPESCA) and *Comisión Nacional de Acuicultura y Pesca* (CONAPESCA) of the *Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación* (SAGARPA; now *Secretaría de Agricultura y Desarrollo Rural*, SADER);
 - v. Suriname: Ministry of Agriculture, Animal Husbandry and Fisheries;

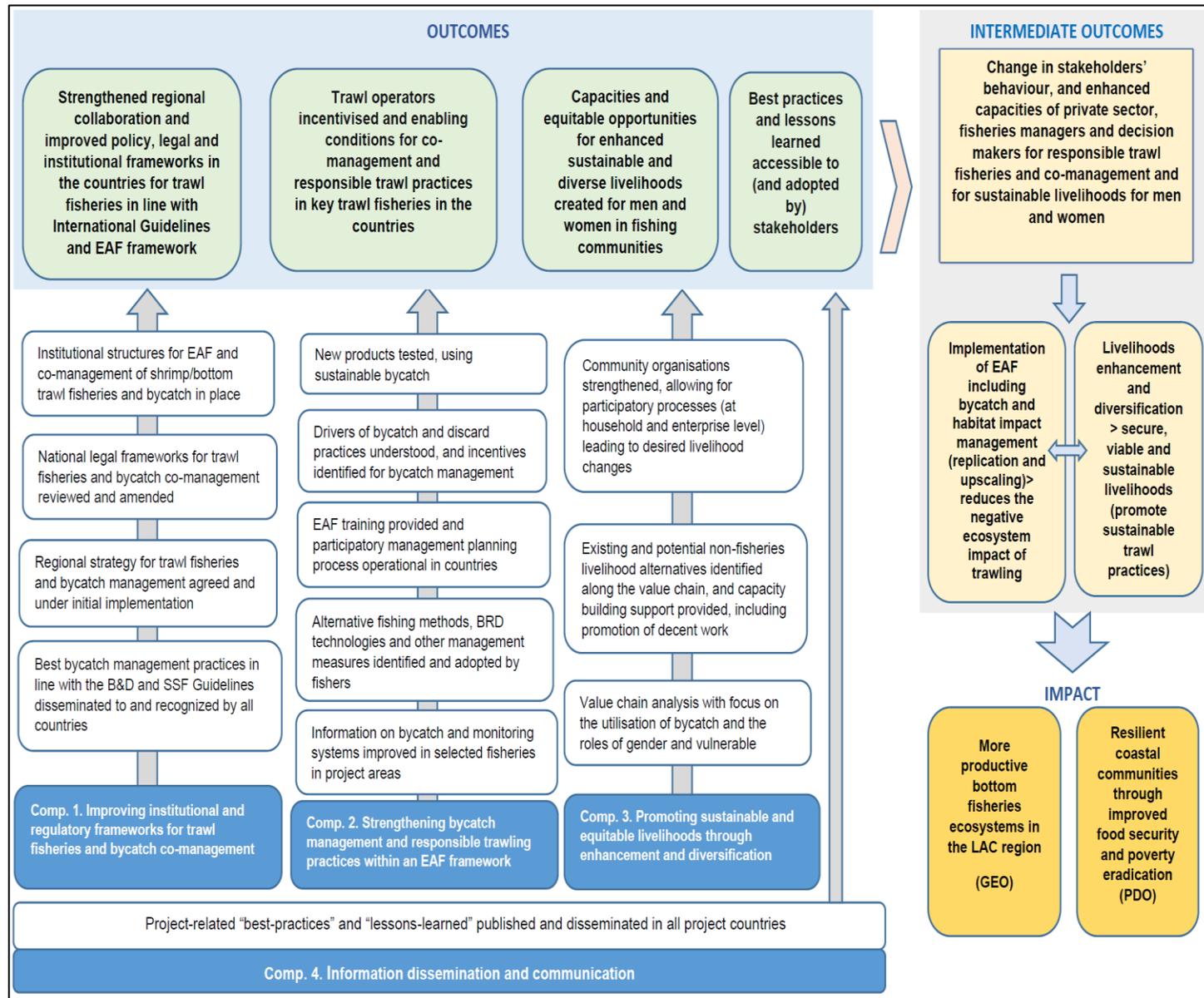
³The project was endorsed by the Brazilian Government during the mandate of the Ministry of Fisheries and Aquaculture, which was dismantled at the end of 2015.

- vi. Trinidad and Tobago: Fisheries Division of the Ministry of Agriculture, Land and Fisheries.
45. In each country, a National Project Coordinator (NPC) was designated and a National Project Committee or National Working Group (NWG) was set up to coordinate and supervise the implementation of national project activities. For additional details, see section 3.3 on the quality of project execution.

2.3 Theory of change

46. The REBYC-II LAC project addresses the major barriers to improved regional management of bycatch, and in this way supports the sustainable development of the trawl sub-sector and the people who depend on and are influenced by it, including other fisheries. This includes: i) ensuring that enabling institutional and regulatory frameworks are in place; ii) encouraging effective management of bycatch through improved information and technology, participatory approaches and appropriate incentives; and iii) supporting enhanced and equitable livelihoods.
47. The project's theory of change (TOC) is illustrated in Figure 3. This was developed during the terminal evaluation inception phase and modified slightly based on stakeholders' feedback (impact related to the Global Environment Objective (GEO) and assumptions). Underpinning the project's GEO is the recognition of the threat of unsustainable trawl practices (resulting in high quantities of bycatch and discards as well as physical damage to marine habitats) to the health of marine ecosystems and biodiversity, and in turn, to the sustainability of fisheries resources that support the trawl sub-sector and dependent livelihoods. The Project Development Objective (PDO) is linked to the GEO through the premise that the global environmental benefits generated by the project will form the basis for livelihoods enhancement and diversification and contribute to food security and poverty eradication. Further, by ensuring secure livelihoods, responsible trawling practices that have been introduced by the project are more likely to be maintained and hence contribute to environmental sustainability.
48. While the project aims to reduce the capture of bycatch and to control destructive fishing practices through technical and management measures, it was recognized that gear restrictions alone are not sufficient to achieve sustainable trawl fisheries. Therefore, REBYC-II LAC adopted a more holistic approach consistent with FAO's CCRF and its principles. A practical approach to fully implement the CCRF is the ecosystem approach to fisheries. EAF is a management planning process that incorporates the principles of sustainable development, including the human and social elements of sustainability, not just the ecological and environmental elements. The project incorporates these key elements in its GEO and PDO, which it aims to achieve through its three mutually supportive components.

Figure 3. REBYC-II LAC project theory of change



Source: Evaluation team in consultation with Regional and National Project Coordination.

49. Component 1 aims to establish the enabling conditions including appropriate governance frameworks necessary for long-term solutions for trawl fisheries and bycatch management through its two outcomes. The four outputs and associated activities of Component 1 were appropriate to achieve the stated outcomes. Strengthened regional collaboration is feasible during the project lifespan, especially since well-established and active regional fisheries organizations already operate in the region and there is a history of strong collaboration among them (e.g. WECAFC, CRFM, OSPESCA, and the *Institut Français de Recherche pour l'Exploitation de la Mer* (IFREMER) and their joint shrimp and groundfish Working Group). While agreement on the regional strategy for shrimp/bottom trawl fisheries and bycatch management is feasible, its implementation during the project lifespan may be overambitious. Similarly, policy, legal and institutional changes at the national level during the project lifespan may not be realistic since these processes tend to be inherently time-consuming and fraught with political and other hurdles. Dissemination of best bycatch management practices and the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication to all countries in the region (Output 1.1.1) is an activity rather than an output and there is no guarantee that the countries would adopt or implement the guidelines unless other conditions are in place. Incorporation of the guidelines in the Regional Strategy for shrimp/bottom trawl fisheries and bycatch management (Output 1.1.2) as well as in national management plans (Output 1.2.1) will be crucial in ensuring their adoption by the shrimp trawling sub-sector.
50. Component 2 aims to strengthen bycatch management and responsible trawling practices through two outcomes, which are crucial for achieving the GEO and PDO. Promoting investments by public and private partners in sustainable fishing gears, vessels and better management approaches is essential to support responsible trawl fisheries in the countries and is consistent with the collaborative and participatory approach promoted by EAF. However, achieving some of the expected outputs within the Project's duration is unrealistic, particularly the adoption of alternative fishing methods, bycatch reduction devices and technologies and other management measures by fishers and national authorities (Output 2.1.1) – this would depend to a large extent on the establishment of the appropriate policy, legal and institutional frameworks (Outcome 1.2); institutional capacity for monitoring, control and surveillance; compliance with management regulations; and the viability of potential alternative livelihoods and incentives. A more realistic aim is to establish the foundation for the adoption, on the longer-term, of the management measures introduced under the project.
51. Furthermore, sustainable trawl fisheries involve not only bycatch management but other elements such as spatio-temporal considerations (e.g. geographic and seasonal distribution of the different life history stages of the target species; location of vulnerable habitats; and characteristics and strategies of the fishing fleet). The extent to which these considerations are incorporated into the management measures will be examined in the terminal evaluation. Additionally, the pilot projects in selected sites in the six countries are not adequate to bring about substantial environmental and socio-economic improvements during the project. With respect to environmental improvements, there is a need for replication and upscaling of the project results over significantly larger geographic areas, especially considering that the stocks may be widely distributed and shared among the countries. Another important consideration is the potential effect of climate change on the stocks of the target species as well as on fishing operations, coastal infrastructure, and livelihoods. It is widely acknowledged that climate change must be considered in the development and management of the region's fisheries.
52. Component 3 promotes sustainable and equitable livelihoods through enhancement and diversification related to the shrimp/bottom trawl fisheries sub-sector. The logic is that if management measures that reduce bycatch are introduced, there would be potential impacts on

those who depend on bycatch for income and food security (including women and the youth). Similarly, if improved management of the sub-sector leads to a reduction of the shrimp/bottom trawler fleet, alternative employment for fishers and fish workers must be created. Therefore, the project aims to incentivize fishers and fish workers along the trawl fisheries value chain to adopt more sustainable trawl practices. It posits that creating alternative livelihood opportunities and strengthening local capacities will bring about the required change in stakeholder behaviour. However, because fisheries have a strong cultural dimension in the project countries, particularly among local communities, changing stakeholder behaviour will require sustained effort beyond the duration of the project, including strong institutions to ensure compliance. Better mapping of trawl fisheries value chain may help identify win-win approaches.

53. Component 4 deals with progress monitoring, evaluation and information dissemination and communication. Dissemination of lessons learned and good practices as well as sharing of data and information will be crucial for the uptake, replication and upscaling of project results, and improved awareness, in other areas and countries in the region, and hence promote a wider and sustained impact.
54. A major driver is the socio-economic importance of bottom trawl fisheries in the region and the realization by decision makers and other stakeholders that their sustainability is threatened by unsustainable fishing practices that result in large quantities of bycatch and damage to vulnerable marine habitats. Moreover, declining trawl catches and reduced profitability are putting livelihoods and food security of dependent communities at risk in the countries. These environmental, social and economic consequences of the bottom trawl fisheries have contributed to the recognition of the need for an ecosystem approach to fisheries management. In this context, adoption of the FAO CCRF and the International Guidelines on Bycatch Management and Reduction of Discards by the countries is considered to be major drivers. Furthermore, several of the Sustainable Development Goals (SDG) are strong imperatives for adopting more sustainable fisheries practices and strengthening the resilience of fishing communities, particularly SDG 14 (sustainable use of the oceans, seas and marine resources for sustainable development) and other SDGs such as SDG 1 (poverty reduction), SDG 2 (hunger/food security), SDG 5 (gender equality), SDG 8 (productive employment and decent work), and SDG 16 (peace, justice, and effective institutions).
55. Some of the key assumptions for achievement of the long-term impact are:
 - i. Adequate and sustained political support and stakeholder capacity for establishing a regional bycatch policy/strategy to amend national institutional and regulatory frameworks, and to carry out participatory processes and implement EAF and co-management.
 - ii. Political interest to integrate the conservation of biodiversity and the integrated management of natural resources as strategic instruments and public policies.
 - iii. Adequate capacity and financial support for sustained monitoring, surveillance and enforcement.
 - iv. Effective, equitable and transparent participation of stakeholders in the implementation of project activities and in decision-making.
 - v. Private sector/fishers are willing to collaborate and adopt the management measures, and potential conflicts can be avoided or resolved.

- vi. Opportunities for viable alternative livelihoods are created in the trawl fishing communities and members are willing to change their mindset and behaviour and adopt management measures and alternative livelihoods.
 - vii. Other policy drivers and externalities do not negatively impact on desired policy and management changes that aim to reduce bycatch.
56. As indicated in the foregoing, some of the project's expected outputs and outcomes are overambitious in terms of their achievement within the project's duration. However, establishing enabling conditions for more sustainable bottom trawl practices within an EAF framework and progressing towards long-term impacts is feasible.

3. Key findings

3.1 Relevance

EQ1. To what extent is the project relevant to countries priorities, and GEF and FAO priorities and strategic objectives and programmes?

Finding 1. The project has remained highly relevant to the development objectives of the participating countries regarding sustainable trawl fisheries, and to the objectives and priorities of FAO and GEF. Its relevance to some of the countries has increased due to recent developments such as trawling bans and shrimp export embargos imposed by foreign countries, lifting of which can potentially be supported by the project's results related to reduction of bycatch and discards.

The terminal evaluation rating for project relevance is Highly Satisfactory.

57. Bottom trawl fisheries (shrimp and groundfish) make an important contribution to employment, livelihoods, food security and foreign exchange earnings in the participating countries. Yet, these countries face a number of challenges regarding the sustainability of trawl fisheries including overall declining catches and profitability and adverse impacts on fisheries productivity arising from the high quantity of bycatch and discards (including juveniles of commercially important species and Endangered, Vulnerable and Threatened Species) as well as damage to benthic habitats, which tend to be characteristic of bottom trawl fisheries. The need to reduce trawl bycatch has been recognized by the countries but the high dependence among local fishing communities on trawl bycatch for food and livelihoods creates a dilemma. These and other issues were considered in the project design, which aimed to promote more sustainable trawl fishing practices through a combination of technological gear modifications; appropriate policy, legal and institutional frameworks; fisheries management measures; participatory approaches including co-management; incentives; and enhancing and diversifying livelihoods.
58. The case of Costa Rica warrants special mention since a national policy change prohibited the renewal of licenses for the industrial shrimp trawl fishery. Given that the last active bottom trawl licenses expired in 2019, shrimp trawling was effectively banned in Costa Rica from that time. Nevertheless, the project remained relevant since it was seen by the trawl fishing community as a means to demonstrate that trawling can be sustainable and thus help in reversal of the trawl ban. Furthermore, adaptations were made to the project targets and activities in Costa Rica, with focus on the small-scale trawl fishery in the Costa Rican Caribbean, strengthening fisherfolk associations in both the Costa Rican Caribbean and Pacific, and developing the capacity of women for enhanced livelihoods and participation in the value chain.
59. Another development was the imposition by the United States of America (in April 2021) of an embargo on the importation of shrimps from Mexico owing to the inadequate use of turtle excluder devices (TED) by the trawler fleet. The project's information from the observer programme provided evidence of the low capture of sea turtles by the local shrimp/bottom trawler fleet. A similar embargo was imposed on Trinidad and Tobago by the United States of America. Hence, the need to adopt BRDs and TEDs in shrimp trawlers has become even more pressing in these countries.
60. The project objectives and expected outcomes were derived from each participating country's national concerns as identified at project design. The National Fisheries Authorities, National Focal Points and other key stakeholders from each country actively participated in the identification of such concerns. The national priorities in bycatch management were further defined during the REBYC-II LAC Project Inception and Logframe workshops held in 2014. Workshop participants

included the National Focal Points of the six countries; and representatives of WECAFC, CRFM, OSPESCA, NOAA, the United Nations Development Programme (UNDP)/GEF CLME+ project,⁴ and FAO.

61. Several participating countries have adopted relevant regional and global policy frameworks and guidelines including the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (Cartagena Convention), United Nations Convention on the Law of the Sea, CCRF, B&D Guidelines, SSF Guidelines, and the 2030 Agenda and its SDGs. REBYC-II LAC supported the implementation of the B&D Guidelines and SSF Guidelines.
62. Sustainable management of fishery resources is included in the Country Programming Frameworks (CPFs) agreed between the governments of the six participating countries and FAO (strategic pillars or priority areas linked to Food and Nutrition Security, Sustainable Food Systems, and Sustainable Management of Natural Resources, which are common to all the countries although articulated differently).
63. By addressing unsustainable fishing practices in order to make trawl fisheries more sustainable and productive, the project contributes to FAO's Strategic Objective (SO) 2 (Increase and improve provision of goods and services from agriculture, forestry, and fisheries in a sustainable manner). The project also contributes to SO3 (Reduce rural poverty), by identifying opportunities and strengthening capacities for enhanced sustainable and diverse livelihoods, and supporting the implementation of the SSF Guidelines; and SO4 (Enable more inclusive and efficient agricultural and food systems at local, national and international levels), by promoting gender equality and co-management of trawl fisheries as well as the reduction of food loss and waste through the reduction of discards and utilization of sustainable bycatch.
64. Additionally, by identifying, disseminating and promoting the adoption of best practices for more sustainable trawl fisheries by stakeholders, the project contributes to FAO's LAC Regional Initiative 3 (Agricultural and Food Value Chain Development: Improving food and feed systems), which aims at revitalizing the food and agricultural sector (including fisheries) of the Caribbean region, in particular Result 2 (Stakeholders of the value chains selected have adopted best practices - SO2, SO3, and SO4).
65. REBYC-II LAC was developed under the GEF-5 Programming Framework and contributes to its International Waters (IW) Focal Area Strategic Objective (SO2) (Catalyse multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and Large Marine Ecosystems while considering climatic variability and change). However, under the current GEF-7 replenishment, REBYC-II LAC is relevant to the IW Focal Area Objective "Strengthening National Blue Economy Opportunities". Through this Objective, GEF is helping countries identify sustainable public and private national investments in the Blue Economy, through funding of collective management of coastal and marine systems and implementation of integrated ocean policies, legal and institutional reforms. Marine fisheries, including shrimp and groundfish trawl fisheries, constitute a major sector of the region's blue economy.

⁴ Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems.

3.2 Effectiveness

EQ2. To what extent has the project contributed to the achievement of stated environmental and development objectives? Were intended results achieved as expected and were there any unintended results?

Finding 2. Despite the various challenges faced including the COVID-19 pandemic, nearly all the planned project outputs and outcomes have been achieved,⁵ some expectations exceeded, and some unintended, positive results realized. The least progress was made in the creation of opportunities for enhanced livelihoods (Component 3), although promising results were obtained with some community groups in certain project pilot sites.

Finding 3. The performance of all project countries was Satisfactory – even those that were found to be lagging by the mid-term evaluation – although the level of achievement in some countries (Colombia and Mexico) was generally higher, due in part to greater institutional and technical capacity that existed prior to the start of the project.

Finding 4. The GEO and PDO have been only partially achieved at the pilot-site scale in some of the countries (Colombia, Costa Rica, and Mexico). Achieving the GEO and PDO during project implementation and through a single project was overambitious, which reflects a project design flaw. However, the enabling environment created by the project and the transformational results obtained will contribute towards achievement of the GEO and PDO in the longer-term.

The terminal evaluation rating for project effectiveness is Highly Satisfactory.

66. The GEO and PDO together incorporate the principles of EAF management, which considers both the environmental as well as the socio-economic aspects associated with bottom trawling. Thus, the project takes a holistic approach that combines technological gear modifications with improved legislative and management frameworks and stakeholder participation, while also taking into account socio-economic considerations in an effort to improve livelihoods and mitigate any potential adverse impacts of the reduction of bycatch on local livelihoods and food security.
67. Indicators for the GEO and PDO were not defined in the project results framework. Therefore, for the purposes of the terminal evaluation, an assessment of achievement of these objectives is based principally on the achievement of the outputs and outcomes and associated indicators. Considering the social, economic, technological and ecological complexity of implementing EAF and the time required to achieve the global objectives, achievement of the GEO and PDO during project implementation and through a single project was overambitious, which is a weakness in the project design. Further, bycatch reduction alone is not sufficient to address the negative impacts of trawling since dragging of the trawl gear on the seabed can also degrade benthic habitats. In addition, when lost, trawl gear can continue to do damage through 'ghost fishing' and interference with benthic habitats.
68. The outputs and outcomes as well as unexpected positive results achieved (see section on Outcomes) have been transformational and will contribute towards the GEO and PDO in the longer-term, if certain assumptions hold (as described in the theory of change). Project results that will contribute towards the GEO include the introduction of modified trawl fishing gear that have been demonstrated to reduce the quantity of bycatch (including of marine turtles and other endangered species) and discards, and the development of national legislation and management plans that incorporate bycatch and other management measures such as area and seasonal closures, within an EAF framework. Results that will contribute towards the PDO include

⁵ See Component results and national case studies for more information.

strengthening the capacity of local communities including women, in some of the countries for enhanced livelihoods and diversification through the creation of value added products, identification of options for small-scale trawl fisheries diversification (e.g. *Brotula* and tuna fisheries in Colombia); development of business plans to make viable the changes in fishing technologies and for the use of discards by women fish workers ('platoneras') in Colombia; and support to a women's cooperative to obtain licenses for shellfish harvesting in Costa Rica, thus regularizing their activity and leading to secure access and incomes. Additional details are presented in the following section on Component results.

3.2.1 Component results: Achievement of outcomes and outputs

69. The status (percentage completion) of the planned outputs in Components 1-3 is given in Appendix 11.

Component 1. Improving institutional and regulatory frameworks for shrimp/bottom trawl fisheries and bycatch co-management

70. The terminal evaluation rating for this Component is Highly Satisfactory. All the planned outputs in this Component were delivered (although some were awaiting publication or government endorsement, which is beyond the project's control) and the outcomes achieved.

Outcome 1.1. Strengthened regional collaboration on shrimp/bottom trawl fisheries and bycatch management.

71. This outcome responds to the need for a regional strategy and regional collaboration to guide and support the implementation of the B&D Guidelines, which was recognized by participating countries during the development of the REBYC-II LAC project in 2013–2015. They requested FAO, through WECAFC, to lead the development of a strategy on bycatch management in trawl fisheries that ensured a common approach across national borders. Subsequently, a Recommendation was adopted by the 17th Session of WECAFC in 2019 (Recommendation WECAFC/XVII/2019/11) – "WECAFC to collaborate with OSPESCA and CRFM to develop a regional strategy for management of bycatch in shrimp/bottom trawl fisheries to be completed in a consultative process with the support of REBYC-II LAC project and presented to the 18th Session of WECAFC for its review and endorsement." The Regional Strategy on the Management of bycatch and discards in Latin American and Caribbean bottom trawl (shrimp and groundfish) fisheries (output 1.1.2) was drafted during expert workshops and consultations held under the REBYC-II LAC project and reviewed by the WECAFC/CRFM/IFREMER/OSPESCA Shrimp and Groundfish Working Group.
72. The Working Group has endorsed the regional strategy and recommended that it be presented in 2022 to the 11th Session of the WECAFC Scientific Advisory Group (SAG) for review and then to the 18th WECAFC Session for endorsement. It is likely that the strategy will be endorsed by the WECAFC Session since it was developed in consultation with the member countries of WECAFC, CRFM and OSPESCA, and was already extensively reviewed. However, the expectation that the strategy would be functional and under implementation by the end of the project - based on the outcome indicator 'Regional bycatch/discards strategy functional and under implementation' - was not met, which was beyond the project's control. Nevertheless, the project has established enabling conditions to fully achieve this outcome, and its endorsement by WECAFC will expedite the implementation of the strategy by its member states.
73. While delivery of the output (the regional strategy) is vital, the process for its development is equally important since it affects several attributes that underpin the ultimate success of the strategy such as technical/scientific credibility, stakeholder capacity, and the level of stakeholder buy-in, all of which contribute to establishment of enabling conditions. The regional strategy was

developed through extensive consultations among the member states of WECAFC, CRFM and OSPESCA, with inputs from the WECAFC/CRFM/IFREMER/OSPESCA Working Group. This also provided an opportunity to involve countries that were not participating directly in REBYC-II LAC. Along with the CLME+ project, REBYC-II LAC has strengthened the Shrimp and Groundfish Working Group. In addition, regional technical workshops on EAF, bycatch reduction technologies and best practices, bycatch utilization, data collection and statistics as well as peer-peer exchanges and support from NOAA and CERMES, among others, helped to strengthen regional collaboration and the capacity of the REBYC-II LAC countries for EAF and bycatch management.

74. The Regional Strategy on the Management of Bycatch and Discards is incorporated in the Sub-regional EAF Management Strategy and fisheries management plan (FMP) for shrimp and groundfish resources of the North Brazil-Guianas Shelf. The latter, which was developed with support from the CLME+ project, is primarily based on provisions in existing national FMPs for Guyana, Suriname, and Trinidad and Tobago, and consultations held in each of those countries. The Subregional strategy will also be presented for endorsement at the 18th WECAFC Session. Endorsement by WECAFC will demonstrate wide political support of these two instruments, which will facilitate the development of national institutional and regulatory frameworks for bycatch management, EAF and co-management.
75. Achievement of this Outcome was also supported by the incorporation of the B&D Guidelines in fisheries regulations and management plans for shrimp and groundfish developed or amended for this purpose in all six project countries (Output 1.1.1). In addition, a number of decrees and declarations pertaining to more sustainable trawl fisheries were issued by the participating governments. Please refer to Outcome 1.2 for details.

Outcome 1.2. Improved legal and institutional frameworks in the Project countries for shrimp/bottom trawl fisheries and bycatch co-management and EAF.

76. All the project countries, including those that were found by the mid-term evaluation to be lagging (Suriname, Trinidad and Tobago), have fully achieved - and in some cases exceeded - their targets with respect to the development or improvement of legal and institutional frameworks for more sustainable bottom trawl fisheries and co-management in line with the B&D and SSF Guidelines and within an EAF framework (see the terminal evaluation reports of the focus countries in Annexes 1-3). In fact, the accomplishments under this Outcome represent some of the project's most significant results at the national level. All the project countries have developed or reviewed and amended existing legal instruments and fisheries management frameworks to address bycatch management and other issues related to bottom trawl fisheries, based on the results of the gear trials and other project activities. In some of the countries, these have already received government endorsement or formalized through decrees and resolutions, as discussed below. At the time of the terminal evaluation, some of the instruments (see paragraphs below) were awaiting endorsement and publication.
77. In Brazil, the National EAF Shrimp FMP was elaborated and is still to be adopted. In addition, owing to the social, economic and ecological diversity from North to South, during EAF workshops stakeholders agreed to elaborate four subnational management plans, which are integrated into the national plan. The final stakeholder consultation, which was delayed due to the pandemic, was held virtually from 10-12 August 2021.
78. Colombia officially published five resolutions (management plans) that include management measures (spatial-temporal fishing closures, a national bycatch management committee, shrimp fishing quotas, fishing agreement between artisanal and industrial fishers to reduce trawl fishing impacts as well as conflicts among users). Recommendations arising from the review of the legal

framework for bycatch management were accepted by the Ministry of Agriculture and Rural Development and will be included in Colombia's new Fisheries Law. A National Plan for the Reduction of Bycatch and Discards was adopted by Resolution No. 2587 of 2020. Two other draft resolutions regarding changes in trawl fishing technology and BRDs are almost ready to be issued. These resolutions are based on the results of trials with the prototype nets and BRDs.

79. In Costa Rica, the Environment Commission and the Agriculture Commission of the National Assembly discussed two proposed laws, one seeking to legislate bottom trawling while the other to ban the practice. FAO was requested to attend a session of the Environment Commission of the National Assembly to provide its viewpoint on the two draft laws; the Regional Project Coordinator (RPC) participated in this session. A new trawl fishery legal framework incorporating EAF and the B&D and SSF Guidelines was presented by the fisheries authority (INCOPECSA) to the Government, to support lifting of the ban. However, owing to the change in government policy regarding the trawl ban, this legal framework was not passed. The National Assembly approved an amendment to the current fishing law that includes bycatch issues, which is being reviewed by the Supreme Court prior to a final vote. In addition, Costa Rica published regulations, which are now the law, concerning minimum size of bycatch species and spatial distribution rules for trawling; and a law on Small-scale Fisheries has been submitted for review. Draft B&D guidelines were developed with the principles and criteria of sustainability for small-scale shrimp fishing of the Golfo Dulce Responsible Fishing Marine Area (RFMA), using the 'Suripera' shrimp fishing gear as an alternative, since the trawl fishing ban was implemented.
80. In Mexico, three Shrimp FMPs were implemented in different areas of the Gulf of Mexico, with the participation of the main stakeholders facilitated through the Consultative Management Committees. Technical documents for the review of the closed season for shrimp trawling in the Gulf of Mexico, with suggested regulatory measures, were prepared. However, due to the recent change in Mexican government officials on fisheries matters, the review of the regulatory framework has been delayed.
81. Suriname's Fisheries Management Plan (2021-2025) was formally endorsed by the Minister who, together with fisheries representatives, also jointly signed a Declaration approving the content of the Plan and committing to its implementation. The project facilitated the inclusion of EAF as well as bycatch and discards provisions in the draft Fisheries Act, and the 2020 Fisheries Decree now includes TED and BRD specifications. Suriname updated its Ministerial Decree on Fishing License Conditions to include details on trawl gear to reduce bycatch (including TEDs/BRDs). In addition, the project contributed to updating of the seabob management plan and renewal of the Marine Stewardship Council (MSC) certification for this fishery. Further, provisions for trawl fisheries monitoring, control and surveillance responsibilities were added to the Coast Guard Act, and relevant training provided to Coast Guard personnel.
82. The Minister of Agriculture, Land and Fisheries of Trinidad and Tobago introduced a new Fisheries Management Bill to Parliament, which includes most of the normative recommendations arising from the project including trawl and bycatch management issues. FAO Legal Department and the FAO Country Office in Trinidad and Tobago assisted with the preparation of this Bill. In November 2020, the Bill was circulated to stakeholders for comments, which have been received and are being addressed by a Joint Select Committee. In addition, a Shrimp Trawl Management Plan was drafted (based on new studies and results of the BRD gear trials) and a draft regulation that establishes closed seasons for the non-artisanal and artisanal trawl fleets was submitted to the Minister.

83. As with the development of the regional strategy (Outcome 1.1), the process adopted for the development of national legal frameworks and institutional structures is equally important. In all countries, the project used a bottom-up approach and conducted extensive consultations with key stakeholders including government agencies, the fisheries sector including fisherfolk organizations, technical and academic institutes, and non-governmental organizations (NGO), among others. This approach was vital to obtain stakeholder buy-in and ownership, which are necessary for the effective implementation of the fisheries legislation and management plans as well as for sustainability of project results and progress towards long-term impact.
84. Another major project accomplishment, which contributes to Outcome 1.2, is the establishment of institutional structures for EAF and co-management (Output 1.2.2). In some of the countries (e.g. Brazil, Trinidad and Tobago), these institutional arrangements represent the first ever functional decision-making bodies in which the government and the fisheries sector come together for open and transparent dialogue. In all the countries, multi-stakeholder platforms were established for co-management, which is a notable achievement considering the inherent challenges in getting all stakeholders 'around the table' for open dialogue. These include a wide cross-section of stakeholders from government ministries, fisheries sector (artisanal and large scale/industrial), technical, research and academic institutions, NGOs and community-based organizations (CBO), among others. Importantly, these platforms have been (or will be) formalized through legislation and government decrees, which contributes to their legitimacy and sustainability. Multi-stakeholder committees and fisherfolk organizations now play a vital role in decision-making (negotiating management measures and updating fishery management plans and regulations, etc.), which is essential to promote uptake and compliance. Importantly, these structures play a crucial role in helping to build trust and resolving conflicts among stakeholders within the countries.
85. One of the challenges, however, was getting adequate participation from the fishing sector in general and from women in particular. Among the reasons given by fisheries stakeholders interviewed there was loss of income from sacrificing a day's work (e.g. fishing or fish processing), no compensation by the project for lost income, distance of the meeting venue from their place of residence or work, no previous notification of the event, and other commitments. Attempts were made by the co-executing agencies to convene some of the meetings close to the fish landing sites or fishing communities (as done in Suriname, and Trinidad and Tobago, for example) but incentives such as adequate per diems might have improved participation and should be considered for future projects. Designating community 'champions', with appropriate incentives is another approach that may help encourage participation of local community members. During 2020–2021, the COVID-19 pandemic severely curtailed the activities of these structures that required face-to-face meetings. While virtual meetings were held, in some cases members of the fishing communities had limited access to virtual meeting platforms. The pandemic struck at a critical time in the life of the project when activities were to be completed and results consolidated and disseminated before project closure. Nevertheless, virtual events were convened in 2021 by Colombia, Mexico and the Regional Project Coordinating Unit to share project results with stakeholders.
86. In Brazil, the National Collaborative Network for the Sustainable Management of Fisheries Resources (Rede Pesca Brasil) was established by the signing of a decree. This facilitated the formation of the Standing Committee for Fisheries Management and the Sustainable Use of Groundfish Fishery Resources. Colombia established the National Committee for Bycatch Management, and INVEMAR and AUNAP developed an agreement between large-scale trawl fishers and small-scale fishers of Golfo de Tribugá (both adopted by Resolution) within a co-management framework. A fishery agreement in one pilot site was approved by the Fisheries

Authorities and stakeholders approved an agreement in another pilot site. At the time of writing, the latter was awaiting an official government resolution to be passed.

87. In Costa Rica, a management committee was established for the Barra del Colorado Responsible Fishing Marine Area, while in Mexico, the Consultative Management Committees for the pink shrimp fishery in Campeche and for the brown and white shrimp fisheries in Tamaulipas and Veracruz were established. The Consultative Committee for Pink Shrimp of Campeche is now operational. In Suriname, the National Working Group on Shrimp and Groundfish Fisheries has been institutionalized, while the Seabob Working Group and Fisheries Advisory Committee are active multi-stakeholder platforms. In Trinidad and Tobago, the National Working Group and mechanisms for stakeholder participation in decision-making have been incorporated in the Fisheries Bill. The National Working Group/Trawl Multi-Sectoral Committee has been established and will become a legal entity once the Bill is passed. Meanwhile, the National Working Group continues to function.
88. In addition to the multi-stakeholder platforms, the partnerships established between the government entities and technical/academic institutions for project execution were a notable achievement that partly accounted (in a major way) for the overall success of the project. Through the project, the capacity of these agencies and institutions for EAF and co-management was enhanced. Sustaining these partnerships following the end of the project will be important to facilitate progress towards the long-term project impacts (see also Institutional sustainability).

Component 2. Strengthening bycatch management and responsible trawling practices within an EAF framework.

89. The terminal evaluation rating for this Component is Highly Satisfactory. All the planned outputs in this Component were delivered and the outcomes achieved.

Outcome 2.1. Selected key shrimp/bottom trawl fisheries in the region are successfully co-managed through EAF (including bycatch/discards considerations).

90. This Outcome was intended to be achieved through the delivery of three outputs, two of which addressed technical and technological matters (improvement in the availability of information on bycatch and information-sharing among countries; and development and adoption of alternative fishing methods, BRD technologies, and other management measures). The third output focused on building capacity for EAF and establishment of operational participatory management planning process in the six project countries. It is underscored that the success of co-management in the achievement of management objectives would be evident on the longer-term (beyond the project lifespan), and dependent on the effective implementation and enforcement of the relevant legal instruments and fisheries management plans.
91. The project supported comprehensive data collection activities in all the countries including through improved monitoring systems such as onboard observer programmes (Mexico, Suriname, Trinidad and Tobago), fishing port enumerators, and bycatch and discards surveys. Biological data was also collected on major bycatch species and species guides/catalogues prepared. As a result, an immense volume of data and information has been produced, which contribute to significantly improving knowledge on bycatch and discards, partially filling information gaps (including biological and socio-economic aspects) and establishing baselines on bycatch and discards that were previously lacking. It is important to note that some of the data and information collected have been used by the countries to update their respective fisheries legislation and management plans. Moreover, the studies conducted have provided important insights on the use of bycatch by fishing communities and the level of discards in the trawl fisheries. As indicated by the fishing

sector stakeholders interviewed, shrimp trawl bycatch is of substantial value to local fishing communities as a source of food and livelihoods.

92. New fisheries data management systems and related capacity were developed for Costa Rica, Suriname, and Trinidad and Tobago. For the two latter countries, this was based on the FAO Fisheries Management Information System platform (Calipseo 2) and supported by FAO Fisheries and Resources Monitoring System through FAO Fisheries and Aquaculture Department. In Costa Rica, the capacity of INCOPECA was enhanced through an agreement between INCOPECA and INVEMAR (Colombia) for strengthening of data collection and processing capacity, and for gear modifications. This South-South cooperation also strengthened the regional component and programmatic approach and indicates the potential for South-South cooperation between countries with varying levels of capacity in specific areas.
93. Countries such as Colombia and Mexico have well-established data collection mechanisms and data management systems from before the start of the project, and data collected under the project were incorporated into these systems. All the countries have committed to continuing data collection that started under the project. For example, Suriname, and Trinidad and Tobago have indicated that their observer programmes and logbook systems (the latter to be introduced) will continue through their respective Fisheries Agencies' programmes. Suriname is continuing the improvement of its fisheries data collection system through a technical cooperation project supported by the Inter-American Development Bank.
94. The technological output involved the development and testing of modified gear for the reduction of bycatch and discards, which was a key activity in all the countries (except Costa Rica). Support was provided on the development and testing of the gear as well as capacity building by experts from NOAA (through NOAA co-finance). Activities included on-the-ground work in Brazil, Suriname, and Trinidad and Tobago, and hands-on training provided by NOAA to project stakeholders including members of the trawling communities (vessels owners and captains) at its Marine Laboratory in Mississippi, the United States of America.
95. In the gear trials conducted, BRD use reduced the quantity of bycatch by between 20 percent (the project target) up to about 46 percent, with the latter demonstrated in Mexico, and Trinidad and Tobago. Moreover, the reduction in catch of the target species (shrimps) was not statistically significant, as seen, for example, in BRD trials in Suriname,⁶ and Trinidad and Tobago⁷. An economic assessment of the use of the modified trawl gear in Colombia has indicated that the use of BRDs can be more profitable than the traditional gear.⁸ Other benefits of using the modified gear were demonstrated, such as a higher quality (and hence value) of the shrimp catch, reduced catch sorting time and labour, and a substantial reduction in vessel fuel consumption (by 24 percent in Colombia and 38 percent in Mexico) and carbon dioxide emissions during use of the prototype nets, contributing to the blue economy. Colombia has also estimated the reduction in the carbon footprint associated with use of the alternative gear. Modified TEDs substantially reduced the catch of marine turtles, as seen in Suriname.

⁶ Preliminary results on trials with modified Square-Mesh Panel Bycatch Reduction Device in the Suriname seabob trawl fishery (T. Willems).

⁷ REBYC-II LAC Trinidad and Tobago: REBYC-II Industrial BRD Trials, 2019 and 2020 Trials. Ministry of Agriculture, Lands & Fisheries -Fisheries Division.

⁸ Colombia: Gestión y Ordenación de la Captura Incidental de las Pesquerías de Arrastre en América Latina y el Caribe (REBYC-II LAC), Año 3. ANEXO 12. Evaluación Económica de la sustitución de artes para disminuir el impacto ambiental de la pesquería de arrastre.

96. The outstanding results of the gear trials are undoubtedly one of the most significant project achievements. However, there is need for further investigations in addition to wide dissemination and extension work in the trawl communities as well as incentives to promote adoption of the gear by the fleets.
97. In Colombia, the prototype fishing gears have been accepted by the trawl industry, and a successful pre-assessment for international trawl fishery certification completed, the latter being an unexpected positive result. In Brazil, the use of BRDs is spreading to other communities along the coast. The terminal evaluation learned that Brazil has submitted a request to the United States of America to reinstate exports based on work done under REBYC-II LAC; the request is being reviewed by the United States of America State Department. Similarly, adoption of the modified gear by the trawl fleet in Mexico, and Trinidad and Tobago could potentially help in lifting the United States of America embargo on the export of shrimps from these countries. Such developments provide a strong incentive to the trawl sector to adopt the modified gear.
98. It should be noted that the main target for the modified gear was the large-scale industrial and semi-industrial trawlers. These, however, are significantly outnumbered by the small-scale artisanal trawlers in some of the countries, where they can cause extensive damage to the marine habitats and biodiversity. The fundamental differences between the large-scale and small-scale trawl fisheries need to be considered in developing trawl bycatch management measures for both types of trawl fisheries.
99. Once again, the process adopted in delivering the output was instrumental in the high level of success attained. As recounted by the NOAA experts during terminal evaluation interviews, one of the main factors responsible for this success was the involvement of the trawl fishers themselves in developing the alternative gear and tailoring them to the fishers' specific contexts. In addition, gear trials were conducted using local trawlers and crew. Promoting the concept and working together with the fishers (who will ultimately use the gear) to develop the gear using their own knowledge and experience fostered buy-in for the finished product and increased the likelihood for its adoption.
100. Not all fishers were convinced, however. For example, in Mexico, and Trinidad and Tobago, some fishers were of the opinion that the results of the gear trials were inconclusive, and that further work was required. However, they indicated that they would be willing to adopt the gear if required to do so by trawl regulations. Further work is also needed in the small-scale trawl fisheries in Colombia and Costa Rica. While the gear trials have clearly demonstrated the environmental and economic benefits of adopting the modified gear at the pilot sites, fisheries stakeholders interviewed expressed concern about the potential impact of the reduction in bycatch on the local communities (including women) who depend on this resource for food and livelihoods (addressed in Component 3).
101. Among the issues that delayed the gear trials there were problems in acquiring the raw material for manufacture of the gear and the slow FAO procurement process, in addition to the pandemic. As a result, some of the planned activities were severely delayed, as seen for example in the case of Suriname, where the material for TEDs for the fish trawl fishery was delivered to NOAA only in July 2021, when the NOAA experts were temporarily unavailable. It is expected that the gear will be ready by September 2021, when training will also be continued by NOAA (with the costs to be covered by the Suriname Fisheries Department). Some fishers expressed a preference for fabrication of the gear locally, especially in view of the high cost of the modified gear. According to one of the NOAA experts, there is good potential for local manufacture of the gear in the countries, but further capacity building and acquisition of the necessary equipment and materials

will be required. Colombia and Mexico have existing capacity for local fabrication and testing of the gear.

102. Under REBYC-II LAC, training in EAF was provided to government officials, trawl industry and other stakeholders through regional and national workshops, the latter in all the project countries. A cadre of trainers was also trained and EAF has started to gain traction in the countries. For example, in Brazil, EAF training led to increased stakeholder participation in the project, with every coastal state in the country with trawl fisheries trying to apply EAF in the shrimp fisheries.

Outcome 2.2. An enabling environment created including incentives and promoting responsible practices by trawl operators.

103. This outcome was intended to be achieved through improving the understanding of drivers of bycatch and discard practices, identifying incentives for bycatch management, and testing of new products from bycatch. Studies on the drivers of bycatch and discard practices were completed in all the countries except Costa Rica. These provided valuable insights into the main factors that drive bycatch and discard practices (e.g. marketability of the bycatch and storage space on the vessels), which are important in developing mitigatory measures for these practices.
104. As observed by the mid-term evaluation, there was no holistic analysis by the project partners in the individual countries nor by the project as a whole, of the benefits that adopting the modified gear would entail for fishing in the short- and medium-term, nor was there effective communication and visibility to benefit a wide range of stakeholders. Since the mid-term evaluation, considerable progress has been made by the countries in demonstrating that use of the modified gear generates certain benefits to the trawl fisheries sector including reduced operational costs, as discussed above. The economic benefits derived from using the alternative gear serve as incentives for their adoption by the trawl fishers. However, these results need to be more widely communicated to fisheries stakeholders. In addition, the project identified other types of incentives and developed incentive packages, for example, Colombia developed an incentive package that includes net specifications, and business plans to introduce the new nets and for women's groups to use discards from industrial trawlers. Trinidad and Tobago has value added tax and duty concessions on the purchase of BRDs and materials. Several value added products were created using bycatch as the raw material, for example, fish pulp, sausages, aquaculture feed and octopus bait in Mexico, and liquid fish silage in Suriname.
105. These products require further development and commercialization, but progress was hampered by the pandemic. A concern is the potential impact of reducing bycatch, which is one of the project's goal, on the viability of such enterprises that are based on the utilization of bycatch. On the other hand, there is a risk that the economic success of the enterprise may increase the demand for bycatch, which will undermine the achievement of the project's long-term impacts. A careful assessment of this scenario is warranted as part of the overall process of developing incentives and initiatives for the use of bycatch.

Component 3. Promoting sustainable and equitable livelihoods through enhancement and diversification.

106. The achievement of this Component is considered Moderately Satisfactory.

Outcome 3.1. Capacities and opportunities for enhanced sustainable and diverse livelihoods created and gender equality promoted.

107. Outcome 3.1 is based on the identification of key actors in the value chain, strengthening of their organizations, and pursuing new income generating opportunities for men and women in the pilot sites. The project completed value chain analyses or socio-economic assessments in all

countries, and identified gender roles and vulnerability issues in the value chain. Studies conducted in Mexico and Suriname on the socio-economic impact and value of trawl bycatch along the value chain serve as a basis to further explore value adding and enhanced livelihoods for men and women. In Colombia, women were empowered for improved participation in the value chain, for example, through training and formalization of the 'platoneras' (women traders of bycatch) and development of a successful business plan for the use of discards. Studies at the Brazilian pilot site of Sirinhaém showed that reducing bycatch had substantial negative social and economic impacts compared to the environmental benefits. Therefore, the project pivoted from reducing bycatch to improving utilization, which was a science-based decision to protect the food security and livelihoods of the community. In Mexico, an assessment of the direct impact of trawling on small-scale fishers showed that with the proper use of BRDs and spatial closures, trawlers would have minimal direct impact on the species targeted by small-scale fishers. This is significant where there are conflicts between trawlers and small-scale fishers, as is usually the case.

108. An outstanding achievement was the creation and/or strengthening of fisherfolk organizations in all countries, with some of them legally established (e.g. in Costa Rica and Suriname). The number exceeded the expectation of at least 12 such organizations. Particular attention was paid to women's fisher organizations and involvement. Through capacity strengthening efforts, their governance structures and overall management as well as their ability to participate in decision-making processes were improved. Some of the organizations received training in EAF and co-management, among other aspects. A diagnostic study of fisher organizations in Suriname, and Trinidad and Tobago (conducted through an FAO/CERMES/CANARI/WWF-Guianas and Duke University collaboration) increased understanding of how small-scale fisherfolk organizations govern themselves in these countries.
109. Examples of achievements that contribute to this Outcome include strengthening community organizations contributing to secure livelihoods in the Anhatomirim pilot site in Brazil; strengthening the organizational/business capacity of women's post-harvest groups, organization of industrial fishers to pursue certification, the use of discards in added value products, and a feasibility study for *Brotula* and tuna resources as an alternative for fishing communities to diversify their own small-scale fisheries in Colombia; in Costa Rica, strengthening five organizations to mitigate unemployment stemming from the suspension of trawling; support to micro-projects to enhance livelihoods with good returns on investment, and to one woman's cooperative to obtain licenses to collect shellfish leading to secure access and incomes; and in Suriname, legal establishment of five fisher organizations and one overarching national organization (Suriname National Fisherfolk Organizations).
110. REBYC-II LAC partners and stakeholders participated in a regional training course on the production and utilization of fish silage in Panama in 2017, through co-financing provided by FAO. Other capacity building efforts included training of food technicians (Mexico) and fisheries stakeholders (Trinidad and Tobago) in the production of value added products from trawl bycatch. Among the trainees there were several women, although in general they were outnumbered by men except in cases where women's groups were the target beneficiaries. See section 3.6.2 on Gender.
111. While significant achievements were made in this component, progress on the livelihoods aspect was slow in most of the countries. This was attributed to limited funding, the complexity of the task, and the general state of local economies with limited options for alternative livelihoods. An important consideration is the cultural importance of fishing in the countries, and the challenges in changing what is a way of life for some communities, particularly among older individuals.

Nevertheless, the results obtained have set the stage for future investment and long-term results that demonstrate enhanced or alternative livelihoods. This component would have benefitted from the involvement of other agencies with the relevant mandate and expertise for community development and sustainable livelihoods.

Component 4. Project progress monitoring, evaluation and information dissemination and communication.

Outcome 4.1. Project implementation based on results-based management and application of project findings and lessons learned in future operations.

112. Outputs 4.1.1 and 4.1.2 are discussed under monitoring and evaluation (M&E). With respect to output 4.1.3, a diverse array of best practices and lessons learned have been generated during project implementation. However, some stakeholders interviewed expressed that although some efforts were made, sharing of experiences, best practices and lessons learned among the project countries could have been better. This has constrained 'cross-fertilization' and learning among the countries. The lack of a dedicated knowledge management (KM)/communication expert in the early years of the project and limited budget for knowledge management, communication and translation largely contributed to this situation, which was no doubt exacerbated by the language barrier (four national languages among the countries). However, with the imminent close of the project, the co-executing partners are consolidating results and extracting best practices and lessons learned.
113. Based on an mid-term evaluation recommendation, a knowledge management consultant was contracted, which has accelerated the documentation and dissemination of project results, best practices and lessons learned. Various means are used to disseminate information, including the project website, which hosts a discussion forum and a resource page, and social media platforms. In addition, Colombia, Mexico and the Regional Project Coordination Unit held virtual events to share results with stakeholders, most of whom were project personnel and institutional partners. Face-to-face interaction for sharing of lessons and best practices, which is desirable in some cases such as with local communities, has been curtailed by the pandemic.
114. The REBYC-II LAC project itself is featured in a GEF/FAO 'Good Practice Brief' and highlighted in GEF communication materials and the newsletter of GEF IW:LEARN.⁹ In addition, the Regional Project Coordinator shared lessons learned at the 2019 LME Consultative Committee meeting. Dissemination of best practices and lessons needs to be continued well after the project ends, to promote uptake and sustainability of results (see section 3.6.3 on Knowledge Management).

3.3 Efficiency, project implementation and execution

EQ3. To what extent has the project been implemented efficiently and cost-effectively and was able to adapt to changing conditions?

Finding 5. The project was highly effective in adapting to factors outside its control and addressing factors within its control without compromising the quality of the outputs and achievement of its overall outcomes and objectives. The fact that it delivered almost all its outputs, targets and outcomes, and even exceed expectations in some cases – within budget and despite the challenges imposed by the pandemic and other circumstances – indicates an efficient and cost-effective project.

Finding 6. Implementation was slow in the first half of the project due to factors such as the time taken for the development of partnerships, cumbersome internal administrative processes, institutional and

⁹ International Waters Learning Exchange and Resource Network

political changes in some of the countries, and establishing (and managing) execution arrangements (LOAs) and the slow disbursement of project funds and slow procurement. Convolved FAO administrative rules and procedures had knock-on effects on implementation throughout the project duration in some of the countries.

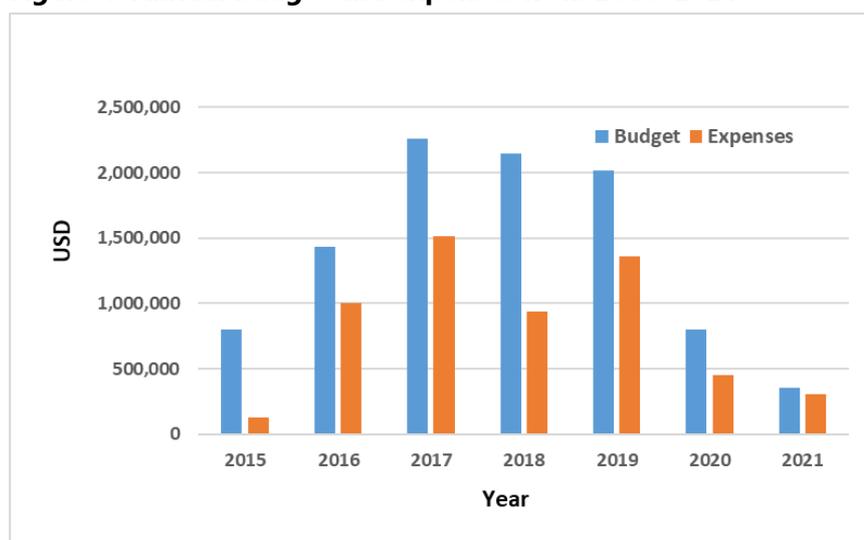
Finding 7. Momentum increased following the mid-term evaluation as the project continued to adapt to changing conditions and implement solutions to the various challenges and hurdles including those presented by the pandemic. Strategic partnerships forged were instrumental in increasing efficiency and cost-effectiveness. In all the countries, even those that were found to be lagging at the time of the mid-term evaluation, performance improved significantly, and all the countries achieved a high level of delivery of outputs and targets.

The terminal evaluation rating for Efficiency, Implementation, and Execution is Satisfactory.

3.3.1 Efficiency

115. As commonly experienced by complex, multi-country projects such as REBYC-II LAC, implementation started slowly. This is demonstrated by the level of expenditure against the allocated work plan budget in 2015 (year 1), which was only 15 percent¹⁰ (Figure 4). In the final year (2021), the budgeted amount and expenses were roughly similar.

Figure 4. Annual budget and expenses from 2015–2021



Source: FAO SLC, as of September 2021.

116. Factors that contributed to slow implementation in the first year included the length of time required to negotiate and establish executing arrangements and prepare LOAs with national co-executing agencies, recruit staff including the Regional Project Coordinator, establish national coordination offices, and build trust and partnerships among stakeholders. A no-cost extension postponed the project's initial expected date of completion from July 2020 to December 2020, to allow project partners additional time to complete remaining activities, share results and finalize exit strategies. Due to the continuing COVID-19 pandemic, the completion date was further extended to May 2021 for completion of outstanding activities and to September 2021 for administrative closure. Cost savings due to the pandemic (e.g. reduced travel) and scaling down of some planned activities (e.g. related to enhancing livelihoods) were used to cover some of the additional costs associated with the extension (e.g. remuneration of the Regional Project Coordinator) and the hiring of the knowledge management consultant. Some savings were

¹⁰ Note that the unspent balance in each year was carried over to the following year.

realized by hiring of the new Regional Project Coordinator as a consultant instead of FAO personnel.

117. Because of the pandemic, some activities had to be placed on hold or postponed, such as training of fishers by NOAA in gear construction in Suriname, planned stakeholder forums, stakeholder consultations on the management plans in Brazil, endorsement of the management plans and Fisheries Bill in Trinidad and Tobago, cessation of gear trials and observer programmes in Mexico, and Trinidad and Tobago. The latter focused on producing knowledge management products to disseminate results and lessons.
118. Despite the slow start, by mid-term about 67 percent of the planned outputs (targets) had been achieved (mid-term evaluation finding). At the time of the terminal evaluation, this had increased to over 90 percent at the project level. At national level, the mid-term evaluation found that some countries (Brazil, Suriname, Trinidad and Tobago) were underperforming in terms of delivery but that they were increasing momentum which, if maintained, could have improved performance and delivery up to the expected levels. This was realized in the latter half of the project, with achievement of targets in the countries ranging from 80–100 percent.
119. Some end-of-project targets were exceeded, e.g. achieved by a higher number of countries than planned; a higher number of FMPs than planned, such as development in Brazil of four subnational FMPs and a national FMP, instead of one. Partial achievement was due mainly to pending actions such as endorsement and implementation of legislation and fisheries management plans, implementation of the regional bycatch strategy, and adoption of the BRDs by the trawl fleets in the participating countries. These types of processes are inherently lengthy and the expectation that they would be achieved during the project lifespan reflects the over-ambitiousness of the project design. Nonetheless, the project has established a strong foundation and enabling conditions for the achievement of these outcomes in the longer-term.
120. Using the degree of achievement of outputs and targets as an indicator of efficiency (as also used by the mid-term evaluation), and in view of the limited available budget and the changing circumstances and series of challenges the project had to adapt to, the terminal evaluation found that, overall, implementation has been efficient. The national teams were able to adapt to the changing situation brought about by the pandemic and use virtual means of communication where possible. A major impact of the pandemic, however, was on a very critical aspect - sharing of lessons and results with the fishing communities and other stakeholders, which ideally should have been done face-to-face, but had to be curtailed.

Overall quality of project implementation and adaptive management (implementing agency - FAO)

121. The project's management structure (from the Project Inception report) is presented in Figure 2. This arrangement constituted a strong and cohesive institutional framework that provided both technical and administrative support and technical and financial oversight to the project. There was no apparent conflict of interest with FAO being both the implementing and executing agency since different FAO entities were responsible for each function. Various mechanisms in place to support the project by FAO included the Lead Technical Officer (LTO) (based in Panama), a Project Task Force (PTF) consisting of FAO personnel members from various FAO divisions, FAO GEF Coordination Unit - Funding Liaison Officer (FLO), and other FAO personnel members and consultants who were engaged in relevant FAO programmes (e.g. FAO FIRMS consultant for data management in Suriname, and Trinidad and Tobago, FAO Legal Services for assistance with developing fisheries legislation and regulations). External consultants were hired for technical project activities. Regarding the usefulness of the PTF to the project, the WECAFC Secretary, the Lead Technical Officer and the Regional Project Coordinator attested that this mechanism

performed a valuable function, which was corroborated during terminal evaluation interviews with other members of the PTF. Among the functions performed by the PTF, there were providing guidance on strategic decisions including on technical and budgetary matters and complementing the PSC in guiding or endorsing adaptive management measures.

122. On the part of WECAFC, the FAO Secretary to WECAFC has been very engaged in the project. Backstopping missions to the countries by the Regional Project Coordinator were critical but the inadequate budget limited the number of these missions (especially important to mitigate conflicts among stakeholders and build trust). The first Regional Project Coordinator efficiently coordinated the complex project and provided immense support to the countries. The stakeholder interviewed expressed deep appreciation for the Regional Project Coordinator. When he left the project, a new Regional Project Coordinator was recruited in July 2020 as a consultant. However, this gap did not appear to have any major impact on the project since at that time implementation was running smoothly in the countries.
123. The main decision-making body was the Project Steering Committee, which was comprised of representatives of FAO, the national executing agencies, and regional partners. Participation of high-level government officials in the PSC such as the Acting Director of the Trinidad and Tobago Fisheries Division was notable and demonstrated the country's buy-in and commitment to the project. The PSC functioned effectively and transparently and was very engaged in decision-making.
124. REBYC-II LAC also benefitted from the WECAFC/CRFM/IFREMER/OSPESCA Shrimp and Groundfish Working Group, which contributed to the development and endorsement of the regional bycatch and discards management strategy (a REBYC-II LAC output) and the shrimp and groundfish strategy and management plan for shrimp and groundfish on the North Brazil-Guiana shelf (with three REBYC-II LAC countries – Brazil, Suriname, and Trinidad and Tobago). As previously mentioned, the regional bycatch and discards management strategy will be presented to the WECAFC SAG and the 18th WECAFC Session in 2022 for endorsement, which the WECAFC Secretary will facilitate. This should expedite its uptake by the WECAFC member countries.
125. FAO's role as the implementing and executing agency was not without challenges, however. Administrative and operational delays in project execution were encountered. As noted by the mid-term evaluation and corroborated in stakeholder interviews during the terminal evaluation, these challenges were principally linked to staffing and FAO's convoluted administrative processes and institutional rules and requirements (e.g. various checks and balances across multiple FAO offices), and the limited budget for the Regional Project Coordination Unit. Regarding staffing, the Regional Project Coordination Unit was small for a project of this size and complexity, with provisions only for the Regional Project Coordinator and an administrative/financial officer. However, recruitment of the latter was delayed until 2019 and in the meantime the Regional Project Coordinator received administrative support from other FAO personnel members (no administrative/financial staff was assigned full time to the RPCU), who had to split their time among many projects. This situation placed an additional burden on the Regional Project Coordinator, who had to assume a substantial part of the administrative and financial management in addition to project coordination and technical inputs as well as communication.
126. Other issues that caused delays were the slow procurement process (as discussed in section 3.2 on Effectiveness) and the late disbursement of funds by FAO to the co-executing partners. These issues were captured in an mid-term evaluation recommendation to the FAO "Streamline and accelerate administrative and operational mechanisms in order to be more efficient in project implementation and harmonize administrative issues at the various levels at which the project

operates.” The situation improved following the mid-term evaluation, after the FAO Budget Holder (BH) implemented measures to address the existing challenges, for example, reducing the time to process LOAs and increasing administrative support to the project. Support was provided to the Regional Coordination Unit by the FAO Subregional Office for the Caribbean (SLC) based in Bridgetown, Barbados; and the regional office for LAC in Santiago, Chile. After a lengthy recruitment process, an administrative/financial officer was hired in 2017 in FAO SLC and assigned to support the project team. FAO also assigned an administration/finance officer in the FAO country office for Suriname, and Trinidad and Tobago to support the project in these two countries.

127. The Budget Holder implemented Field Budget Authorizations (FBA), where the funds were held in FAO’s account to cover the cost of certain expenses associated with smaller activities, travel and hiring of consultants, among others. While major expenses are covered under the LOAs, the FBA provides a quicker way to access the project funds and was particularly helpful in country settings (such as in Trinidad and Tobago)¹¹ where the timely release of funds by the national authorities was constrained by internal government policy.
128. An effective measure was the appointment of two FAO operational consultants who were physically based at the national coordination offices (Fisheries agencies) in Suriname, and in Trinidad and Tobago (in 2019) to provide administrative and coordination support. This arrangement worked well and allowed the Fisheries Authority staff to focus on technical and other aspects. The FAO Office for Suriname and Trinidad and Tobago was particularly supportive of the project, with several staff members and consultants providing the necessary administrative support throughout the project (and even prior to this, for example, in the development of the Fisheries Bill that was placed before Parliament in 2020).
129. Another constraint was the limited budget and deficient financial planning for regional level oversight and activities such as travel by the Regional Project Coordinator, for translation, knowledge management, communication and information dissemination. Travel in the region is particularly costly and owing to the limited budget, the Regional Project Coordinator was unable to undertake as many visits to the countries as needed for monitoring and operational matters. The Regional Project Coordinator combined oversea trips as much as possible to minimize travel costs. The annual PSC meetings presented an opportunity for interaction among FAO, the country teams and other stakeholders. In addition, the Regional Project Coordinator, Lead Technical Officer, and national coordinators (and/or focal points) came together in a one-day meeting on the day preceding the PSC meeting to review and finalize the work plans that were to be presented to the PSC, thereby minimizing the additional cost of the planning meeting.
130. During its February 2019 in-person meeting, the PSC revised the budget to fund the Regional Project Coordination Unit until the end of the project. This required an adjustment in 2019 work plans to accommodate the budget reallocation. Partnerships were established by FAO with external bodies for the execution of specific activities, including through LOAs with the UWI-CERMES, Duke University, WWF-Guiana, and the Caribbean Natural Resources Institute (CANARI); and NOAA, which was completely covered by NOAA co-financing.
131. The language barrier (four different languages spoken among the project countries) also presented some challenges including where the LOAs were in Spanish and FAO personnel non-Spanish speakers. This hampered communication among the countries, although communication

¹¹ In Trinidad and Tobago, project funds must be deposited in the country’s Central Bank from where it is disbursed to the Fisheries Division following a lengthy administrative process.

and interaction were higher among the three Spanish-speaking countries. As mentioned, the limited budget for translation and communication exacerbated the situation.

3.3.2 Quality of execution (executing agencies)

132. Although this is a direct implementation modality (DIM) project, FAO worked extensively with national counterparts for project execution in the countries, through LOAs. This extensive use of LOAs makes the project modality similar to an Operational Partners Implementation Modality (OPIM). At the national level, the national co-executing partners were directly responsible for technical implementation of national project activities, day-to-day monitoring and financial management (in accordance with FAO rules and procedures) of the GEF resources. A National Project Coordinator was appointed by each national co-executing partner to lead the project execution and support the national co-executing partner in all tasks. Each project country set up a multi-stakeholder National Working Group to support the National Project Coordinator and oversee the technical implementation of national project activities and work plans.
133. Execution arrangements varied among the countries and contributed to the differences in efficiency and performance among the countries, as noted by the mid-term evaluation. In Brazil, Colombia and Mexico, the institutional execution arrangements consisted of a partnership (through LOAs) between the Fisheries Authority and a technical/academic institute, while in the other countries, the Fisheries Authority led the project execution (see section 2.2.1 on Institutional framework for project implementation).
134. The National Fisheries Authorities, under the coordination of WECAFC, were the co-executing partners directly involved in the project implementation. FAO established LOAs with the national co-executing agencies, except in Costa Rica since the Government does not permit LOAs. In this country, the budget was administered as Field Budget Authorizations, with the FAO Country Office responsible for all financial disbursement. LOAs can be challenging, for example, they must be amended each year, which is a lengthy process that can delay activities. An alternative to LOAs is the Operational Partners Agreement (OPA). The project partners have proven to be ready for a partners' engagement that sees them taking on the role of "operational partners", with mutual commitment with FAO to achieving project results and not just delivering outputs.
135. As found by the mid-term evaluation, in the first half of the project, efficiency varied among the participating countries. These differences were related to factors such as human capacity and technical expertise, institutional structures and the strength of national institutions, cumbersome internal administrative processes, and administrative and policy changes as well as economic downturn during the project lifespan. Nevertheless, the national executing partners were able to efficiently adapt to such circumstances.
136. For example, in Brazil, changes in the national administration and institutions (including fisheries department political and technical personnel) as well as adjustments in national fisheries policies posed a challenge. However, following the mid-term evaluation, the project was able to efficiently adapt to the new political situation and exceeded expectations. This can be attributed to the fact that the co-executing partner was a Foundation (FADURPE) based at the Federal Rural University of Pernambuco, which provided continuity during the political instability. Colombia has adequate institutional capacity and the partnership between INVEMAR (which led the project execution) and AUNAP, both strong institutions with their respective comparative advantages, was a major factor accounting for the high rate of delivery of outputs in this country.
137. In Costa Rica, there were changes in INCOPESCA at the decision-making level and project coordination. In addition, the trawl ban in Costa Rica and the conflictive situation between

shallow-water small-scale fishers and semi-industrial trawlers hampered initial progress and affected stakeholder buy-in and ownership. There was significant political and public opposition against trawl fishing and limited time to gather enough information to demonstrate the sustainability of bottom trawl fishing. The project adapted some of the targets and activities, shifting the initial focus from the large-scale semi-industrial trawl fishery in the Pacific Ocean to the small-scale trawl fishery in the Costa Rican Caribbean, and strengthening fishing associations as well as developing the capacity of local women for enhanced livelihoods and participation in the value chain, among others.

138. Mexico has high institutional capacity for project execution, and the institutional arrangement with INAPESCA leading project execution and the Fisheries Authority (CONAPESCA) in a supporting role was highly successful although there were some internal issues between them that initially hampered implementation. The project also had to be adapted to changes in government fisheries policies and in state authorities. However, strong institutional collaboration helped to buffer the impact of these changes on the project. From February to December 2016, INAPESCA implemented the project through its co-financing commitments. Similarly, Suriname had to use its own funds while waiting for project funds to be disbursed.
139. Inadequate human capacity and technical expertise (due in part to limited budgets and high staff turnover) in the executing agencies in Suriname, and Trinidad and Tobago were addressed through the hiring of FAO administrative support officers (as mentioned above) and technical consultants as well as the engagement of experts through other FAO programmes and divisions (FIRMS, Legal) and NOAA for gear development and gear trials. Moreover, political changes in these two countries had a positive effect on the project since the new government ministers were more engaged and interested in promoting sustainable fisheries.
140. In Suriname, as a result of delay in accessing the project funds under the LOA (due to changes in ownership and the standards of local banks), slow FAO procurement process and the effect of the pandemic, the required material for fabrication of the fishing gear was not delivered to NOAA until July 2021, by when the relevant NOAA experts were no longer available. This activity along with training by NOAA was postponed until September (to be continued with funds from the Ministry). Further, the worsening economic situation in the country with high inflation rates has threatened buy-in from fishers and other stakeholders who are reluctant to changes in fishing practices in difficult economic times.
141. In Trinidad and Tobago, issues that hampered implementation included difficulties in retrieving LOA funds that were deposited in Central Bank accounts, reduction in the Fisheries Division's budget, suspension of overtime pay and the elimination of contract workers (among whom were most of the Division's data collectors). The use of FAO Field Budget Authorizations was critical in expediting some activities. Low administrative and technical capacity was another challenge faced by the Fisheries Division, which was mitigated by the hiring of a consultant by FAO who was embedded with the Fisheries Division. Closer collaboration could have been forged with technical institutions such as the Institute of Marine Affairs (IMA) to support specific project activities such as the geographic information system (GIS) work and analysis of fisheries data. Being a member of the National Working Group provides an opportunity for the IMA to contribute to trawl fisheries management in the country, but more support can be facilitated through a formal partnership.
142. Although some countries underperformed in terms of delivery at the time of the mid-term evaluation, in the second half of the project the momentum increased, and performance improved substantially. There was excellent coordination regionally and nationally, with strong and cohesive national teams (additional support was provided by FAO where capacity was inadequate) and

high stakeholder buy-in and ownership in all the countries. The Regional Project Coordinator undertook several backstopping missions to the countries and there was close monitoring of performance and continuous adaptive management by FAO, Regional Project Coordinator, and National Project Coordinators. Implementation of the mid-term evaluation recommendations was instrumental in improving performance in some areas. However, some loss of momentum was experienced from early 2020 because of the COVID-19 pandemic, which struck at a very critical time for the project and for the countries and the region. Although the pandemic forced some activities to be postponed or cancelled, for the most part, there has been efficient implementation at the national and regional levels, as evidenced by the high delivery of outputs and outcomes by the end of the project.

143. Cost-effectiveness is likely to have been reduced by issues related to inefficiencies in project implementation, as discussed in the foregoing. However, other factors increased cost-effectiveness, such as the strong partnerships and building on the ongoing work of local and external partners, harnessing expertise within FAO Divisions and support from WECAFC and the Shrimp and Groundfish Working Group, collaboration with other regional projects such as the CLME+ Shrimp and Groundfish sub-project, and engaging fishers in the gear trials including using their vessels and crew. Therefore, efficiency and cost-effectiveness may be considered high, given that the project achieved its objectives and exceeded expectations in some respects, with a limited budget and relatively short time frame.

3.4 Sustainability

EQ4. What is the likelihood that the project results will continue to be useful or will remain after the end of the project? What process has the project generated or supported that ensures sustainability? What are the key risks which may affect the sustainability of the project benefits?

Finding 8. There is high likelihood that project results will be sustained, due to the transformational impact of the project and creation of enabling conditions, with some evidence already of continuity of project activities and mainstreaming of results. Significant momentum was created at the country and regional levels, with strengthened institutions, technological gear adaptations, legal and management frameworks, improved stakeholder capacity, high stakeholder buy-in and ownership, and the start of a shift in stakeholder mindset and attitudes.

Finding 9. Each of the four dimensions of sustainability (environmental, social, institutional and financial) has associated risks, some of which are outside project control and must be addressed by the countries and partners.

The overall terminal evaluation rating for sustainability is Moderately Likely.

144. The terminal evaluation found that the potential for sustainability is generally high across all the project countries, but higher in some than others, depending on the human capacity, financial resources and institutional framework, among others. At the 2019 PSC meeting, all the project countries committed to taking measures to ensure the sustainability of project results.

3.4.1 Environmental sustainability

145. The project explicitly addresses environmental sustainability, as articulated in its GEO. It intended to contribute to the GEO by mitigating the adverse impacts of bottom trawling on the marine environment, habitats and biodiversity, through development and adoption of technological gear adaptations to reduce trawl bycatch, underpinned by policy, legislation and regulatory frameworks at the regional and national levels. As discussed in section 3.2 on Effectiveness, under Component 2, the project has demonstrated that substantial reduction in bycatch (up to 46 percent in some gear trials at some pilot sites – see section 3.2 on Effectiveness) can be

obtained with the BRDs tested. Reduction in the catch of turtles and skates through gear modifications has also been shown.

146. However, to achieve the environmental objectives, there is need to adopt the modified gear and other measures by the trawl fleets, which is to be facilitated through the regional and national FMPs and policy and legal frameworks developed under Component 1 (regional) and Component 2 (national), respectively. These instruments incorporate measures for reduction of bycatch and discards. However, minimizing trawling impacts on benthic habitats should be considered in future projects (e.g. trawl gear that reduces the direct impacts of bottom trawling on benthos by reducing physical contact and the depth to which it penetrates the seabed).
147. There is a risk that promoting the use of bycatch as a raw material can potentially encourage practices that increase bycatch, thereby undermining environmental sustainability. Furthermore, environmental gains can be undermined by unsustainable practices in other fisheries as well as by external factors such as climate change, habitat destruction from other activities, and marine pollution. Environmental sustainability ultimately depends on the extent to which the fishers adopt the recommended technology and comply with the trawl fisheries regulations.

The terminal evaluation rating for environmental sustainability is Moderately Likely.

3.4.2 Social sustainability

148. To a large extent, social sustainability depends on the level of buy-in, ownership and acceptance of the management measures by the key stakeholders, particularly trawl fishers. The project succeeded in building a considerable level of stakeholder buy-in and ownership among the fisheries sector stakeholders who participated in the project, and at political levels. Among the contributing factors were adoption of a bottom-up participatory approach by which fishers were directly involved in design and testing of the modified fishing gear, demonstration of the potential economic benefits to fishers of adopting the modified gear, promotion of trust and transparency, and strengthening opportunities for dialogue and co-management. As a result, a shift has started towards greater acceptance of the modified gear among some of the trawl fishers in the project countries. For example, in Brazil, the project spilled over from the initial four pilot sites to 15 of the 17 coastal states with a trawling fishery, and the stakeholders themselves became actively engaged in BRD development and testing. In Colombia, the new fishing technology was widely accepted among fishers along both the Caribbean and Pacific coasts.
149. Nevertheless, the proportion of the existing fishers involved in the project was relatively small and the general attitude among the wider trawl fishing community is that they will adopt the BRDs and other management measures, if required to do so by trawl regulations. In Mexico, the vessel owners and fishers were not convinced of the efficacy of the gear in reducing bycatch and were reluctant to implement the new trawl fisheries regulations. Adopting more sustainable trawl fishing practices requires a fundamental shift in stakeholder behaviour, which is difficult to achieve and to maintain in some countries, given the cultural significance of fisheries, the conflictive nature of trawl fisheries, and high level of distrust among the public and private sectors.
150. Some of the trawl fishers interviewed expressed concern about the potential impact of reducing bycatch on livelihoods and income since between 90 to 95 percent of bycatch is sold in some countries (e.g. Trinidad and Tobago). Another issue is the differences between small-scale and large-scale industrial trawl fisheries, which may require different types of interventions to reduce bycatch that are appropriate to each type of fishery.

The terminal evaluation rating for social sustainability is Moderately Likely.

3.4.3 Institutional sustainability

151. Improving the legal and institutional frameworks in the project countries for shrimp/bottom trawl fisheries, co-management and EAF was an explicit project outcome (Outcome 1.2). The multi-stakeholder platforms established in all countries for dialogue and co-management (National Working Groups, Trawl Multi-Sectoral Committee, Consultative Management Committee, National Committee for Bycatch Management, etc.) are likely to be sustained since they have been or will be formalized through government decrees and resolutions and incorporated into fisheries legislation. Another key element is the fisheries private sector including fisherfolk organizations, which the project either strengthened or helped to establish in the project countries.
152. As seen during project implementation, the institutional framework in the countries can be jeopardized by the impacts of changes in policy and national political administrations as seen, for example, in Brazil and Costa Rica. However, the cohesive partnerships established in the countries with strong technical institutions working alongside the government agencies confers a substantial level of resilience to the existing institutional framework. Inadequate human and technical capacity present moderate risks to institutional sustainability. Stark differences in institutional capacity exist among the countries. For instance, countries such as Colombia and Mexico have strong institutional frameworks for fisheries and environmental management while the smaller countries (Suriname, and Trinidad and Tobago) historically have had weaker capacity. However, under the project (and other FAO programmes and projects), the capacity of these countries (government departments and individuals) was strengthened considerably, including for participation in a regional project (as observed by the FAO Country Office for Suriname and Trinidad and Tobago). Countries are also taking concrete steps to increase institutional sustainability. For example, the Trinidad and Tobago Fisheries Division is conducting an institutional review of the agency to identify its staffing and financial needs to ensure that it has the necessary resources to implement the new fisheries management legislation, once it is passed.
153. Development of policies, regulations and fisheries management plans that include trawl fisheries management occurred in all the countries. Importantly, these were developed in consultation with the fisheries sector and other stakeholders, and some have been issued through government resolutions or endorsed at the ministerial level, for example, in Suriname, the Minister signed the Fisheries Bill in March 2021. In Trinidad and Tobago, mandatory use of BRDs by non-artisanal trawlers has been included in the updated draft trawl fishery management plan based on recommendations developed from the 2019/2020 BRD gear trials under REBYC-II LAC. However, there has been a long delay in passing these instruments by Parliament, which means that all plans and processes that are incorporated in the Bill are on hold.
154. The strong regional institutional framework (WECAFC, CRFM, and OSPESCA) for fisheries management in this region will be instrumental for sustainability and achievement of long-term impacts. WECAFC has been an integral partner in this project and was instrumental in the development under REBYC-II LAC of the regional bycatch and discards management strategy, which will be presented for endorsement to the 18th WECAFC Session in 2022. In addition, the WECAFC/CRFM/IFREMAR/OSPESCA Shrimp and Groundfish Working Group has contributed to the development of the draft Subregional EAF Strategy and Fisheries Management Plan for the shrimp and groundfish fisheries of the North Brazil-Guianas Shelf (under a CLME+ sub-project). This strategy and management plan incorporates elements of the regional bycatch and discards strategy developed under REBYC-II LAC. The latter is closely linked with national fisheries management plans for shrimp and groundfish fisheries.
155. FAO, with its relevant national, regional and global programmes and capacity building initiatives, has a critical role in promoting sustainability. Other international and regional organizations the

project collaborated with - such as WWF, UWI-CERMES, CANARI, Caribbean Fisheries Training and Development Institute- CFTDI, and Caribbean Network of Fisherfolk Organization - enrich the region's institutional landscape that can potentially promote sustainability through their ongoing and planned projects and programmes. National agencies such as NOAA, with its expertise in fishing gear technology, will continue to support the countries as needed.

The terminal evaluation rating for institutional sustainability is Moderately Likely.

3.4.4 Financial sustainability

156. In general, financial resource allocation to fisheries management is inadequate in the countries, due to factors such as competing interests and priorities of the countries and insufficient resources. Nonetheless, some of the governments and other partner agencies plan to or have already allocated funds for continuation of activities. At the 2019 PSC meeting, all the participating countries reiterated their institutional commitment to ensure that the outputs and outcomes are sustainable beyond the end of the project.
157. For example, **Brazil**: The Secretariat of Fisheries and Aquaculture reiterated its institutional commitment to sustain the results achieved, including institutional and financial support to the regional management committees and support to the suggested normative changes; **Colombia**: Additional financial avenues are being pursued, such as the development of a Fishery Improvement Project for the Pacific shrimp fisheries; **Costa Rica**: project results are already incorporated in INCOPESCA's institutional work plans for the next couple of years, particularly the work with fisher organizations and fish workers, and other projects are financed by the Government based on REBYC-II LAC's results; **Mexico**: INAPESCA onboard observers' data gathering is likely to continue through government financing; transfer of REBYC-II LAC generated changes to other fisheries (e.g. the Pacific shrimp fishery and the shark/fish fishery); **Suriname**: NOAA continues to support Suriname in gear development and trials with funding from the Ministry's budget; through an Inter-American Development Bank technical cooperation grant, the fisheries data collection system is being improved, and will be expanded to include artisanal fisheries data collection; **Trinidad and Tobago**: will ensure that the Fisheries Division has the capacity to implement all of the draft normative measures developed by REBYC-II LAC; incentives for adoption of BRDs can be accessed under the Ministry of Agriculture, Land and Fisheries' Incentive Programme; and under its Recurrent and Public Sector Investment Programmes, the Fisheries Division intends to continue the observer and logbook programmes introduced under REBYC-II. There is good potential for replication and upscaling of revenue-generating activities (value addition to bycatch) developed in Colombia, Mexico, Suriname, and Trinidad and Tobago.
158. Opportunities to promote financial sustainability are presented by planned regional projects including the follow-on to REBYC-II LAC-Strategies, technology and social solutions for the reduction of unwanted and incidental bycatch in tropical Large Marine Ecosystem Fisheries (REBYC-III CLME+) and follow-on projects to those REBYC-II LAC collaborated closely with – CLME+ and the CLME+ shrimp and groundfish sub-project: "Protecting and Restoring the Ocean's Natural Capital, Building Resilience and Supporting Region-wide Investments for Sustainable Blue Socio-Economic development (PROCARIBE+)", and "EAF4SG: Enhancing capacity for the adoption and implementation of EAF in the shrimp and groundfish fisheries of the North Brazil Shelf Large Marine Ecosystem". Another potential project is "BE-CLME+: Promoting national blue economy priorities through marine spatial planning in the Caribbean Large Marine Ecosystem Plus". Another potential opportunity is through FAO's Blue Growth Initiative for sustainably developing fisheries and aquaculture.

159. Stakeholders from the fishing sector indicated that financial incentives for adoption of the BRDs should be considered, such as exemption of import tariffs, to encourage trawl fishers to start changing their fishing gears. According to the NOAA staff members interviewed, there is good potential for fabrication of the fishing gear locally, but the availability of the raw material locally may be a problem. Market forces (e.g. requirements from shrimp importing countries) provide a strong financial motivation for adoption of sustainable practices. Shrimp fishers targeting export markets are much more inclined to adhere to strict international sustainability rules because they export to the United States of America and Europe. Similarly, Marine Stewardship Council certification requirements (Suriname seabob fisheries) and ecolabelling will dictate the adoption of more sustainable practices.
160. The project received considerable levels of co-finance, which exceeded the amount pledged at GEF CEO endorsement (see section 3.6.4 on Co-finance). This includes unanticipated contributions from some institutional partners and the private sector. As seen in Appendix 4, a significant proportion consists of cash co-finance (nearly USD 4 million). This level of co-finance indicates good potential for financial sustainability since many of the partners should be able to continue to contribute to project objectives.
161. Risks to financial sustainability include political and economic upheavals, inflation, exchange rate fluctuations, and change in institutional priorities. Further, the COVID-19 pandemic rebuilding efforts in the countries present certain potential risks (e.g. reallocation of funds from fisheries management to more pressing needs) as well as opportunities (e.g. job creation and development of livelihoods).

The terminal evaluation rating for financial sustainability is Moderately Likely.

3.4.5 Progress to impact

EQ5. To what extent may the progress towards long-term impact be attributed to the project?

Finding 10. The project has created an enabling environment for progress towards the intermediate outcomes and ultimately the expected impact, and there is evidence of limited progress to impact at the pilot scale in some of the project sites. Replicating and upscaling the project's results is necessary to achieve the long-term impact. However, a single finite project is inadequate and further actions are needed to achieve the long-term impact.

Finding 11. There is a high likelihood that most of the key theory of change assumptions for achievement of impact will hold due to the transformational effect of the project. However, the effect of the COVID-19 pandemic poses a substantial risk to the achievement of the project impact although the project results can potentially support countries' economic recovery from the pandemic.

162. At the time of the terminal evaluation, there was already some evidence of limited progress towards long-term impact (GEO and PDO) at the project sites, although full realization of these global objectives requires implementation of the various legal frameworks and management plans and wide adoption of the modified gear by the fleets, among other measures. These processes require a longer time frame. However, through the achievement of all the planned outcomes as well as some unexpected ones, the project has succeeded in creating an enabling environment (including improved fishing gear technologies and practices to reduce bycatch and discards, legal frameworks and fishery management plans, improved knowledge base, partnerships and stakeholder capacity for EAF) for progress towards the intermediate outcomes (such as change in stakeholder behaviour and improved capacity for sustainable fishing, which are evident to varying degrees among the pilot sites and countries) and ultimately the impact, as seen in the theory of change diagram (Figure 3).

163. There is a high likelihood that most of the key theory of change assumptions for achievement of the long-term impact will hold due to the enabling conditions established and the transformational results of the project (see section 2.3 on Theory of change). An assumption that can severely jeopardize progress to impact (“Other policy drivers and externalities do not negatively impact on desired policy and management changes”) is related to the COVID-19 pandemic (an externality). As discussed elsewhere in this report, the pandemic has negatively affected project implementation in certain aspects although the project was able to adapt and deliver almost all its planned outputs and outcomes. Of concern, however, is the socio-economic impact of the pandemic on the countries and the region, which poses a substantial risk to the achievement of the GEO and PDO. On the other hand, 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.

3.5 Factors affecting performance

3.5.1 Monitoring and evaluation

EQ6. Monitoring and evaluation design: Was the M&E plan practical and sufficient? M&E implementation: Did the M&E system operate as per the M&E plan? Was the information from the M&E system appropriately used to make timely decisions and foster learning during project implementation?

Finding 12. The M&E plan was practical and adequate, and it was implemented appropriately and in a timely manner in accordance with GEF and FAO requirements, and adequately used in adaptive management to support project implementation.

The terminal evaluation rating for monitoring and evaluation is Highly Satisfactory.

3.5.2 M&E design

The terminal evaluation rating for M&E design is Satisfactory.

164. The project results framework was comprehensive, with definition of baselines, mid-term and end-of-project targets, outputs, outcomes and outcome indicators that facilitated methodological progress monitoring. However, the lack of indicators for the GEO and PDO constrained monitoring of progress towards these higher-level objectives. This exercise would have provided project stakeholders with a clearer idea on an ongoing basis about how the project was progressing towards contribution to the higher-level objectives and could have been useful in ensuring greater impacts. Indicators were defined for the planned outcomes, but not all of them were Specific, Measurable, Attainable, Relevant and Time-bound (SMART), and some were identical to the outputs and do not articulate the higher-level results, such as a required change. For example, Outcome 1.1 indicator (a) “Regional bycatch/discards strategy functional and under implementation” is similar to Output 1.1.2 (Regional strategy for shrimp/bottom trawl fisheries and bycatch management agreed and under initial implementation); and indicator (b) “Best practices shared through regional bodies (yes or no)”, is an action and not indicative of any change that may occur (outcome).
165. The evaluation matrix developed for monitoring of country targets using a colour-coded ‘traffic light’ system (dashboard) was an innovative and effective approach for monitoring of performance at the country level. The monitoring matrices showed country targets associated with the project outputs as relevant. Some of the targets were country-specific and adapted to the country’s context. Country target units were specified and used as indicators.
166. The Project Document stipulated the tools for monitoring of project performance, which are in line with the FAO and GEF monitoring and evaluation policies and guidelines. Tools included

annual project implementation report, semi-annual progress reports,¹² finance and co-finance reports, annual work plans and budgets, and mid-term evaluation and terminal evaluation. Monitoring and evaluation tasks and responsibilities as well as M&E budget were also specified in the Project Document.

3.5.3 M&E plan implementation

167. The quality of M&E plan implementation is Highly Satisfactory. The M&E plan was satisfactorily implemented in a timely and systematic manner and in accordance with FAO and GEF requirements. The Regional Project Coordination Unit and National Project Coordinators were in charge of the day-to-day monitoring. The M&E process was highly participatory, with the involvement of all the co-executing agencies, and coordinated by the Regional Project Coordination Unit and National Project Coordinators and facilitated through project progress review and planning meetings of the National Working Groups (national activities) and the PSC (regional activities). The country monitoring matrices fed into the annual project implementation reports. Work planning meetings were held each year prior to the PSC meetings and the resulting work plan and budget presented to the PSC for review and approval. The PSC met annually and at times, meetings were held virtually; meetings were well-attended, productive and members very engaged (as verified from the PSC meeting reports and stakeholder interviews). PSC meeting reports were published in English and Spanish. Several backstopping and supervision missions were undertaken by the Regional Project Coordinator to the participating countries, and mission reports prepared. The mid-term evaluation was initiated in 2018 and concluded in 2019; it assigned the project an overall rating of Moderately Satisfactory, due largely to the slow rate of delivery in the first half of the project.

3.5.4 Quality of M&E

168. The quality of M&E is Highly Satisfactory. The overall quality of M&E was high and supported project implementation and adaptive management throughout implementation. A series of M&E reports corresponding to the various tools (mentioned above) were produced. The PIRs were very comprehensive and for the most part the ratings (HS to HU) jointly assigned to the achievement of outcomes (by the RPC, BH, LTO, and FLO) were found by the terminal evaluation to be realistic. Assignment of the cumulative percentage completion of project outputs for each reporting period facilitated the tracking of progress towards achievement of outputs. Financial planning and monitoring were meticulous. In general, the mid-term evaluation findings were valid at the time it was conducted and based on adequate evidence. Most of the mid-term evaluation recommendations were accepted/partially accepted by the PSC and contributed to improving project performance in several key areas.

3.5.5 Stakeholder engagement

EQ7. To what extent were actors, such as civil society, indigenous population or local communities and private sector involved in project design or implementation, and what was the effect on the project results?

Finding 13. One of the project's biggest and most transformational accomplishments is the high level of engagement of a diverse range of stakeholders, which has exceeded expectations. This has contributed significantly to the achievement of the planned outputs and outcomes and will help promote sustainability.

¹² Merged with the PIR.

Finding 14. Engaging stakeholders in the project countries encountered some challenges that were due to factors such as internal political and institutional changes in the countries, as well as distrust and dissatisfaction with government fisheries policies.

Stakeholder engagement is rated as Highly Satisfactory.

169. There is no doubt that one of the project's biggest and most transformational accomplishments is the high level of stakeholder engagement, as demonstrated in the strategic partnerships for project execution and the establishment of operational multi-stakeholder platforms in the participating countries. This is even more impressive considering that REBYC-II LAC did not have a formal stakeholder engagement plan. Project implementation was centred on a highly participatory, multi-stakeholder process that was fundamental to the delivery of the planned outputs and outcomes, and overall good project performance. Among the key stakeholders engaged in the project were national fisheries authorities, technical and academic institutions, small- and large-scale trawl fisheries sub-sectors, fisherfolk organizations, NGOs, and regional organizations. Some of these groups have been historically antagonistic (e.g. small-scale and large-scale trawl fisheries; government and fishing communities), but the project helped to build trust and reduce tensions, bringing these disparate groups of stakeholders to the table for dialogue, consensus-building, and joint decision-making.
170. Noteworthy was the engagement of high-level government officials including ministers in some of the countries whose interest and commitment to the project were instrumental in some of the outcomes being realized. For example, in Costa Rica, the Environment Commission of the National Assembly invited the Regional Project Coordinator to one of its sessions to seek FAO's viewpoint on two draft laws related to the banning of the trawling fleet; the (Acting) Director of Fisheries of Trinidad and Tobago has participated in the PSC meetings and is personally involved as is the Minister of Agriculture, Land and Fisheries; in Suriname, the Minister (Agriculture, Animal Husbandry, Fisheries, and Forestry) is also very engaged and has signed the FMP.
171. As a result, the project achieved a high level of stakeholder buy-in, ownership and participation, which continued to drive the associated activities leading to positive outcomes for sustainable bycatch management in the countries' trawl fisheries. Noteworthy was the participation of trawl fishers themselves in the design and testing of the BRDs, which promoted the buy-in and ownership that is critical for their adoption. This is well-exemplified in Brazil, where the largest net builder together with the *Sindicato dos Armadores e das Indústrias da Pesca de Itajaí e Região* (SINDIPI) and *Sindicato das Indústrias de Pesca, da Aquicultura e das Empresas Armadoras e Produtoras, Proprietárias de Embarcações de Pesca do Estado do Pará* (SINPESCA) associates are already testing BRD models they themselves have developed. In Brazil, Colombia, Costa Rica and Mexico, strategic partnerships forged between the national fisheries authorities, technical institutes and NGOs (Colombia and Costa Rica) for project execution contributed to the project's resilience in the face of institutional instability and political changes. Importantly, the multi-stakeholder platforms have been formalized (or will be in the case of Trinidad and Tobago when the Fisheries Bill is passed) through government decrees. This increases the possibility that they will be sustained and continue to function, which will be vital for the achievement of the project's long-term impacts. Developing stakeholders' capacity for EAF, co-management and enhanced livelihoods as well as strengthening fisherfolk organizations are also notable achievements.
172. The fact that stakeholders view FAO as a neutral and transparent organization accounted in large part to the success achieved in engaging them. In some cases, FAO and the Regional Project Coordinator have had to act as mediators where there was conflict (e.g. between INAPESCA and CONAPESCA in Mexico; between the FAO consultant conducting the gear trials, Fisheries Division observers, and the captain and crew of the vessel). Not to be underestimated, however, was the

crucial role played by the Regional Project Coordinator and National Project Coordinators who spent a significant amount of their time in building and maintaining partnerships. Collaboration with other regional projects, particularly the CLME+, and regional frameworks such as WECAFC, CRFM, and the WECAFC/CRFM/INREMER/OSPESCA Shrimp and Groundfish Working Group was essential for the achievement of the regional targets. Together, the regional frameworks and the national multi-stakeholder platforms constitute a cohesive mechanism that provides an enabling environment for sustainable trawl fisheries in the region. Sustaining this mechanism will be necessary in the continuing drive towards more sustainable trawl fisheries in the countries and region. As previously discussed, sustaining the national platforms will be facilitated through their incorporation in government decrees and legislation. At the regional/subregional levels, sustainability may be facilitated through the regional and subregional fisheries bodies.

173. Achieving this level of stakeholder participation was not without challenges, however. Some stakeholders in the fishing sector feel aggrieved because their concerns are not satisfactorily addressed by the government (as expressed, for example, by trawl fishers from Trinidad and Tobago). In Mexico, stakeholder engagement was complicated by the reduction of the fishing subsidy programmes and limited access to international markets, while in Costa Rica the trawl license ban created a high level of animosity among the affected trawl fishers. In Brazil, many interruptions by the Government related to fisheries management have negatively impacted fisheries stakeholders over the past few years.

3.6 Cross-cutting issues

3.6.1 Environmental and social safeguards

EQ8. To what extent were environmental and social concerns taken into consideration in project design and implementation? Has the project had any unintended, adverse environmental and social consequences?

Finding 15. Social safeguards are embedded in the project's design, as articulated in the PDO and incorporated in the principles of EAF and the SSF Guidelines. Particular consideration was given to the role of women in the value chain and strengthening their capacity. Environmental safeguards are embedded in the project GEO, with one of its principal aims being to reduce and mitigate the risks to biodiversity and benthic habitats from harmful trawl fishing practices. Reducing bycatch can have adverse consequences for individuals who are dependent on bycatch for livelihoods.

174. The project recognizes the inextricable link between environmental sustainability and socio-economic development, which underpins the global objectives (GEO and PDO). During the project's endorsement phase, FAO conducted an environmental and social review of the project and found that it would have minimal or no adverse environmental or social impacts. The project is aligned with FAO Environmental and Social Safeguard Standards, and with the GEF Policy on Environmental and Social Safeguards. It recognizes the dependence of coastal communities in the participating countries on fisheries and bycatch for local livelihoods and food security, and the potential adverse impact of reduction in the quantity of bycatch on these communities. Therefore, to minimize these impacts, social safeguards are articulated in the PDO and have been embedded in the project's design, for example, by incorporating the principles of EAF and the SSF Guidelines. The PDO explicitly addresses food security and poverty eradication through livelihoods enhancement and diversification (Component 3). Although progress in this Component has lagged compared with the other Components, the project has demonstrated the potential for enhancing livelihoods and, furthermore, has strengthened the capacity of community members for revenue-generating activities (value added products) and participating in the value chain, and established or strengthened fisherfolk organizations. Particular consideration was given to the

role of women in the value chain and to strengthening their capacity in different areas (see section 3.6.2 on Gender).

175. With respect to environmental safeguards, one of the project's principal aims is to reduce and mitigate the risks to biodiversity and habitats from unsustainable trawl practices. Therefore, reducing environmental risks (from trawling) is embedded in the project's GEO. Its implementation does not pose any environmental risk. However, developing enhanced livelihoods from bycatch can have a negative environmental feedback if a demand is created for more bycatch as raw material for value added products, thereby undermining the project's environmental objectives.

3.6.2 Gender

EQ9. To what extent was gender taken into account in designing and implementing the project? Was the project implemented in a manner that ensures gender equitable participation and benefits as well as women empowerment?

Finding 16. The project design explicitly incorporates gender considerations and the project has contributed to elevating the visibility of women, improving the understanding of their role in the value chain, and strengthening their capacity for enhanced livelihoods, among others, but further work needs to be done to empower them for participation in the value chain. In general, more men than women participated in the project, including in its implementation.

176. While the fishing industry, particularly harvesting, is traditionally male-dominated, women play important roles in virtually all nodes of the value chain, except harvesting. Among these roles are vending, processing and packaging of fish and shrimp products as well as other auxiliary roles such as ice vending. Women are also dependent on bycatch for livelihoods and as a source of food for their families, and as such can be adversely affected by a reduction in the quantity of bycatch that is landed. Yet, there is limited recognition and understanding of the role of women in trawl fisheries and they are not usually targeted by fishery and gender policies. REBYC-II LAC acknowledged this situation and explicitly addressed the role of women (and other vulnerable groups) through capacity building of women and the promotion of decent work (Component 3). Activities in the countries included gender analysis, value chain analysis with a focus on the utilization of bycatch, decent work assessment in the fishing industry, and capacity building of women groups. These studies elevated the visibility of women in the value chain and improved the understanding of the role of women in the shrimp trawling fishery and the potential impacts of a reduction in bycatch.
177. In addition, there were more tangible achievements regarding the role of women. For example, it identified opportunities for enhanced fisheries and non-fisheries livelihoods for women and strengthened their capacity for pursuing such livelihoods. In Mexico, women were involved in developing value-added products from bycatch, which are to be commercialized. Colombia completed business plans for the use of discards by women workers ('platoneras'); and a national women fishers forum drafted an action plan for women in fisheries. In Costa Rica, REBYC-II LAC supported one woman's cooperative to develop a management plan for its shellfish fishery and to obtain fishing licenses for all their members, thus regularizing their activity and leading to secure access and incomes. Two women organizations (in Puntarenas and Barra del Colorado RFMA) with about 150 women were created and strengthened by the project with respect to the women's role as shrimp processors. Suriname completed studies on bycatch supply chain and role of women in industrial trawl fishing value chain. In Trinidad and Tobago, a value chain study and a gender study were conducted, and recommendations made for further investment and training, which was subsequently provided. The latter included training courses in fish processing,

salting and drying, etc. in which many women participated but were slightly outnumbered by men.

178. In terms of the participation of women in project execution and activities, overall, there was a greater number of men than women (e.g. the coordinators were predominantly men) although in some countries (e.g. Trinidad and Tobago) the Fisheries Division staff involved in the project were mostly women. Where gender-disaggregated data was available, in general more men (60 percent) than women (40 percent) participated in project events such as workshops. Stakeholders who responded to the question on gender agreed that the participation of women in project activities could have been greater. The project M&E system did not directly track and comprehensively report gender-disaggregated data, although the overall proportion of women participants in project workshops is included in the PIR and some workshop reports indicate the gender ratio of the participants. In addition, relevant studies conducted (such as value chain and gender analysis) have highlighted women's participation in trawl fisheries and documented the associated gender ratios.
179. REBYC-II LAC helped the countries to recognize the role of women in trawl fisheries and the need to integrate gender in the management of this sub-sector. Moreover, it identified concrete opportunities for enhancing livelihoods in some of the countries and strengthened the capacity of women to participate in the value chain. But more needs to be done to integrate the results of the various studies on gender in the management of trawl fisheries and in promoting decent work in fisheries for women as well as men. The effects of the implementation of the fisheries management plans and bycatch reduction measures on women and other vulnerable groups should be monitored and appropriate measures to mitigate potential negative impacts identified.
180. Regarding the involvement of indigenous peoples, although no formal Free, Prior and Informed Consent (FPIC) consultation was undertaken, according to the Project Document, representatives of indigenous peoples were involved in national stakeholder consultations during the project preparation phase to identify stakeholders' needs and priorities as well as national and local activities. During project implementation, in Suriname the project engaged with an indigenous fishing village (Galibi) whose new fisherfolk organization is one of the five created under the project. This organization represents Galibi in the national fisherfolk organization. In Colombia, the project actively engaged with Afro-descendant communities, through the community councils.

3.6.3 Knowledge management

EQ10. How is the project documenting and sharing its results, lessons learned and experiences, and is this adequate? Are communication and knowledge products targeted to different audiences?

Finding 17. The project has generated an immense volume and diverse array of documents. However, inadequate provisions for knowledge management/communication in the project design constrained the production of appropriate knowledge management products and their effective dissemination in the first half of the project, especially to local communities and decision makers. 'Cross-fertilization' and sharing of lessons and experiences among the national project teams were also limited. A knowledge management consultant contracted in 2020 as well as project partners are helping to address some of these issues.

181. One of the recommendations of the REBYC-II LAC mid-term evaluation specifically focused on knowledge management: "To Project Coordination and country-level partners: Generate knowledge management products and user – friendly materials, especially in order to reach stakeholders at different levels (policy and decision-makers, fishers, etc.)." The REBYC-II LAC mid-term evaluation found that there were weaknesses in knowledge management and audience-

specific outreach and communication. Furthermore, the mid-term evaluation found that while communication was suitable between the Regional Project Coordinator and the project national level coordinators, it was not adequate at the country level given that the information did not fully permeate internally to country level stakeholders.

182. This situation arose mainly from the fact that there were no explicit budget provisions for knowledge management from the start of the project. Knowledge management was the responsibility of the national coordinators, who were not themselves knowledge management experts and whose coordination duties and technical activities limited the time available for it. No capacity building on knowledge management was attempted in the countries for the project teams. A project of this complexity with diverse countries and range of stakeholders and the large amount of information to be generated through the various activities, required an appropriate knowledge management/communication strategy to be developed and a dedicated knowledge management expert to be involved from the start. Based on the mid-term evaluation recommendation, a knowledge management consultant was hired in 2020, with funds saved from the curtailment of travel and project activities due to the COVID-19 pandemic.
183. Because of the limited budget for regional level forums and to some extent the language barrier among other factors, 'cross-fertilization' and sharing of lessons and experiences among the participating countries have been limited, although some interaction has taken place between the Spanish speaking countries, and between Suriname and Trinidad and Tobago. This was a missed opportunity for learning during project implementation. It is important that data and information collected under the project and in the post-project period be made available at the regional level for the monitoring of the regional strategy and to support WECAFC's Working Groups. Opportunities for sharing data exist through FAO's initiatives and programmes related to data including the WECAFC-Fisheries and Resources Monitoring System regional database being developed.
184. The project has generated an immense volume of data as well as information spanning a diverse range of topics. Among the documents produced are technical reports, studies and assessments, workshop reports and legal documents (e.g. government decrees), which are national or regional in geographic scope. Notable is the publication in 2020 of a GEF Good Practice Brief¹³ featuring the REBYC-II LAC project, which attests to the project's achievements and performance. The terminal evaluation team reviewed some of these documents and found that in general the contents are of a high quality and very informative. Given the scientific relevance of many of the project results, the terminal evaluation learned that FAO and executing partners are preparing scientific papers for the academic community and finalizing many others for publication as FAO technical papers, all of which will be peer-reviewed.
185. With the assistance of the knowledge management consultant, knowledge management products and communication materials have been drafted, for example, "Value chains in trawl fisheries in Latin America and the Caribbean- Integration and analysis of national studies", and "Management plans in bottom trawl fisheries in Latin America and the Caribbean under an ecosystem approach" (both currently only in Spanish). In addition, infographics on the project results in each country have been prepared. Other products include guidelines, species catalogues, videos produced by the country teams (in national languages), and technological documents for the wider fisherfolk community and national fisheries authorities.

¹³ Featured projects are selected by the GEF Secretariat from a pool of nominations by GEF agencies, taking into consideration approaches used to generate multiple global environmental benefits and co-benefits, and to achieve clear results and/or sustainability.

186. Information dissemination occurred through email, the project website (which hosts a REBYC-II LAC discussion forum), and various project forums such as workshops, PSC meetings and the multi-stakeholder committees established in each country, and social media. Some partners are using their own websites and social media platforms for dissemination, for example, INVEMAR (Colombia), which has produced numerous reports as well as videos and other communication material. FAO's local and regional offices in the Americas have started to disseminate information via Twitter and local websites, and project videos have been published on the FAO YouTube Channel. Discussions are ongoing for the creation of a regional WECAFC website, which will also facilitate sharing of project results. Some limited public awareness raising has been attempted through the mainstream media, and the use of this channel should be increased in the post-project period.
187. The extent to which the information permeates to the different stakeholder groups is variable, as was also found by the mid-term evaluation. There has been limited development of knowledge management products specifically targeted to decision makers and the trawl fisheries sector. Some fishing community members interviewed were not satisfied with the flow of information and the format in which information was available (some felt it was too technical), and were not aware of the results of the gear trials. More user-friendly knowledge management products tailored to the needs and capacities of the different groups of stakeholders are currently being developed by the Regional Project Coordination Unit and project partners.

3.6.4 Co-finance

EQ11. To what extent did the expected co-financing materialize, and how did shortfall in co-financing, or materialization of greater than expected co-financing affect project results?

Finding 18. Co-finance realized at the time of the terminal evaluation exceeded the amount pledged at CEO endorsement by nearly USD 750 000. This includes a high level of cash co-finance and unanticipated contributions from some institutional partners and the fisheries private sector.

188. Co-finance contributions by type and source are presented in Appendix 4. It is noted that current economic conditions have resulted in the depreciation of currencies across the region, particularly affecting the value of the Mexican and Colombian Pesos and the Brazilian Real in relation to the USD. There may be differences between the nominal value in USD of co-financing and the original local currency values calculated in 2014-2015 (i.e. local currency expenditures remain equal to the original commitments, but the dollar equivalent is lower). Overall, however, the level of co-finance realized has exceeded the pledged amount, compensating for any potential shortfall due to fluctuations in the exchange rate of local currencies to the USD.
189. The total co-finance (cash and in-kind) realized was USD 17 944 705. This exceeded the amount at CEO endorsement of USD 17 198 491 by USD 746 214. There was a significant level of cash co-finance (at least USD 3 931 369, since in some cases cash and in-kind co-finance contributions were combined) and unanticipated contributions from some institutional partners and the private sector (USD 1 048 287). Notable is the substantial contribution from the private sector, which amounted to USD 1 504 092. Of this amount, USD 117 110 (about 8 percent) was cash co-finance and the rest in-kind co-finance that covered contributions such as the use of private trawlers for gear trials. The level of co-finance realized demonstrates a high level of buy-in of the project's institutional partners and the private sector.

4. Lessons learned

190. The following are some key lessons that emerged from project implementation:

Lesson learned 1. A bottom-up approach to the identification of the needs to be addressed by a project, whereby stakeholders are engaged in the process from the beginning, promotes greater stakeholder buy-in, ownership and participation, and increases the prospects for project success and sustainability of its results.

Lesson learned 2. Delegating a strong technical or academic institution to work alongside the government agency for project execution in the participating countries is an effective and efficient strategy. Not only does the partner institution provide support in specific areas according to its mandate and area of competence, but it can help to cushion the project against adverse impacts of political instability and other changes in the government, thereby minimizing the potential disruptions to implementation (e.g. as seen in Brazil). In addition, such an arrangement can be particularly effective in increasing stakeholder involvement where there is distrust of the government within the fisheries sector.

Lesson learned 3. Embedding an FAO administrative/operational consultant within the national Fisheries Authority provides much needed support to the government officers involved in the project, allowing them more time to focus on technical and other aspects of project execution, and facilitates smoother implementation (Suriname, Trinidad and Tobago).

Lesson learned 4. Where the participating countries are diverse, with different operating contexts, level of capacity, etc., it is important that the project design be flexible so that targets and objectives are realistic and appropriate for the local context while at the same time can contribute collectively to overall project outcomes and objectives.

Lesson learned 5. The absence of a knowledge management/communication strategy and associated expert and budget provisions from the start of the project can negatively affect stakeholder engagement, sharing of lessons and experiences, and efficiency. This can also reduce the time of the regional and national coordinators available for coordination and execution of activities.

Lesson learned 6. Engaging fishers from the start in the design and testing of the fishing gear, using their knowledge and experience, builds buy-in and ownership, which is crucial for future adoption of the gear in their fishing operations and for encouraging other fishers to do the same. The only way a significant and lasting change can happen in the fishery is by being driven by the fishers themselves.

Lesson learned 7. Fishing has an important social dimension, in addition to technological and environmental, consideration of which must be at the forefront when trying to get the buy-in of fishing communities, especially where they feel aggrieved and dissatisfied by how their concerns are addressed by the government. Fishing is a way of life for fishing communities in some countries, which makes change particularly challenging. It is important for them to understand how the project will benefit them including how the expected improvement in the environmental state will also positively affect them.

Lesson learned 8. The process adopted in producing an output or outcome is just as important as the deliverable itself and yields additional benefits. For example, promoting a high level of stakeholder engagement, as demonstrated in the strategic partnerships for project execution and the establishment of operational multi-stakeholder platforms in the participating countries, can be transformational and can contribute to sustainability. Similarly, developing a fisheries management plan in consultation with stakeholders and using a bottom-up approach builds buy-in and ownership, which increases acceptance and likelihood of compliance with the plan when it is implemented.

Lesson learned 9. Developing partnerships and executing arrangements as well as building trust among stakeholders is time-consuming and inadequate time at the beginning of the project for these processes,

before start of on the ground activities, can delay implementation and reduce efficiency and cost-effectiveness.

Lesson learned 10. South-South cooperation, where some participating countries have certain strengths and expertise that are required but lacking in the other countries (as seen between INCOPECA and INVEMAR) is an effective strategy to support technology transfer and capacity building and strengthen the regional component and the programmatic approach of the project.

Lesson learned 11. Because of the complexity of implementing EAF, it is unrealistic to expect that the GEO and PDO can be achieved through only a single project within its finite time frame.

5. Conclusions and recommendations

5.1 Conclusions

Conclusion 1. Relevance. The project has continued to be relevant to the countries, FAO and GEF, and more so to the countries owing to recent developments that make it more of an imperative (socially and economically) to adopt sustainable trawl fishing practices. Its results will continue to contribute to specific objectives and priorities regarding sustainable fisheries and development objectives. Importantly, the project's relevance to the countries has increased because of recent developments such as the trawl ban in Costa Rica by the Government, and the United States embargo on the import of wild-caught shrimp from Brazil, Mexico, and Trinidad and Tobago due to the inadequate use of TEDs in these countries' trawl fisheries. The project's results related to the reduction of trawl bycatch and discards can support the lifting of the various restrictions. In addition, the drive by the countries to develop a blue economy and to 'build back better' in the context of the COVID-19 pandemic has made the project even more relevant to the countries.

Conclusion 2. Effectiveness. While the project has created an enabling environment and its results are transformational in many respects, achievement of the GEO and PDO during the implementation period was overambitious, considering the relatively small project budget, short project time frame, and the complexity of implementing EAF. Further, the lack of GEO and PDO indicators in the results framework makes it difficult to assess their level of achievement. The project has not yet resulted in actual reductions in bycatch and discards or in increased incomes and livelihoods – except at the pilot scale in some of the countries – or improvement in biodiversity and benthic habitats on the fishing grounds. This is because of the time and effort required for the necessary processes such as uptake of project results, changes in stakeholder behaviour, and implementation of policies, legal frameworks and fisheries management plans, and capacity strengthening, as well as the response of the ecosystem to management measures, among others. Further, bycatch reduction alone is not sufficient to address the impacts of trawling since the trawl gear can also degrade benthic habitats, and when lost, can continue to do damage by ghost fishing. Ultimately, the long-term objectives cannot be achieved through only one finite project, and it is critical that activities continue.

Conclusion 3. Effectiveness. Although a few of the planned outputs and outcomes were only partially achieved, this is not likely to affect the overall impact of the project since collectively the planned and unintended positive results achieved provide a strong foundation to support sustainable trawl fisheries in the future. Most of the planned outputs and outcomes across the four project components were satisfactorily achieved, except in Component 3 (see Conclusion 4). Satisfactory achievement of their respective targets by all the six project countries accounted in large part for the overall high level of delivery. Equally important were the process and approaches that the project adopted in delivering the outputs, such as extensive stakeholder engagement and participation, forging strategic partnerships, adopting bottom-up approaches, and strengthening individual and institutional capacity. This has helped to build trust among stakeholders and created a significant level of stakeholder buy-in and ownership, which are crucial for the attainment of the long-term impact and sustainability.

Conclusion 4. Effectiveness. Overall, limited progress was made in Component 3 in relation to enhanced livelihoods and strengthening the capacity of women to participate in the value chain and integrating them in the management of the trawl sector. Contributing factors included the limited capacity of the co-executing institutions to pursue alternative or enhanced livelihoods, the short time frame, and the strong cultural traditions associated with fisheries in the countries, with the latter making fishers hesitant to adopt changes. Nevertheless, the achievements in some of the countries, especially Colombia, Costa Rica and Mexico, provide valuable lessons and experiences for replicating and upscaling. In addition, studies conducted by the project have generated important information on the value chain and socio-economic aspects, which can support the development of initiatives for enhanced livelihoods, value added products,

and better integration of women in the value chain. The participation of women, especially as project beneficiaries, is crucial for the ultimate achievement of the PDO, since women play an important role in the value chain and are highly dependent on trawl bycatch for livelihoods and food security. Therefore, identifying and mitigating any potential negative impact of a reduction of bycatch on women will be critical to achieving the long-term objectives.

Conclusion 5. Efficiency. The project was efficient and cost-effective, given that it successfully delivered its outputs and outcomes, exceeded expectations in some respects, and established an enabling environment for long-term impact while being implemented in challenging circumstances, with a limited budget and a tight timeframe. This was due in large part to the high quality of project implementation and execution by competent and dedicated project teams at the regional and country levels, the technical and administrative support provided by FAO and WECAFC throughout the project, the strategic partnerships for project execution including South-South cooperation, strong stakeholder engagement, and the ability to adapt to changing circumstances, among others. In countries that were found to be lagging by the mid-term evaluation, execution and efficiency improved significantly, which contributed to overall project efficiency and cost-effectiveness. On the other hand, the slow start of the project, administrative and capacity issues, the heterogeneity of the participating countries, political and institutional changes, the time and effort required to build stakeholder trust and partnerships, and the pandemic were among the factors that led to the need for a project extension and reduced efficiency. These were compounded by some of FAO's rules and convoluted administrative procedures, which continued to affect implementation although improvements were made since the mid-term evaluation.

Conclusion 6. Sustainability. There are reasonably good prospects for sustaining the project's results at the environmental, financial, social and institutional levels, and significant potential for replication and upscaling of some successful project initiatives and achieved outcomes. The transformational impact of the project and the creation of enabling conditions for sustainable trawl fisheries will be particularly important. However, further actions will be required by the governments and project partners to build on the foundation established and progress towards achieving sustainable, long-term impacts. This will include the wide adoption of the modified trawl gear, and the implementation and enforcement of the appropriate legal frameworks and management measures for sustainable trawl fisheries.

Conclusion 7. Sustainability. Social sustainability will depend on the level of buy-in and acceptance of the management measures by the key stakeholders, particularly trawl fishers, and the incentives provided for sustainable trawl practices. While the project has achieved a significant level of stakeholder buy-in and made efforts to incentivize stakeholders, social sustainability can be at risk from factors such as the low level of trust that still exists between some groups of stakeholders and concern about the impact of reduced bycatch on local livelihoods. Through the project, institutional frameworks have been developed or strengthened, and multi-stakeholder platforms established. However, their sustainability can be jeopardized, for example, by political and institutional changes in the countries. Partnerships with non-governmental institutions can help cushion the impacts of these changes. The regional institutional framework (WECAFC, CRFM, OSPESCA) will be vital in sustaining the project results and achieving long-term impact. Financial sustainability will be highly dependent on future projects and programmes supported by donor and private sector funding as well as national budgets.

Conclusion 8. Stakeholder engagement. Extensive stakeholder engagement, involving a wide diversity of stakeholders (international and regional organizations, government agencies, technical and academic institutions, fisheries private sector, and local communities including women) in different capacities was instrumental in helping the project adapt to the challenges encountered and achieve its outputs and successful conclusion. The co-finance realized, including the substantial amount of unanticipated co-finance, attests to the high level of stakeholder buy-in for the project. However, stakeholder engagement, building trust and nurturing partnerships can be lengthy and demanding processes. This can reduce the available time of the Regional Project Coordinator for coordination and technical backstopping, in the absence of a dedicated expert to manage stakeholder engagement and partnerships.

Conclusion 9. Knowledge management. The project has generated an immense volume of information, much of which technical. However, inadequate provisions for knowledge management and communication, including for the hiring of an appropriate expert and translation and the lack of a knowledge management/communication strategy, constrained the production of appropriate knowledge management products and their effective dissemination in the first half of the project, especially to local fishing communities. This could limit the uptake and sustainability of project results. Ongoing efforts by the knowledge management consultant, who was hired in the final year of implementation, and project partners to produce and disseminate a range of knowledge management products tailored to different groups of stakeholders are crucial to ensure that the momentum created is not lost and to promote uptake of project results.

5.2 Recommendations

191. The following recommendations aim to provide guidance for activities to sustain the results of the REBYC-II LAC project, and to improve similar future FAO/GEF projects.

Recommendation 1. To FAO, project countries and co-executing partners of REBYC-II LAC. Within one to two years after project closure, implement actions to build on the foundation created by REBYC-II LAC to facilitate progress towards long-term impact (GEO and PDO).

192. The project has established an enabling environment for achievement of long-term impact and generated significant momentum in the region and the countries. However, the momentum can be quickly lost and the enabling environment, though generally robust, can be undermined by unforeseen developments. Therefore, it is recommended that actions are taken in a timely manner (within one to two years after project closure, depending on the activity) to build on the project results and promote sustainability and the achievement of long-term impact, by, among others, showcasing and sharing results and experiences including to decision makers and trawl fishing communities; upscaling and mainstreaming results; maintaining partnerships; continuing key activities (including through FAO ongoing programmes, technical cooperation projects); accelerating the endorsement and implementation of pending legislation and management plans; continuing to build capacity in the region for implementation of EAF through legal and policy instruments (by, for example, using the tools and guidelines developed by FAO Law Division); providing incentives to stakeholders; pursuing commercialization of the new value added products; and continuing to build trust among stakeholders.

193. **Recommendation 2.** To FAO GEF Coordination Unit, FAO technical divisions and GEF. To improve the design and implementation of future projects including REBYC-III CLME+, the following are recommended:

Project design/follow on projects

- i. Set more realistic GEO and PDO, with associated 'SMART' indicators; and ensure the development of an adequate theory of change during the design stage.
- ii. Incorporate other measures and gear modifications for minimizing trawling impacts on benthic habitats and benthos (e.g. gear modifications that reduce physical contact and the penetration depth of the gear into the seabed, and that minimize ghost fishing).
- iii. Place more focus on gender and livelihoods, private sector engagement/co-management, incentives for adoption of alternative fishing gear, ghost fishing, and fundamental differences between small-scale and large-scale trawl fisheries in the design of bycatch reduction strategies and other management measures.

- iv. Align REBYC-III CLME+ with other planned regional projects (PROCARIBE+, EAF4SG) to avoid duplication and build synergies; and minimize the time lag between the end of REBYC-II LAC and start of REBYC-III CLME+.

Institutional arrangements and administration

- i. Where appropriate, consider institutional arrangements for execution in which a technical or academic institute with the required competence is designated to work alongside the government co-executing agency.
- ii. Promote South-South cooperation between the appropriate countries such as those with high capacity and those with low capacity in specific thematic areas.
- iii. As recommended by the mid-term evaluation to FAO, continue to streamline and accelerate administrative and operational mechanisms in order to be more efficient in project implementation and harmonize administrative issues at the various levels at which the project operates (to be completed within one year of project closure).

Stakeholder engagement and partnerships

- i. Develop and implement a stakeholder engagement plan and allow adequate time at project start for stakeholder engagement, establishment of partnerships, institutional strengthening, and fostering trust among stakeholders before the start of on the ground activities.
- ii. Adopt operational modalities that may be more efficient, such as Operational Partners Agreements instead of LOAs. This would allow the engagement of partners from the project design stage and on a long-term basis.
- iii. Appoint a dedicated consultant to manage stakeholder engagement and partnerships (the knowledge management expert may be able to also serve in this role). Such responsibility should also be included in the terms of reference for the Regional Project Coordinators and national coordinators, if they are to support these processes.
- iv. Make provisions in the project budget for incentives to increase participation by local communities, especially women, including designating male and female members as community champions.

Recommendation 3. To Participating countries, FAO GEF Coordination Unit and GEF. Support the continuation of initiatives started under REBYC-II LAC for enhanced livelihoods and empowerment of women fish workers under follow-on projects and programmes.

194. These initiatives should build on the results, studies, lessons and experiences of REBYC-II LAC, with replication and upscaling as feasible. Where the required capacity of the co-executing partners is limited, involve the appropriate government agencies and institutions with the relevant mandate and expertise related to gender and livelihoods in the design and implementation of these initiatives. The effects of bycatch reduction on women and other vulnerable groups should be monitored and appropriate measures to mitigate potential negative impacts identified.

Recommendation 4. To the FAO GEF Coordination Unit. Develop an appropriate risk management plan with an adequate budget, and incorporate flexibility in the design of new projects to mitigate the potential impacts of any delays in project start up or unexpected political and institutional changes in the participating countries or co-executing agencies.

195. In the time period between project approval and the start of project implementation, which can be extended, and during project implementation, political, institutional, and social changes might occur that could affect the project context and implementation. Adapting to these changes may require certain modifications to be made, for example, to specific targets and institutional arrangements, to mitigate any potential negative impact on project implementation.

Recommendation 5. To FAO GEF Coordination Unit and GEF. Make adequate provisions in the project budget for communication and knowledge management throughout project implementation, including:

- i. Hiring of a dedicated project communication/knowledge management expert from the start of implementation and engaging local communication/knowledge management experts and local 'champions' at the country level for communication with local communities.
- ii. Preparation of a communication/knowledge management strategy at the start, which includes capacity building in this area for project personnel and partners.
- iii. Allocation of an adequate budget for translation, communication and knowledge management activities.
- iv. Where the Regional Project Coordinator and National Coordinators are expected to support knowledge management, this responsibility should be included in their respective terms of reference.
- v. Production and dissemination of knowledge management products that are targeted for the general public and local stakeholders.
- vi. Greater utilization of newsletters and mainstream media (e.g., embedding television personnel with the project).

Bibliography

Internal project reports

- REBYC-II LAC Project Document
- Annual Project Implementation Review Reports (2016, 2017, 2018, 2019, 2020)
- Project Progress Reports (2018, 2019)
- Project Steering Committee Reports
- Project Inception Report
- Back to Office Reports
- Annual Workplans
- Expenditure and Co-finance Reports
- REBYC-II LAC Midterm Evaluation Report (2018)
- Management response to the REBYC-II LAC Midterm Evaluation
- Summary of Activities and Outputs under the Third Letter of Agreement (LoA3) between FAO and the Suriname Department of Fisheries.
- Preliminary Results on Trials with Modified Square-Mesh Panel Bycatch Reduction Device in the Suriname Seabob Trawl Fishery.
- Bycatch and Discards, A Challenge for Sustainability within the Fishing Industry. An Investigation into the Drivers of Discards in the Suriname trawl fishery.
- Study on the Role of Women in the Suriname Trawl Fisheries.
- Liquid Fish Silage pilot project -Production and utilization of Liquid Fish Silage as organic fertilizer. Final report. REBYC-II LAC/LVV/FAO, Suriname.
- FAO Office memorandum: Suriname: FAO/IDB Cooperation Programme: Technical Assistance for Sustainable Fisheries Practices – Terms of Reference.
- Final Report on Deliverables of Outputs under the Letter of Agreement (LOA/020/2018) between FAO and the Ministry of Agriculture, Land and Fisheries, Trinidad and Tobago.
- REBYC-II LAC Industrial BRD Trials- 2019 and 2020 Trials. Report No 3-2020, April 2021. Trinidad and Tobago.
- Participatory GIS (PGIS) to support Ecosystem Approach to Fisheries for the Shrimp Trawl Fishery in Trinidad.
- Study on Drivers of Shrimp Bycatch and Discard Practices in Trinidad and Tobago.
- Services related to the diagnostic of the functionality of fisherfolk organisations in Trinidad and Tobago. Final Report, LOA/014/2019. CANARI.

Other documents

CRFM. 2019. Report of Meeting of CRFM Continental Shelf Fisheries Working Group (CRFM-CSWG) on Atlantic Seabob, *Xiphopenaeus kroyeri*, fisheries of Guyana and Suriname. CRFM Fishery Report –2019/1. 67p.

FAO. 2011. International Guidelines on Bycatch Management and Reduction of Discards. Rome, Italy. 73 pp.

FAO. 2016. Report of the Work Planning Workshop for the Sustainable Management of Bycatch in Latin America and Caribbean Trawl Fisheries (REBYC-II LAC) project. Bridgetown, Barbados, 9–12 September 2015. FAO Fisheries and Aquaculture Report No. R1147. Rome, Italy.

FAO. 2020. Report of the Third Meeting of the WECAFC/CRFM/IFREMER Working Group on the Shrimp and Groundfish of the Northern Brazil-Guianas, Paramaribo, Suriname, 26-27 November 2019 Bridgetown. FAO Fisheries and Aquaculture Report No. R1330. Bridgetown.

FAO. 2021. Report of the Fourth Meeting of the WECAFC/CRFM/IFREMER Working Group on the Shrimp and Groundfish of the Northern Brazil-Guianas Shelf. Virtual meeting, 18–19 November 2020. FAO Fisheries and Aquaculture Report. Bridgetown.

FAO. 2021. A diagnostic tool for implementing an ecosystem approach to fisheries through policy and legal frameworks. Rome, Italy.

FAO EAF-Nansen Project. 2016. A How-to Guide on legislating for an ecosystem approach to fisheries. FAO EAF-Nansen Project Report No 27. Rome, Italy.

FAO WECAFC. 2018. Draft Regional Strategy on the Management of Bycatch and Discards in Latin American and Caribbean bottom trawl fisheries. Ninth Session of the Scientific Advisory Group (SAG) of WECAFC. Bridgetown, Barbados, 19-20 November 2018. Internal document.

FAO WECAFC. 2018. Regional Strategy on the Management of bycatch and discards in Latin American and Caribbean [WECAFC] bottom trawl [shrimp and groundfish] fisheries. Working document, WECAFC/SAG/IX/2018/8. Ninth Session of The Scientific Advisory Group (SAG), Bridgetown, Barbados, 19-20 November 2018.

GEF. 2010. GEF-5 Programming Document. GEF/R.5/31/CRP.1.

GEF. 2018. GEF-7 Replenishment-Overview: GEF-7 Global Context and Strategic Priorities. GEF/R.7/11.

GEF. 2018. Updated Policy on Environmental and Social Safeguards. Policy: SD/PL/03.

GEF. 2019. The GEF Evaluation Policy. GEF Independent Evaluation Office. GEF/ME/C.56/02.

GEF and FAO. 2020. Sustainable Management of Bycatch in Bottom Trawl Fisheries: Improved institutional and regulatory frameworks through multi-stakeholder dialogue in Latin America and the Caribbean. GEF/FAO Good Practice Briefs-2020/1.

Jobe, K. and P. Fanning. 2019. Report of the training and national consultations on the ecosystem approach to fisheries (EAF) in fisheries management planning for the shrimp and groundfish fisheries of the North Brazil Shelf Large Marine Ecosystem, September 2019, Georgetown, Guyana; Paramaribo, Suriname; and Carapichaima, Trinidad and Tobago. CERMES Project Report to FAO. Centre for Resource Management and Environmental Studies, UWI Cave Hill Campus, Barbados. 39 pp.

Toppe, J., Olsen, R.L., Peñarubia, O.R. & James, D.G. 2018. Production and utilization of fish silage. A manual on how to turn fish waste into profit and a valuable feed ingredient or fertilizer. Rome, FAO. 28 pp.

Appendix 1. People interviewed (main report)

Country/organization	Last name	First name	Position
Suriname/Fisheries Dept, Min. of Agriculture, Animal Husbandry and Fisheries	Arjune	Zojindra	Deputy Director - Fisheries Management
	Radjes	Asraf	National Project Focal Point
	Bobb	Yolanda	Former Focal Point
Suriname/Fisheries sector	De Boer	Johnny	Marisa Fisheries N.V., Industrial Fishery Representative
	Sys	Kim	Marisa Fisheries N.V.
	Lall	Mark	FFO's SUNFO and Visserscollectief, Artisanal Fisheries Representative
Trinidad & Tobago/Fisheries Div, Min. Agriculture, Land and Fisheries	Lucky	Nerissa	Director of Fisheries (Ag)
	Ferreira	Lara	Fisheries Officer
Trinidad & Tobago/Institute of Marine Affairs	Kishore	Rosemarie	Senior Research Officer (Fisheries)
	Solomon	Farahnaz	Research Officer (Fisheries)
Trinidad & Tobago/Fisheries sector	Balram	Soomraj	Trawler owner
Trinidad & Tobago/Fisheries sector	Khan	Reshard	Trawler owner
Trinidad & Tobago/Fisheries sector	Mohammed	Ramzan	Trawler owner
Caribbean Fisheries Training and Development Institute (CFTDI), Trinidad & Tobago	Huggins	Kirton	Curriculum Design & Training Manager
Caribbean Fisheries Training and Development Institute (CFTDI), Trinidad & Tobago	Slinger	Keegan	Product Development Manager
Caribbean Natural Resources Institute (Trinidad & Tobago)	Ramlogan	Neema	Technical Officer
National Oceanic and Atmospheric Administration (USA)	Foster	Daniel	Research Fishery Biologist
National Oceanic and Atmospheric Administration (USA)	Hopkins	Nick	Fisheries Methods and Equipment Specialist
University of the West Indies, Cave Hill, Centre for Resource Management and Environmental Studies (CERMES)	McConney	Patrick	Senior Lecturer, Marine Resource Management Planning
WWF-Guianas	Hewitt	Michael	Oceans & Wildlife Officer
Conservation International Suriname	van Lavieren	Els	Programme Manager
FAO (Suriname)	Willems	Tomas	FAO Consultant/Technical project support- Suriname
FAO (Suriname)	Nidhansingh	Vidyawatie	FAO consultant/Administrative project support- Suriname
	Bennet	Judy Ann	Consultant

Country/organization	Last name	First name	Position
FAO (Trinidad & Tobago/Suriname country office, T&T)	Prescott	Neila Bobb	Assistant Representative-Administration FAO
	Sheppard	Marissa	Project Assistant
	Boxer	Heidi-Ann	Administrative Assistant
	Alleyne	Marion	Assistant FAO Representative - Programme
	Calvin Smith	Devern	Programme Assistant
FAO WECAFC	DieiOuadi	Yvette	Secretary of WECAFC
FAO SLC, Barbados	Moure Pena	Maya	Regional Project Coordinator
	Fuentevilla	Carlos	Regional Project Coordinator (former)
	Page	Estelle	Programme Officer
	Clarke	Renata	Budget Holder, Sub-Regional Coordinator for the Caribbean
	Mendoza Hill	Jeremy	Consultant, CLME+ Shrimp & Groundfish Sub-project
	Stavrinaky	Aristoteles	Knowledge management consultant
FAO RLC, Panama	Flores	Alejandro	Project Lead Technical Officer
FAO HQ	Gonzalez Riggio	Valeria	FAO-GEF Coordination Unit
	Bahri	Tarub	Project Task Force member (NFISR)
	Taconet	Marc	Project Task Force member (NFISI)
	Kuemplangan	Blaise	Project Task Force member (LEGN)
	Kalikoski	Daniela	Lead Technical Officer (Former)
	Lansley	Jonathan	FAO-NFIO
	Laurent	Yann	Consultant
	Varty	Nigel	Consultant

Appendix 2. GEF evaluation criteria rating table

FAO - GEF rating scheme	Rating	Summary comments
1) RELEVANCE		
Overall relevance of the project	HS	The project is highly relevant to all the participating countries and is aligned with the strategic objectives and priorities of GEF and FAO.
2) EFFECTIVENESS		
Overall assessment of project results	HS	Nearly all the planned outputs and outcomes have been achieved, some expectations were exceeded, and some unintended, positive results realized. The enabling environment created by the project and its transformational impact will contribute towards achievement of the GEO and PDO in the longer-term.
Outcome 1.1. Strengthened regional collaboration	HS	The regional strategy on the management of bycatch and discards was drafted and endorsed by the WECAFC/CRFM/OSPESCA Shrimp and Groundfish Working Group. It will be presented in 2022 to the 18th WECAFC Session for endorsement. Regional technical workshops and other activities helped to strengthen regional collaboration and the capacity of the REBYC-II LAC countries for EAF.
Outcome 1.2. Improved legal and institutional frameworks	HS	All the project countries have developed legislation and fisheries management plans that include trawl fisheries. Government endorsement has been received or is pending. Institutional frameworks have been established or strengthened in all the countries.
Outcome 2.1. Co-management of shrimp fisheries through EAF	HS	Trials with the modified trawl gear in all the countries except Costa Rica demonstrated substantial reduction in bycatch and other potential benefits. Multi-stakeholder platforms for co-management and EAF have been established or strengthened and are operational in all the countries.
Outcome 2.2. Enabling environment including incentives and promoting responsible trawl practices	S	In some of the countries, potential incentives were identified for bycatch management (including higher profitability of fishing operations using the BRDs) and new value added products created from bycatch, with potential for commercialization.
Outcome 3.1. Enhanced sustainable and diverse livelihoods created and gender equality promoted	MS	Income generating opportunities, particularly for women, were identified or introduced at the pilot sites in some of the countries, notably Colombia and Costa Rica, and to some extent Mexico. Overall, however, there was limited creation and diversification of livelihoods.
3) EFFICIENCY, PROJECT IMPLEMENTATION AND EXECUTION		
Overall quality of project implementation and adaptive management (implementing agency)	HS	Project implementation arrangements were satisfactory. In the first two years of implementation, delivery was slowed by administrative and bureaucratic issues internally in the countries as well as at the regional level. Actions were continuously taken by FAO to address the issues that were within its control and adapt to those outside its control.
Quality of execution (executing agencies)	S	The quality of execution varied among the countries due to factors such as internal administrative and bureaucratic issues, political and institutional changes, and limited administrative and technical capacity in some of them. However, adaptive management measures helped to improve the quality of execution even in the weakest countries, allowing them to deliver most if not all their respective targets. The execution arrangement involving the national fisheries authority and a technical partner was particularly effective.
Efficiency (incl. cost effectiveness and timeliness)	S	Factors that reduced efficiency included the delays encountered and need for no-cost extensions. However, the fact that the project delivered almost all its outputs and outcomes and exceed expectations in some cases – within budget and despite the challenges encountered – indicates an efficient and cost-effective project, overall.

FAO - GEF rating scheme	Rating	Summary comments
4) SUSTAINABILITY		
Overall sustainability	ML	There are moderate risks to overall sustainability due to moderate risks in all four dimensions of sustainability.
Environmental sustainability	ML	While environmental sustainability is embedded in the project's GEO, its achievement is not feasible through one finite project. Potential environmental gains can be undermined by the destruction of benthic habitats by trawling, which was not addressed by the project, and unsustainable practices in other fisheries as well as by external factors such as climate change, habitat destruction and marine pollution.
Social sustainability	ML	Some risks to social sustainability include concern by local communities over the impact of reducing bycatch on livelihoods and food security, the reluctance of trawl fishers to change their attitude and behaviour and adopt more sustainable trawl practices, the conflictive nature of trawl fisheries in the region, and high level of distrust among the public and private sectors.
Institutional sustainability	ML	Although the project has considerably strengthened the institutional framework in the countries, moderate risks to institutional sustainability are presented by factors such as political and institutional instability and inadequate human and technical capacity. The regional institutional framework represented by the regional fisheries bodies is likely to be sustained.
Financial sustainability	ML	Financial sustainability is promoted through future regional donor-funded projects, co-finance and national budgets, among others. Risks to financial sustainability include political and economic upheavals, inflation, change in national priorities and the COVID-19 pandemic.
5) FACTORS AFFECTING PERFORMANCE (M&E and stakeholder engagement)		
Overall quality of stakeholder engagement	HS	Effective engagement of a diverse range of stakeholders is one of the project's most significant and transformational achievements. It was instrumental in the successful delivery of the planned outputs and outcomes, and establishment of enabling conditions for sustainable trawl fisheries in the countries.
Overall quality of M&E	S	The M&E plan was practical and adequate, and it was implemented appropriately and in a timely and participatory manner, and in accordance with the requirements of the GEF and FAO.
M&E design at project start up	S	The project results framework was comprehensive, with baselines, mid-term and end-of-project targets, outputs, outcomes and outcome indicators. However, no indicators were defined for the GEO and PDO.
M&E implementation plan	HS	The M&E plan was implemented in a timely and systematic manner and in accordance with FAO and GEF requirements. The M&E process was highly participatory.
OVERALL PROJECT RATING	HS	The project has achieved all its outcomes and unintended positive results, some of which have had a transformational impact in the countries and the region regarding more sustainable trawl fisheries within an EAF framework.

Appendix 3. Rating scheme

PROJECT RESULTS AND OUTCOMES

Project outcomes are rated based on the extent to which project objectives were achieved. A six-point rating scale is used to assess overall outcomes:

Rating	Description
Highly Satisfactory (HS)	<i>"Level of outcomes achieved clearly exceeds expectations and/or there were no short comings."</i>
Satisfactory (S)	<i>"Level of outcomes achieved was as expected and/or there were no or minor short comings."</i>
Moderately Satisfactory (MS)	<i>"Level of outcomes achieved more or less as expected and/or there were moderate short comings."</i>
Moderately Unsatisfactory (MU)	<i>"Level of outcomes achieved somewhat lower than expected and/or there were significant shortcomings."</i>
Unsatisfactory (U)	<i>"Level of outcomes achieved substantially lower than expected and/or there were major short comings."</i>
Highly Unsatisfactory (HU)	<i>"Only a negligible level of outcomes achieved and/or there were severe short comings."</i>
Unable to Assess (UA)	<i>The available information does not allow an assessment of the level of outcome achievements.</i>

During project implementation, the results framework of some projects may have been modified. In cases where modifications in the Project impact, outcomes and outputs have not scaled down their overall scope, the evaluator should assess outcome achievements based on the revised results framework. In instances where the scope of the Project objectives and outcomes has been scaled down, the magnitude of and necessity for downscaling is taken into account and despite achievement of results as per the revised results framework, where appropriate, a lower outcome effectiveness rating may be given.

PROJECT IMPLEMENTATION AND EXECUTION

Quality of implementation and of execution will be rated separately. Quality of implementation pertains to the role and responsibilities discharged by the GEF Agencies that have direct access to GEF resources. Quality of Execution pertains to the roles and responsibilities discharged by the country or regional counterparts that received GEF funds from the GEF Agencies and executed the funded activities on ground. The performance will be rated on a six-point scale:

Rating	Description
Highly Satisfactory (HS)	<i>There were no shortcomings and quality of implementation or execution exceeded expectations.</i>
Satisfactory (S)	<i>There were no or minor shortcomings and quality of implementation or execution meets expectations.</i>
Moderately Satisfactory (MS)	<i>There were some shortcomings and quality of implementation or execution more or less meets expectations.</i>
Moderately Unsatisfactory (MU)	<i>There were significant shortcomings and quality of implementation or execution somewhat lower than expected.</i>
Unsatisfactory (U)	<i>There were major shortcomings and quality of implementation substantially lower than expected.</i>
Highly Unsatisfactory (HU)	<i>There were severe shortcomings in quality of implementation or execution.</i>
Unable to Assess (UA)	<i>The available information does not allow an assessment of the quality of implementation or execution.</i>

MONITORING AND EVALUATION

Quality of project M&E will be assessed in terms of:

- i. design
- ii. implementation

SUSTAINABILITY

The sustainability will be assessed taking into account the risks related to financial, sociopolitical, institutional, and environmental sustainability of project outcomes. The evaluator may also take other risks into account that may affect sustainability. The overall sustainability will be assessed using a four-point scale:

Rating	Description
Likely (L)	<i>There is little or no risk to sustainability.</i>
Moderately Likely (ML)	<i>There are moderate risks to sustainability.</i>
Moderately Unlikely (MU)	<i>There are significant risks to sustainability.</i>
Unlikely (U)	<i>There are severe risks to sustainability.</i>
Unable to Assess (UA)	<i>Unable to assess the expected incidence and magnitude of risks to sustainability.</i>

Appendix 4. Co-financing committed and realized by the end of the project

Sources	Name of co-financer	Type of co-financing	Amount confirmed at CEO endorsement (USD)	Expected total disbursement by the end of the project (USD)
National Government	INAPESCA, Mexico	Cash	407 000	422 716
National Government	INAPESCA, Mexico	In-kind	3 175 000	3 803 456
National Government	CONAPESCA, Mexico	Cash		26 335
State Government	Campeche State Government, Mexico	Cash		24 779
National Government	AUNAP/ Colombia	Cash/In-kind	877 023	2 602 943
Research Institute	INVEMAR/Colombia	Cash/In-kind	2 824 262	1 695 129
National Government	Trinidad and Tobago	Cash	102 344	352 754
National Government	Trinidad and Tobago	In-kind	1 263 484	618 879
National government	Ministry of LVV, Suriname	In-kind	1 330 000	807 572
National government	Suriname	Cash	355 000	25 500
National Government	NOAA, USA	In-kind	450 000	466 616
National Government	INCOPECSA, Costa Rica	Cash	200 000	365 991
International Organization	WECAFC	Cash	630 000	570 000
International Organization	WECAFC	In-kind	620 000	480 000
Civil Society Organization	CoopeSoliDar R.L., Costa Rica	Cash		91 094
International Organization	OSPESCA	In-kind		89 075
International Organization	FAO	Cash/In-kind	400 000	385 000
National Government	Brazil	Cash	1 577 189	1 564 095
National Government	Brazil	In-kind	1 577 189	1 577 189
Private Sector	CAMAPUN, Costa Rica	In-kind	300 000	221 690
Private Sector	UNIPESCA, Costa Rica	In-kind	100 000	
Private Sector	ACODIARPE and ASOARPESCOL, Colombia	In-kind	860 000	910 000
Private Sector	Pestolu, Colombia	In-kind	150 000	
NGO	Conservation International Colombia	Cash		148 000
NGO	WWF Guianas	Cash		44 200

Sources	Name of co-financer	Type of co-financing	Amount confirmed at CEO endorsement (USD)	Expected total disbursement by the end of the project (USD)
Private Sector	Heiploeg, Holsu, Marisa Fisheries, Moti Fisheries, SAIL, Suriname	In-kind		170 750
Private Sector	Haploeg, Holsu, Marisa Fisheries, Moti Fisheries, SAIL, Suriname	Cash		60 000
University	EPOMEX/ Mexico	Cash		45 982
University	EPOMEX/ Mexico	In-kind		17 851
Technical Institute	ITBOCA/Mexico	in-kind		12 356
Private Sector	CANAINPESCA/CSP Camaron, Mexico	Cash		57 110
Civil society organization	FIDEMAR, Mexico	Cash		46 888
Technical Institute	CETMAR-Lerma	Cash		43 167
University	Marist University of Merida, Mexico	Cash		14 647
Foundation	Biosphera Foundation (The Netherlands)	In-kind		20 400
Other	Institute for Agricultural and Fisheries Research (ILVO – Belgium)	In-kind		3 000
Private Sector	Trinidad and Tobago Industrial Fishing Association and Orange Valley Fishing Association members	In-kind		84 542
International Organization	Inter-American Development Bank	Cash		75 000
TOTAL			17 198 491	17 944 705

Source: FAO SLC.

Appendix 5. Stakeholder analysis

Key stakeholders	What role related to the intervention/evaluand?	How will they use the terminal evaluation?	What might they gain or lose from the evaluation?	How and when should they be involved in the evaluation?
<p>Active stakeholders with the authority to make decisions related to the evaluand.</p> <ul style="list-style-type: none"> ✓ FAO, FAO/SLC, WECAFC ✓ FAO project personnel ✓ Governmental authorities (national executing/implementing agencies) ✓ Funding agency (GEF) ✓ Project Steering Committee 	<p>Supervision, decision-making, financial execution and oversight, project implementation, monitoring and evaluation (M&E); implementing and sustaining project outcomes and results (government authorities).</p>	<p>Inform decision-making; provide accountability; implement (as relevant) the terminal evaluation findings and recommendations; uptake of terminal evaluation findings, recommendations and lessons in future projects and initiatives and sustaining project results; disseminate terminal evaluation report.</p>	<p>Knowledge, recommendations and lessons for developing and implementing future related projects and initiatives; improvement in project implementation and execution. No loss foreseen.</p>	<p>Reference and Steering groups.</p> <p>Throughout the entire evaluation process, from its earliest stages; manage the terminal evaluation (OED); provide information, feedback and evidence for the FE, according to their respective level of accountability and responsibility; review the terminal evaluation report, provide feedback and validate the findings; implement (as relevant) the terminal evaluation findings and recommendations.</p>
<p>Active stakeholders with direct responsibility for the evaluand.</p> <ul style="list-style-type: none"> ✓ Funding agency (GEF) ✓ FAO/SLC (Budget Holder, BH) ✓ FAO staff – headquarters and FAO offices in the participating countries (backstopping officers, technical advisers, Lead Technical Officer, etc.) ✓ Project Coordination Unit (FAO WECAFC) ✓ National implementing partners 	<p>Project execution (WECAFC); operational, administrative and financial management of the project (BH); financial oversight; project execution; coordination; M&E; provision of technical guidance/technical backstopping; in-country support.</p>	<p>Inform decision-making; provide accountability; uptake of terminal evaluation recommendations and lessons in future projects and initiatives.</p>	<p>Knowledge, recommendations and lessons for developing and implementing future related projects and initiatives; improvement in project implementation and execution.</p>	<p>Reference and Steering groups.</p> <p>Throughout the entire evaluation process, from its earliest stages; provide information, feedback and evidence for the terminal evaluation; review the terminal evaluation report, provide feedback and validate the findings.</p>
<p>Secondary stakeholders:</p> <ul style="list-style-type: none"> ✓ Partners (Regional bodies (CRFM, OSPESCA, 	<p>Responsible for, or support, specific project outputs and activities including technical support in some</p>	<p>Promote uptake of project experiences, recommendations and lessons as applicable.</p>	<p>Knowledge, experiences, recommendations and lessons for replication; improvement in project implementation and execution.</p>	<p>Advisory group.</p> <p>Support the evaluation team; provide information and documentation;</p>

Key stakeholders	What role related to the intervention/evaluation?	How will they use the terminal evaluation?	What might they gain or lose from the evaluation?	How and when should they be involved in the evaluation?
<p>CRFM/WECAFC/IFRE MER working group, UWI-CERMES, WWF, NOAA, etc.)</p> <ul style="list-style-type: none"> ✓ Other governmental entities or authorities (including country level GEF Operational Focal Point- OFP) ✓ Other FAO personnel, GEF Coordination Unit ✓ FAO OED 	<p>cases (CERMES, WWF, NOAA). Promote uptake of project results among member states (regional fisheries bodies). Co-financing. Provide national/local context for project execution in the countries (gov't entities); create enabling conditions for long-term impacts (gov't entities and regional bodies).</p> <p>Liaison between GEF Secretariat and national authorities (OFP).</p> <p>Project support.</p>	<p>Promote the use of, follow-up to, and action on evaluation recommendations related to GEF matters and directed at the regional, national and project levels (OFP).</p>		<p>review the FE report, provide feedback and validate the findings.</p>
<p>Stakeholders at the grassroots level who directly or indirectly benefit from the intervention. (Private sector individuals along the fisheries value chain including men, women and indigenous communities; artisanal and industrial fishing associations).</p>	<p>Project beneficiaries training and capacity strengthening; livelihoods enhancement and diversification; food security and poverty reduction; knowledge about more sustainable trawl practices; increased profitability of fishing operations (long-term impact); participate in project pilot activities including gear trials,</p>	<p>N/A</p>	<p>Knowledge and awareness</p>	<p>Learning group.</p> <p>Provide information/evidence and feedback during the FE investigation phase.</p>

Stakeholder analysis

Key stakeholders	What role related to the intervention/evaluation?	How will they use the terminal evaluation?	What might they gain or lose from the evaluation?	How and when should they be involved in the evaluation?
	contribute local knowledge and local context; promote project among local communities, etc. Key role in uptake and sustaining project results and achievement of project objectives in the long-term.			
Stakeholders at the grassroots level who do not benefit from the intervention. (Possibly disaggregated between women, men, girls, boys; other as appropriate).	Advocacy, contribute local/indigenous knowledge, fish consumers.	N/A	Knowledge and awareness	Learning group. Provide feedback to the FE related to certain evaluation criteria (e.g. relevance, sustainability, stakeholder engagement).
Other interest groups who are not directly participating in the intervention: - other development agencies working in the area - civil society organizations - other organizations	Advocacy; consumers increase in availability of and better consumer prices of fish and shrimps (long-term); integration of project results into own programmes; availability of relevant data and information for the project.	Potential to uptake experience, lessons and recommendations in their own activities.	Knowledge, awareness and learning; relevant experience, lessons and recommendations that may be applicable to their respective activities.	Learning group. Provide feedback to the FE related to certain evaluation criteria (e.g., relevance, sustainability, stakeholder engagement).

Appendix 6. Key stakeholders in Suriname

(Compiled by the project county team, Suriname)

Type	Name Company/Organization
Industrial fishery	Marisa Fisheries N.V.
	Holsu N.V.
	Heiploeg Group
	Deep Sea Atlantic N.V.
	SAIL
	Suriname Seafood Association (SSA)
	Suriname Industrial Fisheries Cooperative (SIFCO)
Fisherfolk Organizations	Suriname National Fisherfolk Organization (SUNFO)
	Fisherfolk Organization Commewijne
	Fisherfolk Organization Nickerie
	Fisherfolk Organization Galibi
NGO	WWF -Guianas
	Conservation International -Suriname
Government Authority	Coastguard -Suriname
	Fish Inspection Institute Suriname
	Directorate of Environment Ministry of Spatial Planning and Environment
	Maritime Authority Suriname
	Ministry Justice & Police /Maritime Police
	Directorate of Fisheries, Ministry of Agriculture, Animal Husbandry & Fisheries

Appendix 7. Key stakeholders in Trinidad and Tobago

(Compiled by the Fisheries Division and FAO Country Office)

The stakeholder agencies relevant to the project are as follows:

- i. Food and Agriculture Organization of the United Nations (FAO)
- ii. Ministry of Agriculture, Land and Fisheries
- iii. Fisheries Division, Ministry of Agriculture, Land and Fisheries.
- iv. Institute of Marine Affairs (IMA)
- v. Caribbean Fisheries Training and Development Institute (CFTDI)
- vi. The Environmental Management Authority (EMA)
- vii. The Ministry of Energy and Energy Industries
- viii. The Port Authority of Trinidad and Tobago
- ix. Town and Country Planning Division, Ministry of Planning and Development
- x. Maritime Services Division, Ministry of Works and Transport
- xi. Trinidad and Tobago Coast Guard
- xii. The University of Trinidad and Tobago – Chaguaramas Campus

Main universities:

- i. The University of the West Indies, St. Augustine
- ii. The University of the West Indies, Cave Hill, Centre for Resource Management and Environmental Studies (CERMES)

Main civil society organization:

- i. Caribbean Natural Resources Institute (CANARI)

Main private sector fishing/vendors organizations:

- i. Trinidad and Tobago Industrial Fishing Association
- ii. Dow Village South Oropouche Fishing Association
- iii. Felicity Charlieville Fishing Association
- iv. Orange Valley Fishing Association
- v. Orange Valley Pirogue Association
- vi. Otaheite Fisher Association
- vii. San Fernando Fishing Cooperative Society Limited
- viii. San Fernando Fishing Association
- ix. Trinidad and Tobago United Fisherfolk
- x. Orange Valley Vendors Association
- xi. Otaheite Vendors Association

Appendix 8. Evaluation matrix

CRITERIA	SUB-QUESTIONS	INDICATORS	MAIN DATA SOURCES
<p>1) Relevance</p> <p>To what extent is the project relevant to countries priorities, and GEF and FAO priorities and strategic objectives and programmes?</p>	<p>Has there been any change in the relevance of the project since the mid-term evaluation, such as new national policies, plans or programmes that affect the relevance of the project objectives and goals?</p> <p>Were the project outcomes congruent with the GEF focal International Waters (IW), countries priorities and FAO Country Programming Framework?</p> <p>How is the project responding to the actual national/sub-national environmental needs, programmes, and priorities set by the different Governments?</p> <p>Was the project design appropriate for delivering the expected outcomes? (Review starts from what assessed at mid-term evaluation). What are the strengths and weaknesses of the project design in terms of achieving the expected results?</p>	<p>Degree to which the project contributes to national priorities, objectives and programmes</p> <p>Appreciation from national stakeholders with respect to adequacy of project design and implementation to national realities and existing capacities</p> <p>Level of coherence between GEF IW focal area, FAO Country Programming Framework</p> <p>Degree of coherence between project expected results and project design and implementation approach</p>	<p>Project document; project and national results frameworks; project inception report</p> <p>National fisheries policies, management plans and programmes; country programming frameworks</p> <p>Background documents including relevant GEF and FAO strategies</p> <p>Key informant interviews (including FAO, WECAFC, national governments)</p> <p>TOC</p>
<p>2) Effectiveness</p> <p>To what extent has the project contributed to the achievement of stated environmental and development objectives? Were intended results achieved as expected and were there any unintended results?</p>	<p><u>Component 1.</u> What results has the project achieved in contributing to improved institutional and regulatory frameworks for shrimp/bottom trawl fisheries and its effective co-management? (institutional/policy support – contribution analysis)</p> <p><u>Component 2.</u> What results has the project achieved in strengthening bycatch management and responsible trawling practices within an EAF framework? Are the BRDs and other management measures introduced by the project adequate to achieve the expected results? Are the identified incentives adequate?</p> <p><u>Component 3.</u> What results has the project achieved in promoting sustainable and equitable livelihoods through enhancement and diversification?</p>	<p>All components: Actual level of achievement in relation to expected output and outcome indicators in project log frame (Discrepancies between expected outputs/outcome and actual achievements) attributable to the project; % targets met</p> <p>1. Changes in national policy, legislation, and institutional framework (to implement EAF) attributable to the project; Availability/status of Regional Strategy</p> <p>2. Availability of improved data and information; level of success in gear trials (e.g., % reduction in bycatch); level of stakeholders' acceptance/adoption of</p>	<p>Stakeholder interviews (including project beneficiaries and fisheries organizations, implementing/co-executing partners)</p> <p>Direct observations at pilot sites</p> <p>PIRs, PPRs, country monitoring matrices, PSC meeting reports, mid-term evaluation report</p> <p>Technical reports; regional strategy</p> <p>Reports of regional meetings (WECAFC, shrimp & groundfish working group)</p> <p>Project website</p>

CRITERIA	SUB-QUESTIONS	INDICATORS	MAIN DATA SOURCES
	<p>What is the likelihood that all remaining activities will be completed and outputs delivered in the remaining time? Are there any outputs that cannot be realistically delivered and how will this affect the associated outcomes?</p> <p>To what extent can the attainment of results be attributed to the GEF-funded intervention?</p>	<p>new management measures; number of persons trained and change in level of capacity</p> <p>3. Number of potential livelihood alternatives identified for both men and women and number of stakeholders affected and level of acceptance; number of community organisations strengthened or established through the project</p>	
<p>3) Efficiency</p> <p>To what extent has the project been implemented efficiently and cost-effectively?</p>	<p>(Implementation) To what extent did FAO deliver on project identification, concept preparation, appraisal, preparation, approval and start-up, oversight and supervision? How well were risks identified and managed?</p> <p>(Execution) To what extent did FAO and its co-executing partners effectively discharge their roles and responsibilities related to the management and administration of the project? Are the institutional implementing and execution arrangements appropriate/adequate and how did this function? Did the project experience delays in its execution that hindered the achievement of the objectives?</p> <p>To what extent has management been able to adapt to any changing conditions to improve the efficiency of project implementation? Have changes to the project (design, implementation, outputs, outcomes) been made and are they effective?</p> <p>Was the project cost-effective? How does the project cost/time versus output/outcomes equation compare to that of similar projects?</p>	<p>Timeliness of project preparation and start-up</p> <p>Level to which risks identified in project document were mitigated during implementation</p> <p>Adaptive management and project-level monitoring and evaluation systems, reporting, and project communications supporting the project's implementation</p> <p>Perception/experience of different actors on the efficiency of implementation</p> <p>Financial disbursements (rate, timeliness)</p>	<p>Project document</p> <p>Stakeholder interviews (FAO, national and regional coordinators, implementing and co-executing agencies, other project partners)</p> <p>PIRs, PPRs, PSC meeting reports, FAO support mission reports</p> <p>Annual work plans and budgets</p> <p>Communication between executing partners and FAO</p>

CRITERIA	SUB-QUESTIONS	INDICATORS	MAIN DATA SOURCES
<p>4) Sustainability</p> <p>What is the likelihood that the project results will continue to be useful or will remain after the end of the project?</p>	<p>To what extent has the project supported financial, institutional, socio-economic, and/or environmental improvements to sustain long-term project results?</p> <p>Have the project results been incorporated into national policies and programmes for shrimp trawl fisheries and have adequate resources been allocated?</p> <p>What processes has the project generated or supported that ensure sustainability?</p> <p>What are the key risks that may affect the sustainability of the project benefits?</p> <p>Does an enabling environment exist to ensure changes in fishing and management practices (e.g., human capacity, legal and institutional framework, financial resources, incentives)?</p> <p>Have other risks to sustainability been identified (climate change, market issues, etc.)?</p>	<p>Level of commitment of national and local institutions to provide resources (financial, human, technical) necessary to continue with relevant activities; mechanisms and policies being implemented, adopted, etc., to implement management measures and sustain results</p> <p>Level of acceptance/adoption of management measures by fishers; degree of change in stakeholders' behaviour</p> <p>Incentives; viability of opportunities for alternative livelihoods; stakeholders' willingness to effect change</p> <p>Sustainability strategy (tacit or explicit)</p>	<p>Stakeholder interviews (national agencies responsible for fisheries management, beneficiaries, CBOs, academia, regional organizations)</p> <p>National policy documents</p> <p>Country monitoring matrices</p> <p>Observations at project sites</p> <p>Technical project outputs</p> <p>TOC</p>
<p>5) Factors affecting performance</p>	<p>Monitoring and evaluation</p> <p>(M&E design) Was the M&E plan practical and sufficient?</p> <p>(M&E implementation) Did the M&E system operate as per the M&E plan? Was information gathered in a systematic manner, using appropriate methodologies?</p> <p>Was the information from the M&E system appropriately used to make timely decisions and foster learning during project implementation?</p> <p>Stakeholder engagement</p> <p>To what extent were other actors, such as civil society, indigenous population or local communities and private sector involved in project design or implementation, and what was the effect on the project results?</p>	<p>Number of PIRs, PPRs, PSC meetings, FAO support missions conducted</p> <p>Quality of PIRs and PPRs</p> <p>Adaptive management decisions/actions based on M & E</p> <p>Number of groups of stakeholders involved in project; proportion of women and vulnerable groups</p> <p>Level of effective, equitable and transparent participation of local actors and indigenous peoples in decision-making and implementation of activities</p> <p>Number of mechanisms/ initiatives implemented to involve additional actors</p>	<p>Interviews (national and regional coordinators, implementing and executing agencies)</p> <p>Project log frame and M & E framework</p> <p>PIRs, PPRs, PSC meeting reports, mid-term evaluation report, FAO support mission reports</p> <p>Management response to mid-term evaluation recommendations</p> <p>Interviews with other actors and beneficiaries at local levels</p> <p>Meeting reports</p>

CRITERIA	SUB-QUESTIONS	INDICATORS	MAIN DATA SOURCES
		Existence of an appropriate communication and outreach mechanism/strategy and its effectiveness	PIRs, PPRs, country monitoring matrices Communication and knowledge products Project website
Environmental and social safeguards	<p>To what extent were environmental and social concerns taken into consideration in the design and implementation of the project?</p> <p>Were adequate measures taken during project implementation to prevent unintended, adverse environmental and social consequences?</p> <p>Has the project had any unintended, adverse environmental and social consequences? How will reducing bycatch affect women and vulnerable communities and what measures are taken to mitigate these impacts?</p>	<p>Environmental and social guarantees and measures to prevent adverse consequences</p> <p>Degree of negative environmental and social impacts arising from the project execution</p>	<p>Project document</p> <p>Interviews with national and local stakeholders, academia, other actors involved in conservation/management of living marine resources and biodiversity in the countries, social science experts involved in the project</p> <p>Observations at project sites</p>
Gender	To what extent were gender considerations taken into account in designing and implementing the project? Was the project implemented in a manner that ensures gender equitable participation and benefits as well as women empowerment?	Proportion of women involved in the project and their roles; number of direct women beneficiaries in the countries	<p>Project document</p> <p>Reports arising from project activities and studies on gender, meeting reports</p> <p>Stakeholder interviews and surveys</p>
Co-financing	To what extent did the expected co-financing materialize, and how shortfall in co-financing, or materialization of greater than expected co-financing affected project results?	<p>Level of co-finance realized in relation to pledged co-finance</p> <p>Number and type of activities expected to be supported by co-financed; modifications due to lower or higher level of expected co-finance</p>	<p>Pledged co-finance (Project document and project inception report)</p> <p>Interviews with budget holder, regional coordinator</p> <p>Annual co-finance reports</p> <p>Annual budget and work plans</p> <p>PSC meeting reports</p>

CRITERIA	SUB-QUESTIONS	INDICATORS	MAIN DATA SOURCES
Progress to Impact	<p>To what extent may the progress towards long-term impact be attributed to the project? What would the situation be without the GEF intervention?</p> <p>Is there any evidence of environmental stress reduction and environmental status change, or any change in policy/legal/regulatory framework?</p> <p>Have there been socio-economic/livelihood changes (or are changes foreseen) due to the project (e.g., changes in livelihoods, income or benefits, food security, new market opportunities (eco-certification, new countries)?</p> <p>Has an adequate enabling environment been established to support progress towards long-term impact?</p> <p>Are the BRDs and other management measures introduced by the project and incentivization of stakeholders adequate to achieve the long-term impact?</p> <p>Are there any barriers or other risks that may prevent future progress towards long-term impact? E.g., climate change</p>	<p>Evidence of transformational changes at national/local levels attributable to the project</p> <p>Change in quantity of bycatch and area of vulnerable habitats impacted by trawling (proxy indicator)</p> <p>Proportion of fleet (artisanal and semi-industrial/industrial) adopting BRDs and other management practices (proxy indicator)</p> <p>Change in livelihoods, income, number of persons engaging in alternative sustainable livelihoods</p>	<p>Stakeholder interviews (national government agencies, local communities, academia, regional organizations, other actors involved in conservation/management of living marine resources and biodiversity, fisheries organizations, etc.)</p> <p>Observations at project sites</p> <p>Project technical reports</p> <p>TOC</p>
Knowledge management	<p>How is the project assessing, documenting and sharing its results, lessons learned and experiences?</p> <p>To what extent are communication products and activities likely to support the sustainability and scaling-up of project results? Are they sufficient to promote sustainability and upscaling?</p> <p>Are communication and knowledge products targeted to different audiences and are they tailored accordingly?</p>	<p>Project knowledge management and communication strategy</p> <p>Change in stakeholders' knowledge</p> <p>Number of reports and communication products documenting results, lessons, and experiences</p> <p>Extent to which communication products are used by stakeholders; stakeholders' knowledge about the project</p> <p>Means and extent of dissemination of project-related "best-practices" and "lessons-learned" at national and regional levels</p>	<p>Interviews with national and regional coordinators and national/local stakeholders, regional partner organizations, academia</p> <p>Project website</p> <p>PIRs, PPRs, PSC meeting reports, mid-term evaluation report</p> <p>Communication and knowledge products produced by the project; distribution list</p>

CRITERIA	SUB-QUESTIONS	INDICATORS	MAIN DATA SOURCES
		Plans for scaling up of results in the participating countries and other countries	
Additionality	<p>(coherence) What is the coherence between the project and the GEF IW focal area (theories of change, indicators and expected/achieved results)?</p> <p>(added-value) What is the added-value of bringing the different interventions together under one programme (or over the same level of investment made through comparable alternatives)?</p>	<p>Level of complementarity between the programme and the REBYC-II LAC Project (child project) theories of change, indicators and expected/achieved results</p> <p>Cost-benefit analysis (qualitative)</p>	Project Document, Programme framework document, REBYC-II LAC results framework and TOC

Appendix 9. Questionnaire

QUESTION	
1.	Has the project changed your views about bycatch? Yes/No. Explain
2.	Do you think managing bycatch is important? Why/why not?
3.	Will reducing bycatch improve or reduce: catches of target species, livelihoods and income?
4.	In your opinion, what are the three most important achievements of the project?
5.	Will these achievements make a difference on the longer-term? If not, what more is needed?
6.	Do you think the bycatch reduction devices and other actions to reduce bycatch will be widely accepted and used by the trawl industry?
7.	Was the number of women involved in the project activities satisfactory? If not, what do you think was the reason?
8.	Is the project design adequate to achieving sustainable trawl fisheries?
9.	Have you benefitted from the project? If Yes, how (e.g. training, employment, awareness) and is this adequate?
10.	What would be your recommendations for future work?

Appendix 10. REBYC-II LAC project framework

Component 1. Improving institutional and regulatory frameworks for shrimp/bottom trawl fisheries and bycatch co-management		
Outcome 1.1. Strengthened regional collaboration on shrimp/bottom trawl fisheries and bycatch management.		
Output 1.1.1. Best bycatch management practices in line with the B&D and SSF Guidelines disseminated to all countries in the region.	Output 1.1.2. Regional strategy for shrimp/bottom trawl fisheries and bycatch management agreed and under initial implementation.	
Outcome 1.2. Improved legal and institutional frameworks in the project countries for shrimp/bottom trawl fisheries and bycatch co-management and EAF.		
Output 1.2.1. National legal frameworks for shrimp/bottom trawl fisheries and bycatch co-management reviewed and amended.	Output 1.2.2. Institutional structures for EAF and co-management of shrimp/bottom trawl fisheries and bycatch in place.	
Component 2. Strengthening bycatch management and responsible trawling practices within an EAF framework		
Outcome 2.1. Selected key shrimp/bottom trawl fisheries in the region are successfully co-managed through EAF (including bycatch/discards considerations).		
Output 2.1.1. Information on bycatch (species, volumes, bottom impacts) and monitoring systems improved in selected fisheries (both small and large-scale) in project areas, supporting EAF and co-management, and information-sharing among countries.	Output 2.1.2. Alternative fishing methods, BRD technologies and other management measures identified and adopted by fishers.	Output 2.1.3. EAF training provided and participatory management planning process operational in all six project countries.
Outcome 2.2. An enabling environment created including incentives and promoting responsible practices by trawl operators.		
Output 2.2.1. Drivers of bycatch and discard practices investigated and understood and potential incentives identified for bycatch management.	Output 2.2.2. New products tested, using sustainable bycatch, with a view to reducing discards.	
Component 3. Promoting sustainable and equitable livelihoods through enhancement and diversification.		
Outcome 3.1. Capacities and opportunities for enhanced sustainable and diverse livelihoods created and gender equality promoted.		
Output 3.1.1. Value chain analysis with focus on the utilization of bycatch and the roles of gender and vulnerable groups carried out.	Output 3.1.2. Existing and potential non-fisheries livelihood alternatives for both men and women identified along the value chain, and capacity building support provided accordingly, including promotion of decent work.	Output 3.1.3: Community organizations strengthened, allowing for participatory processes (at household and enterprise level) leading to desired livelihood changes.
Component 4. Project progress monitoring, evaluation and information dissemination and communication.		
Outcome 4.1. Project implementation based on results-based management and application of project findings and lessons learned in future operations.		
Output 4.1.1. Project monitoring system operating and providing systematic on-progress information related to project outcome and output targets in all countries.	Output 4.1.2. Mid-term and final evaluation conducted and project implementation adjusted according to recommendations.	Output 4.1.3. Project-related "best-practices" and "lessons-learned" published and disseminated in all project countries.

Appendix 11. Status of planned project outputs in Components 1-3

(Based on the final project implementation report report as of June 2021)

Planned outputs	Status (% completion) Green: 75-100%; yellow: less than 75%	Targets and achievements
Output 1.1.1. The Bycatch and Discard (B&D) Guidelines are implemented and mainstreamed in relevant fisheries in the project countries.	95%	All the countries developed B&D guidelines, which have been approved in two countries as regulations and awaiting approval in four countries. Status is less than 100 percent because some regulations require publication/inclusion in the country's normative framework.
Output 1.1.2. Regional strategy for shrimp/bottom trawl fisheries and bycatch management agreed and under initial implementation.	95%	The Strategy was endorsed by the WECAFC/CRFM/IFREMER Regional Working Group on Shrimp and Groundfish, and translated into three languages. It will be presented at the next WECAFC Scientific Advisory Group (SAG) meeting in 2022.
Output 1.2.1. National legal/policy frameworks for shrimp/bottom trawl fisheries and bycatch co-management reviewed and draft regulatory provisions recommended.	95%	The target of three countries was exceeded, with five (Colombia, Brazil, Costa Rica, Suriname, Trinidad and Tobago) having reviewed trawl fishery regulations. Status is less than 100 percent because the regulations are yet to be published.
	100%	The target for two countries to recommend regulatory provisions was exceeded, with all the countries except Mexico (which did not allocate funds for this output) having achieved this target.
Output 1.2.2. Institutional structures for co-management within an EAF framework of shrimp/bottom trawl fisheries and bycatch in place.	100%	The target was six pilot sites with functioning co-management structures, which was achieved in all the project countries. Provisions have been made for the institutionalization of the co-management structures in all the countries.
	100%	The target was to strengthen subregional arrangements. The WECAFC/CRFM/IFREMER Working Group on Shrimp and Groundfish is functional and actively guiding regional activities and policies for 2021. Suriname and Guyana had an extensive exchange on the management of the seabob trawl fisheries, facilitated by CRFM and REBYC-II LAC.
Output 2.1.1: Improved data collection and monitoring systems for biological and socio-economic impact of trawling in selected fisheries (both small and large-scale) in project countries.	100%	The target was met, with all six countries having established or updated their baselines of catch composition and critical species.
	100%	The target for three countries to improve data collection and monitoring systems was exceeded. New information systems were implemented in Costa Rica, Suriname, and Trinidad and Tobago. Mexico observer programme and fishery monitoring database completed. Colombia updated existing biological and socio-economic information. In the North and Northwest region of Brazil, a counterpart project is systematizing bycatch composition data.
	90%	The target was to reduce discard rates by 20 percent through BRDs and other measures in the pilot sites. All countries demonstrated at least 20 percent reduction in bycatch in BRD trials and other management measures. Brazil, Colombia, Costa Rica, Mexico, Suriname, and Trinidad and Tobago obtained a reduction of 20-46 percent in bycatch. Fisher uptake is a challenge in Trinidad and Tobago and Mexico, which accounts for the 90 percent level of achievement.

Planned outputs	Status (% completion) Green: 75-100%; yellow: less than 75%	Targets and achievements
Output 2.1.2. Technological, spatial/temporal, and other potential management measures identified and adopted by fishers.	100%	The target was achieved, with gear trials completed in 11 pilot fisheries in six countries and recommendations developed. Spatio-temporal measures were implemented in three sites in Colombia, two sites in Costa Rica, and for the seabob fishery in Suriname complete in seabob. Trinidad and Tobago temporal measures drafted but not yet approved. REBYC-II LAC findings applied in seasonal closures in Mexico and measures were incorporated into the national management plan in Brazil.
	80%	The target was to introduce alternative fishing methods in one pilot site. All countries completed at least one round of tests to develop new trawl gear and alternative methods of trawling. Colombia evaluated hook and line Brotula and tuna fisheries alternatives for artisanal trawlers and introduced new fishing nets in pilot sites. Costa Rica tested 'Suripera' nets in Golfo Dulce. Funding to start these new fisheries was not available through REBYC-II LAC and the fisheries will not begin before project closure. Costa Rica and Colombia provided results of new gear tests as well as feasibility results for potential uptake in the future.
Output 2.1.3. EAF training provided and participatory management planning process operational in all six project countries.	100%	Target was achieved. Government officials, technical staff and fisher representatives were trained in co-management and EAF and mentorship was maintained throughout the project duration. In Brazil, a national EAF training workshop generated significant interest from stakeholders and over 55 communities participated in consultations on the draft shrimp management plan, and project-related activities extended to all coastal Brazilian state (with various sources of funding).
	95%	The target was to create or support co-management arrangements in all project countries. Target was met in five countries except Trinidad and Tobago, which has an operational but yet not institutionalized working group.
	100%	The target was achieved. Six management plans were prepared and agreed and six are under implementation in five of the countries countries. For Trinidad and Tobago, the implementation of a trawl fisheries management plan depends on the approval of a new Fisheries Bill that was introduced to Parliament.
	100% (TE: 90%)	Information actively shared including through the operational project website. A communication strategy was implemented in 2020.
Output 2.2.1. Drivers of bycatch and discard practices understood and potential incentives for bycatch reduction identified.	100%	Target was to identify bycatch and discard drivers in five project countries, which was achieved in Brazil, Colombia, Mexico, Suriname, and Trinidad and Tobago.
	100%	The target was to develop one complete incentive package that could be transferred among countries. Colombia completed a full incentive package that was shared with the other countries. Brazil completed a review and proposal for a best practice certificate. BRD/TED and other management changes in Suriname resulted in a successful third MSC audit and Colombia conducted a MSC pre-assessment.
Output 2.2.2. New products tested using sustainable bycatch to reduce discards.	100%	The target for new products/markets using discards/bycatch to be tested in at least one project site and recommendations shared with other fisheries in the region was exceeded. In Mexico, four products were developed using discards, and in Colombia, a business and empowerment plan for women fish workers ('platoneras') in Buenaventura was prepared. The socio-economic viability of

Planned outputs	Status (% completion) Green: 75-100%; yellow: less than 75%	Targets and achievements
		Frigoter, an enterprise of the platoneras, is promising for the use of trawl discards for the production of products for human consumption. Suriname successfully completed a project on the utilization of fishery waste products (including discards) to produce liquid fish silage as organic fertilizer.
Output 3.1.1. Value chain analysis with focus on the utilization of bycatch and the roles of gender and vulnerable groups carried out.	100%	The target, which was value chain understanding in at least three project countries, was achieved in Brazil, Colombia, and Trinidad and Tobago. Mexico assessed the socio-economic value of bycatch and Suriname completed a study on the socio-economic importance of trawler bycatch in the value chain.
	100%	The target, which was gender role understood in four project pilot sites, was exceeded. Studies on the role of women in trawl fishing and the value chain were completed in all the countries. In Costa Rica, a baseline was completed of the status of women's organizations in fisheries and a draft socio-economic assessment of vulnerable fishers and fish workers.
	100%	The target was four pilot sites where vulnerable groups were identified. In the Brazilian pilot site of Sirinhaém, studies demonstrated that the social and economic cost of reducing bycatch was much greater than its environmental benefits. As such, the project pivoted from reducing bycatch to improving utilization. Vulnerable groups in Costa Rica and Colombia (mainly women) benefitted from capacity building and organizational strengthening. In Mexico, an evaluation of the direct impact of trawling on small-scale fishers showed that with proper use of BRDs and spatial closures, trawlers would have minimal direct impact on the species targeted by small-scale fishers.
Output 3.1.2. Existing and potential non-fisheries livelihood alternatives for both men and women identified along the value chain, and capacity building support provided accordingly, including promotion of decent work.	70%	Target was to analyse alternative livelihoods in at least three project sites. The activities progressed slowly due to priority given to other project areas and difficulties in creating/strengthening community/fisher organizations. In some countries, the "alternative livelihoods" approach was not well-received by fishers so the project pivoted to "Enhanced livelihood". In Colombia, alternative fishing resources (Brotula and yellowfin tuna) were evaluated and a management plan using selective fishing gear was proposed. In Mexico, alternative use of bycatch investigated in order to increase value added products and diversification opportunities. Costa Rica has constructed a strengths, weaknesses, opportunities and threats (SWOT) and feasibility analysis with women fish workers to identify alternative livelihoods. Mexico did not have activities for this output, but the bycatch utilization initiative can potentially provide employment in fish processing companies. In Trinidad and Tobago, preferred alternative livelihood options were identified through a Multi-Sectoral Committee.

Planned outputs	Status (% completion) Green: 75- 100%; yellow: less than 75%	Targets and achievements
Output 3.1.3. Fisher organisations strengthened, allowing for participatory processes leading to desired livelihood changes.	95%	The target was to create or strengthen at least 12 organizations in every pilot site and provide training/increase capacity in each of them. In all the countries except Mexico (where this output was not a country focus), fisher organizations were strengthened or new ones established (e.g. five new ones in Suriname). In Costa Rica, a responsible marine fishing area was established and management plan with co-management principles developed. Suriname, and Trinidad and Tobago completed a diagnostic of the functioning of fisherfolk organizations, which produced recommendations on the status and requirements for well-functioning organizations. The project period was too short to observe measurable livelihood changes.

Annexes

Annex 1. Terms of reference for the evaluation

<https://www.fao.org/3/cb7534en/cb7534en.pdf>

Annex 2. Country study report – Brazil

<https://www.fao.org/3/cb7782en/cb7782en.pdf>

Annex 3. Country study report – Colombia

<https://www.fao.org/3/cb7784en/cb7784en.pdf>

Annex 4. Country study report – Mexico

<https://www.fao.org/3/cb7785en/cb7785en.pdf>

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