

Terminal Evaluation

GEF Project "Climate Technology Transfer Mechanisms and Networks in Latin America and the Caribbean (RG-T2384)"

Final Report

GEF Project ID No.	4880
Period of time	January - May 2021
Report date	June 2, 2021
Region and countries included in the Project	Latin American and the Caribbean
GEF Strategic Program / Operational Focal Area	Climate Change
Executing agency and other project partners	Instituto Nacional de Ecología y Cambio Climático (INECC, Mexico); Fundación Bariloche (Bariloche, Argentina); World Resources Institute/Embarq (WRI, U.S.A.); Centro Agronómico Tropical de Investigación y Enseñanza (CATIE, Costa Rica); BID, and Fondo Regional de Tecnología Agropecuaria (FONTAGRO)
Evaluator	Jose Galindo

TABLE OF CONTENTS

PROJECT DATA	4
ACRONYMS	5
EXECUTIVE SUMMARY	7
1 Introduction	10
1.1 Purpose of the evaluation	10
1.2 Progress and methodology of the evaluation	10
1.2.1 Design/general approach.....	10
1.2.2 Sources of data.....	12
1.2.3 Limitations.....	12
2 PROJECT DESCRIPTION	13
2.1 Objective	13
2.2 Project Components	14
2.3 Implementation arrangements	16
3 FINDINGS	18
3.1 Project Design/Formulation	18
3.1.1 Analysis of the Results Framework	20
3.1.2 Analysis of Assumptions or Theory of Change	22
3.1.3 Project Risk Analysis.....	22
3.1.4 Environmental and Social Safeguards.....	24
3.1.5 Gender	24
3.1.6 Monitoring and Evaluation: diseño en la entrada e implementación.....	25
3.2 Project Implementation	26
3.2.1 Project Execution Mechanism.....	26
3.2.2 Engagement, cooperation and ownership of the different stakeholders and partners	28
3.2.3 Environmental and Social Safeguards.....	31
3.2.4 Gender	31
3.2.5 Project financing	32
3.3 Project Outcomes	34

3.3.1	Outcomes by Component	34
3.3.2	Assessment by type of technology (EST).....	40
3.3.3	Effectiveness	43
3.3.4	Efficiency	44
3.4	Impact.....	45
3.5	Sustainability.....	48
4	<i>COMPARATIVE ANALYSIS - SIMILAR PROJECTS ANALYZED</i>	50
4.1	Similar projects analyzed	51
5	<i>CONCLUSIONS, RECOMMENDATIONS, AND LESSONS LEARNED</i>	54
5.1	Conclusions	54
5.2	Recommendations.....	56
5.3	Lessons Learned	57
5.3.1	Operational Performance	57
5.3.2	Development Performance.....	58
6	<i>ANNEXES TO THE EVALUATION REPORT</i>	60
6.1	Annex 1: Base documents for review.....	60
6.2	Annex 2: List of interviewees	61
6.3	Annex 3: Evaluation questions	64

PROJECT DATA

Project Title	Climate Technology Transfer Mechanisms and Networks in Latin America and the Caribbean (RG-T2384)	
GEF Project ID	4880	
Region	Latin American and the Caribbean	
GEF Trust Fund and Cycle	GEF 5 – <i>Multi Trust Fund</i>	
GEF Focal Area	Climate Change, Mitigation, and Adaptation	
GEF Focal Area Objectives	<ul style="list-style-type: none"> • CCM-1: Technologies successfully demonstrated, deployed, and transferred. • CCM-1: Creation of an enabling regulatory environment and technology transfer mechanisms, avoided greenhouse gas (GHG) emissions. • CCM-2: Establishment of sustainable mechanisms of finance and delivery, and avoidance of GHG operational emissions. • CCM-3: Increased investment in renewable energy technologies. • CCM-4: Increased investment in urban and transport systems that are less GHG-intensive. • CCM-5: Adoption of good management practices for the UTS sector, in both forest lands and the landscape at large. • CCA-3: Successful demonstration, deployment, and transfer of the relevant adaptation technology in the selected areas. • CCA-3: Improvement of the enabling environment to support adaptation technology transfer. 	
Implementing Agency	<ul style="list-style-type: none"> • Inter-American Development Bank 	
Executing Entity	<ul style="list-style-type: none"> • Instituto Nacional de Ecología y Cambio Climático • Fundación Bariloche • World Resources Institute/Embarq • Centro Agronómico Tropical de Investigación y Enseñanza (CATIE, from Costa Rica) • Fondo Regional de Tecnología Agropecuaria (FONTAGRO) 	
Financing	<i>At endorsement (USD)</i>	<i>At completion (USD)</i>
GEF Funds	9,082,500	9,082,500
GEF Special Climate Change Fund	1,816,500	1,816,500
GEF Funds (Total)	10,899,000	10,899,000
Cofinancing		
IADB	55,500,000	205,000,000
FONTAGR	1,050,000	1,135,370
WRI	0	20,562,357
Total cofinancing	56,550,000	226,697,727
Total Project Cost	67,399,000	237,596,727.28
Expected project duration	36 months	
Scheduled start (ProDoc Signature)	June, 2014	
Terminal evaluation date	May 5, 2021	
Operational closing date	October 20, 2020	

ACRONYMS

ADB	Asian Development Bank
AfDB	African Development Bank
AWPs	Annual Work Plans
CATIE	Centro Agronomico Tropical de Investigacion y Enseñanza (Tropical Agricultural Research and Higher Education Center)
CC	Climate Change
EAs	Project Executing Agencies
EBRD	European Bank for Development and Reconstruction
EST	Environmentally sound technologies
FB	Fundacion Bariloche
FONTAGRO	Fondo Regional de Tecnologia Agropecuaria (Regional Fund for Agricultural Technology)
GEF	Global Environment Facility (Fondo para el Medio Ambiente Mundial)
GHG	Greenhouse Gas
IA	Implementing Agency
IDB	Inter-American Development Bank
IICA	Instituto Interamericano de Cooperacion para la Agricultura
INECC	Instituto Nacional de Ecología y Cambio Climatico (Mexico)
LAC	Latin America and the Caribbean
M&E	Monitoring and Evaluation
NGO	Non-Government Organization
PCU	Project Coordination Unit
PIR	Project Implementation Report
ProDoc	Project Document

SCCF	Special Climate Change Fund
TE	Terminal Evaluation
ToR	Terms of Reference
TT	Technology transfer
UNFCCC	United Nations Framework Convention on Climate Change
WRI	World Resources Institute

EXECUTIVE SUMMARY

Project Description

The objective of this Project is to promote the development and transfer of environmentally sound technologies (EST) in Latin America and the Caribbean, in order to contribute to the ultimate goal of reducing greenhouse gas emissions and reducing the vulnerability to climate change in specific sectors in LAC. The Project was financed by the Global Environment Facility and implemented by the Inter-American Development Bank, it had five Executing Agencies (EAs) to address a cross-cutting component related to the development of national institutional capacities and policies in the region, and covered the focal areas of renewable energy, energy efficiency, transportation, forest monitoring, and resilient agriculture.

The Project's strategy is to build national capacities to identify, assess, develop, and transfer EST in ALC. To develop this strategy, the following components were considered: Component 1. Development of national policy and institutional capacities; Component 2. Strengthen technology networks and centers; Component 3. Pilot technology transfer mechanisms; Component 4. Leverage private and public investments.

Overview of the Project Terminal Evaluation Ratings

Project performance rating	
Criteria	Rating
Monitoring and Evaluation	
M&E design at project start	3 (MS)
Execution of the M&E Plan	3 (MS)
Overall quality of M&E	3 (MS)
Outcomes	
Relevance	2 (R)
Effectiveness	5 (S)
Efficiency	5 (S)
Overall quality of project outcomes	5 (S)
Sustainability	
Overall likelihood of risks to sustainability	3 (ML)
Impact	
Overall project results	3 (S)

Evaluation ratings key

Ratings of Effectiveness, Efficiency, M&E, and Execution by the implementing and executing partners	Sustainability	Relevance
6: Highly satisfactory (HS): Exceeded expectations and/or there are no short comings	4. Likely (L): Insignificant risks to sustainability.	2. Relevant (R)
5: Satisfactory (S): Meets expectations and/or minor or no short comings	3. Moderately likely (ML): Moderate risks.	
4: Moderately satisfactory (MS): More or less meets expectations and/or some short comings	2. Moderately unlikely (MU): Significant risks.	1. Not relevant (NR).
3. Moderately unsatisfactory (MU): Somewhat lower than expected and/or significant short comings	1. Unlikely (U): Severe risks.	
2. Unsatisfactory (U): Substantially lower than expected and/or major short comings	Impact 3. Significant (S) 2. Minimum (M) 1. Insignificant (I)	
1. Highly unsatisfactory (HU): Severe short comings.		

Source: Guidelines on the GEF Project and Program Cycle Policy, 2020

Overview of the Main Findings

The Project has great global relevance in the context of the implementation of the Technology Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC). It is an extremely ambitious and complex initiative, without precedent in the region. As regards the design, the Executing Agencies selection process, as well as the leeway they were given to select the subjects and developing the intervention strategies appropriate to each specific case are worth mentioning.

The design underestimated the inherent complexity of simultaneously addressing multiple focal subjects with different Executing Agencies. Also, the geographic scope posed challenges in terms of ownership, validation, and engagement, considering also the great asymmetries existing between the countries in this region. The design does not propose clear coordination lines among the interventions, which resulted in a fragmented intervention.

The execution mechanisms were efficient and relatively simple, which is reflected in a light structure that concentrates the Project coordination and leadership in one unit formed by two people. Two different moments are identified in terms of the adaptive management of the Project; during the Project startup and under the administration of the first team leading the Project, the adaptive capacity was relatively low, while with the last team leading the Project from the IDB side management became more flexible and adaptive. However, the implementation was fragmented, with nearly no links or spaces connecting the interventions of the different Executing Agencies. For example, during the intervention there was only one meeting where all the EAs participated along with IDB.

As regards GHG emissions reduction, a total reduction of 35 million tons of Co2e was reported, and cofinancing mobilization was recorded at about USD 227 million. The Project describes the state of the art of environmentally sound technologies in the region, contributes to defining steps to promote their development and transfer, and enabled showing there is great potential in this region. The results point at the existence of favorable conditions for the development and transfer of environmentally sound technologies, although there are great differences between countries in terms of permits and leverage factors.

The approach of building capacities in each country and sector proved essential to ensure the continuation of processes once the Project resources are depleted. However, the sustainability perspectives for the investments are not so clear.

1 INTRODUCTION

1.1 Purpose of the evaluation

The Terminal Evaluation (TE) will evaluate the progress towards the objectives and results as specified in the Project Document, with a view to identifying potential recommendations for the closure of the Project, as well as lessons learned.

This TE is an opportunity to provide the donors, governments, and Executing Agencies with an independent evaluation of the relevance, the achievement of results, and the impact made.

The specific objectives of the TE are the following:

- a. To evaluate the relationship between the expected and planned outputs and the achievement of Project outcomes related to promoting the development and transfer of environmentally sound technologies in Latin America and the Caribbean, identifying the real contribution to reducing greenhouse gas emissions and climate change vulnerability in specific sectors across the region.
- b. To evaluate the progress and achievements in the execution of the Project, identifying achievements in the technical and institutional framework from a quantitative and a qualitative perspective, as well as lessons learned in relation to these two aspects.
- c. To evaluate the sustainability of the Project and its components in institutional and financial terms, as well as the role and/or involvement of the different participating entities, and the degree of engagement and/or ownership on the part of users, beneficiaries, or local communities.
- d. To evaluate how the Project adjusts to and complements the Technology Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC).
- e. To update the monitoring tool of the Global Environment Facility (GEF) (i.e., the Tracking Tool).

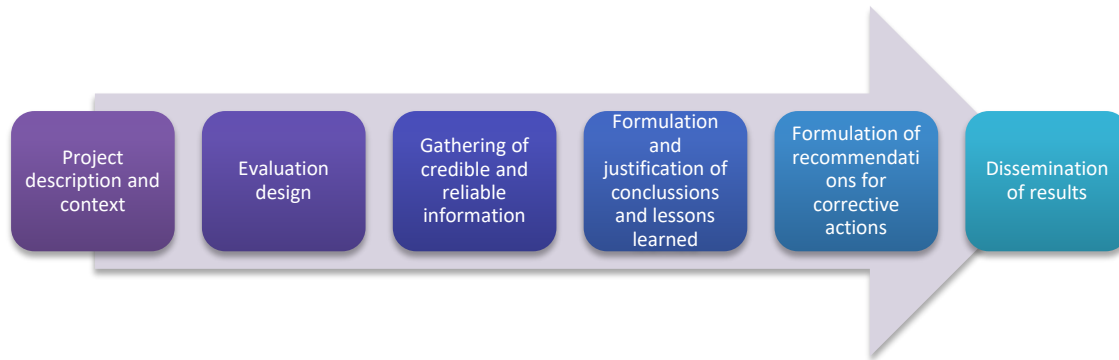
1.2 Progress and methodology of the evaluation

1.2.1 Design/general approach

From the beginning of the process there has been active interaction between the evaluator, the Inter-American Development Bank (IDB), Centro Agronomico Tropical de Investigacion y Enseñanza (CATIE), Instituto Nacional de Ecología y Cambio Climático (INECC), World Resources Institute (WRI), Fundación Bariloche (FB), Fondo Regional de Tecnología Agropecuaria (FONTAGRO), and other stakeholders, with a view to accelerating the evaluation process and enabling a timely feedback on findings. An inclusive and participatory approach based on data sourced from programmatic, financial and monitoring documents has been used at

all times, and there has been a reasonable level of direct participation of the involved parties. As a result of the evaluation process, conclusions have been derived about the activities done and their contribution to the main objective and the four Project Components. The process followed for the TE is shown in the following Chart 1.

Chart 1 Terminal Evaluation Process



Source: Jose Galindo, 2021

Initially, on January 8, 2021, a kick-off meeting was held by the Project representatives and the evaluator. The meeting served as an induction to the Project, for general coordination of the evaluation, to review aspects related to information access, and to identify key actors.

Based on the review, a detailed description of the Project was made covering the intended objectives, the Components, and their respective Outputs. Afterwards, the evaluation framework was established combining the guiding questions for the five key criteria and the four Project performance assessment categories (project formulation and design, project execution, results, monitoring and evaluation). This initial work defines the scope and criteria to evaluate the relevance, efficiency, effectiveness, impact, and sustainability of the interventions made.

Then, interviews were made with different actors, as described below. The initial findings were presented to the Project Coordination Unit (PCU) with the aim of getting clarifications, filling information gaps, and getting valuable feedback.

The information gathered from the interviews was transcribed and organized. Afterwards, the information was grouped under different categories including similar ideas, concepts or subjects found in the evaluation and, through a triangulation technique, the data analysis results were double- or triple-checked.

1.2.2 Sources of data

Secondary information

As the first task of the evaluation, a list of key documents was requested (Annex 2); in addition, the IDB created a cloud folder to store relevant information for the evaluation.

The evaluation involved reviewing secondary information, especially mid-term and terminal evaluation reports from three similar projects financed by GEF (ADB, ERDB, AFDB). This information was contrasted with the performance of the Project in order to identify lessons learned and good practices that can be incorporated to the development of the Project.

Interviews and field visits

Based on the Project description and considering the objectives of the evaluation, guiding questions (Annex 4) were developed for the five key criteria and the four Project performance assessment categories (project formulation and design, project execution, results, monitoring and evaluation).

The gathering of primary information through semi-structured interviews with key stakeholders of the Project included representatives of the five Executing Agencies. A total of 21 interviews were made, each lasting about 45 minutes, and all of them virtual.

1.2.3 Limitations

It is worth pointing out that a number of issues arose during the evaluation due to the new normality prevailing as a result of the COVID-19 pandemic. Therefore, for the evaluation to be feasible, credible, and useful, great attention was paid to the different methods used in order to reduce information gaps and other problems that could arise.

2 PROJECT DESCRIPTION

The “Climate Technology Transfer Mechanisms and Networks in Latin America and the Caribbean” Project was financed by the Global Environment Facility and implemented by the Inter-American Development Bank. The objective of this Project is to promote the development and transfer of environmentally sound technologies (EST) in Latin America and the Caribbean (LAC), in order to contribute to the ultimate goal of reducing greenhouse gas (GHG) emissions and vulnerability to climate change (CC) in specific sectors in this region.

The Project’s strategy is to build national capacities to identify, assess, develop and transfer EST in ALC. To accomplish this strategy, the Project: i) promotes regional cooperation efforts; ii) supports policy making and planning processes at the national and sectoral level; iii) serves as a platform for the demonstration of policies and mechanisms for the implementation of permits; and iv) mobilizes private and public resources. The Project implements pilot institutional frameworks and mechanisms for the development and transfer of EST for CC mitigation and adaptation, considering and directly contributing to the key design characteristics of the Technology Mechanism agreed under the UNFCCC. In Addition, to maximize the global and local environmental benefits, the Project focused on priority sectors for CC mitigation and adaptation in LAC, namely renewable energy, energy efficiency, transport, forest monitoring, and resilient agriculture, prioritizing specific initiatives according to criteria that include cost-effectiveness of the EST, replication, national circumstances, capacities, and priorities.

2.1 Objective

The Project seeks to promote the development and transfer of environmentally sound technologies in Latin America and the Caribbean, in order to contribute to the ultimate goal of reducing greenhouse gas emissions and reducing the vulnerability to climate change in specific sectors in LAC.

2.2 Project Components

Based on the Project Document, the following Components, Outcomes, and Outputs were established:

Component 1. Development of national policy and institutional capacities

The objective of this Component is to develop institutional capacities and analytical tools to address issues on EST in the context of national and sectoral policies and plans. The activities of this Component focus on the role of national authorities responsible for climate change policy-making, in particular with regards to the identification, assessment and adoption of EST to achieve climate change policy objectives. The associated Outputs are:

Output 1.1 - Workshops on environmentally sound technologies and technological innovation systems

Output 1.2 - Guide on environmentally sound technologies

Output 1.3 - Regional dialogs on climate change planning and environmentally sound technologies

Output 1.4 - Guidelines on climate change planning and environmentally sound technologies

Component 2. Strengthen technology networks and centers

This Component supports the creation and strengthening of four regional EST networks on energy, transport, forest monitoring, and climate-resilient agriculture. The activities proposed under this Component aimed at identifying and prioritizing opportunities for the adoption of EST in each sector in LAC, and promoting regional partnerships and collaboration through, inter alia, the identification of relevant expertise in the region and selected outreach and dissemination activities. The Project sought to place emphasis on linking and contributing to existing regional networking initiatives, with a view to also ensuring the continuation of the activities of the networks beyond the Project closure. The following Outputs were developed for this Component:

Output 2.1 - Workshops/events to promote thematic networks

Output 2.2 - Identification of regional experts in environmentally sound technologies

Output 2.3 - Sectoral perspectives of environmentally sound technologies in specific sectors in Latin America and the Caribbean

Output 2.4 - Work plans for thematic networks

Component 3. Pilot technology transfer mechanisms

This Component aimed at creating enabling environments for the development and transfer of EST. The activities under this Component aimed at identifying, assessing, and showcasing specific examples of technology transfer mechanisms and policies (e.g. regulations, standards, financial mechanisms, etc.). Among other analytical tools, the Project proposed using technology roadmaps to identify and discuss the concrete actions and mechanisms that are required for the adoption of specific technologies in a given context. The associated Outputs are:

Output 3.1 - Case studies on the development and transfer of environmentally sound technologies

Output 3.2 - Roadmaps for the adoption of environmentally sound technologies

Output 3.3 - Assessments of transfer mechanisms for environmentally sound technologies

Component 4. Leverage private and public investments

This Component aims at facilitating private and public investments in the development and transfer of EST in LAC through the identification of investment opportunities, the elaboration of technology assessments and feasibility studies, and the assessment of the economic and financial feasibility of the adoption of EST (including cost-benefit analysis, market studies, business and financial models and the design of financial mechanisms). The Project also sought to support the mobilization of international climate financing, supporting the preparation of project proposals and facilitating partnerships. The Outputs associated with this Component are:

Output 4.1 - Technical assessment of environmentally sound technologies

Output 4.2 - Economic assessments of environmentally sound technologies

Output 4.3 - Funding proposal for the development and transfer of environmentally sound technologies

Output 4.4 - Funding of environmentally sound technologies for adaptation in the area of agriculture

2.3 Implementation arrangements

The Project is implemented by the Inter-American Development Bank (Implementing Agency - IA), so the IDB is responsible for the supervision, reporting, and evaluation of the Project. Within IDB, it is the Climate Change Division that is responsible for IA-related functions.

This Project is peculiar in terms of the Executing Agencies (EAs) because there are five agencies responsible for the daily execution of the thematic/sector activities of the Project:

- Instituto Nacional de Ecología y Cambio Climático, a public organization in Mexico, is responsible for the execution of Component 1 of the Project on the development of national policies and institutional capacities.
- Fundación Bariloche, a non-for-profit academic private organization with headquarters in Argentina, is responsible for the execution of the energy sector activities under Components 2, 3, and 4.
- World Resources Institute (WRI / Embarq), a global research institute covering more than 60 countries, established in the State of Delaware, with headquarters in Washington DC, United States, is responsible for the execution of the activities under Components 2, 3, and 4 that are related to the transport sector.
- Centro Agronómico Tropical de Investigación y Enseñanza, a non-for-profit private organization with headquarters in Costa Rica, executes the forestry activities under Components 2, 3 and 4.
- The IDB, as the legal representative and administrator of *Fondo Regional de Tecnología Agropecuaria*, is the executing agency responsible for the activities in the farming and cattle ranching sector under Components 1, 3, and 4. FONTAGRO is an initiative supported by IDB and Instituto Interamericano de Cooperación para la Agricultura (IICA) to promote the development of technologies for the agricultural sector. FONTAGRO operates through regional networks of cooperative programs for

the development of agricultural technology that will constitute the core of a regional network on environmentally sound technologies for agriculture. The regional network and experience of FONTAGRO are key assets that benefit the Project and justify its role as EA for activities in the agricultural sector.

3 FINDINGS

3.1 Project Design/Formulation

This Project has great global relevance since it addresses a critical aspect for the implementation and fulfillment of global commitments related to climate change, like the transfer and adoption of technologies. In the interviewees' opinion, it is a pioneering initiative without precedent in the region - except for specific projects at the country level, there have been no comparable interventions in terms of scale, scope, and impact.

The design has a clear global connotation and character, given that similar projects were almost simultaneously formulated with GEF funds in Africa, Asia and Europe, and all of them were led by their respective development banks. However, there was a major limitation in the design phase due to the large number of participant countries: it was difficult to maintain appropriate ownership, validation and participatory processes involving the countries right from the design phase. The Executing Agencies mentioned scale-related difficulties in addressing Technology Transfer (TT) issues due to the large differences existing between the countries in the region, such as difficulties in bringing cases and priorities to the scales of intervention found in the Caribbean countries.

Testimonials point at the fact that during the time elapsed between the Project design and start up, major changes occurred in the inter-governmental negotiation processes related to climate change, so certain aspects of the design may have become outdated or inadequate in the new context, especially since the Paris Agreement.

Among the positive aspects of the design, interviewees highlight that the Executing Agencies were given leeway to develop what they considered necessary within each focal subject, so the intervention strategies could be adapted to each particular case. For example, for the selection and prioritization of investments, Fundacion Bariloche held a consultation and participatory process involving the countries in surveying the demand for technical assistance, FONTAGRO maintained its traditional line of competitive funds, while WRI was much more specific and focused on two initiatives that had already been initiated and offered opportunities to materialize.

It is mentioned that thanks to the greater appetite for risk that characterizes the GEF resources, they could develop subjects, studies and approaches which, albeit highly necessary for the region, would have otherwise been very difficult to finance.

The design responds to a motivation of IDB to present projects whose scale is large enough to justify their operating costs and the expected impact on its operations. Given the way in which the Project was conceived and the selection of the Project focal subjects, there are nearly five independent projects with five different EAs, which results in a fragmented intervention.

The design does not propose clear coordination lines between the interventions and focal areas and it therefore offers little space for adding value and generating feedback among the different interventions. The lack of governance and participation spaces, like a Steering Committee (the Technical Committee never got implemented) may have also contributed to the weakness identified in terms of coordination and aggregation of the interventions. According to the interviewees, there was a need for a unifying thread that could enable a more integrated intervention, and there was a gap in terms of information management and knowledge aggregation across the interventions.

Interviewees agree that this is a highly ambitious and complex Project. It is pointed out that the design underestimated the inherent complexity of simultaneously addressing multiple focal subjects with different Executing Agencies in such a large and diverse region as Latin America and the Caribbean. For example, the Project coordination team from the IDB side had only two people, and the budgets allocated to the executing entities did not include resources for institutional management, coordination and monitoring of the consultants hired with Project funds. In addition, no channels were defined to clearly engage the participation and support needed from the different key actors at IDB, both at its headquarters and in the different countries.

The interviewees emphasized the robust process implemented to select the Executing Agencies, which involved identification, selection and due diligence to ascertain the institutional capacity of each agency. Therefore, the execution of Components 2, 3, and 4 was undertaken by institutions with institutional capacity, recognized leadership in the focal subjects, convening power, and experience managing projects with GEF. However,

reference is made to a considerable asymmetry in terms of the culture and institutional capacity of the Executing Agencies, most notably in the case of INECC, which was in charge of Component 1 and had no experience executing projects with external sources of finance, like GEF. Another aspect that is worth highlighting is that the interventions were carried out around the GEF focal points in each country, typically the National Environmental Authorities, which are knowledgeable about climate change and competent in that area, but not necessarily in technology transfer matters.

As for the design weaknesses, it could have been more balanced in terms of complementing mitigation approaches with climate change vulnerability and adaptation matters, especially as regards changes in land use - which accounts for more than 33% of GHG emissions in the region. Also, due to the broadness of subjects and the geographic approach, it was difficult to establish baselines that would provide an insight into the initial situation in each country before the interventions, so as to measure the progress or change triggered by the Project interventions.

3.1.1 Analysis of the Results Framework

The Project has a logical intervention sequence, where the main milestones, elements and factors necessary for the transfer of technology are clearly and accurately developed. The formulation was clear and the indicators were SMART. The sequential approach of Components and chained activities is recognized as a positive aspect of the design; however, interviewees pointed at the need to review the execution timeframes based on the Project objectives. It was mentioned, for instance, that the process necessary to execute financing commitments under Component 4 usually requires timeframes and conditions that are not adequately reflected in the design of this Project.

Also, interviewees perceived that Component 1 got fairly isolated from the rest of the intervention, and the Executing Agencies in charge of Components 2, 3 and 4 consider that there has not been a common understanding or interpretation of the role of this Component within the context of this intervention. They also pointed out that the schedule and design of Component 4 did not allow for enough space and resources to fulfill the targets.

As for the impact indicators, they were not clearly identified at the time the Project was designed and were formulated during the implementation. In fact, it was decided that the

Project would measure its impact in relatively simple and straightforward terms - i.e. greenhouse gas (GHG) emissions reduction and financial resources mobilized. However, it has been mentioned that the calculation of emission reductions, especially for the agricultural and forestry sectors integrating the different subjects addressed by the Project, is still under development and being discussed at a regional level.

Although the GEF CC interventions are expected to reduce GHG emissions, for this Project it is difficult to estimate the impact derived from investments that seek to generate capacities, conditions and an enabling environment for the transfer of CC technology. Consequently, the formulation of this impact indicator is ambiguous in the context of the Project, and there is no clear consistency between the annual targets proposed and the different Project activities. Also, the contribution of each Component or executing partner to the achievement of the target is not disaggregated.

It is the opinion of the interviewees that the design could have considered other qualitative aspects related to the specific changes and transformations that the Project sought to advance, such as the change or improvement in terms of capacities, gap-filling, or removal of regional barriers to the transfer of technology. In this regard, it is curious that the results framework does not consider the GEF tracking tools for the definition of institutional capacity indicators.

All of the outcome indicators prioritize the coverage criteria, in terms of both the number of countries and the number of institutions participating or adopting the outputs and recommendations generated by the Project. As with the impact indicators, the contribution of each Component or executing partner to the achievement of the target is not disaggregated.

At the output level, the formulation of indicators that account for the investments coverage is recreated in terms of number of attendants at meetings, number of workshops, number of countries and number of studies, cases and technical assistance outputs developed with Project financing. The contribution of each Component or executing partner to the achievement of the targets is not disaggregated.

3.1.2 Analysis of Assumptions or Theory of Change

There is no evidence of an analysis of Project assumptions that served as a basis for designing the Project. Assumptions are typically included in the results framework itself and broken down by activity, but in this case, there is no evidence that this analysis was made.

The ProDoc does not formulate a Theory of Change (ToC) because in 2014, when it was designed, this was not a GEF requirement, but it presents the main elements upon which a ToC may be formulated, which are outlined below:

The Project objective is to reduce GHG emissions and climate change vulnerability in specific sectors, for which it seeks to remove the existing barriers to the development and transfer of climate change-related technologies in Latin America and the Caribbean, based on four interrelated components.

The first one addresses regulatory and policy barriers, improving the capacity of the authorities to identify and evaluate technologies, as well as formulate policies and plans to promote the adoption of priority technologies. The second component facilitates the access to regional technical knowledge, reducing associated resources to remove information, technical and capacity barriers. The third component formulates recommendations for the adoption of environmentally sound technologies, specifically the priority technologies under the first component. Component three helps remove regulatory and policy barriers supporting the stakeholders in the evaluation and adoption of enabling policies and mechanisms. Component four promotes investments for the adoption of environmentally sound technologies through feasibility studies, technology assessments, cost-benefit analyses, market studies, financial models, and financing proposals to invest in such technologies.

3.1.3 Project Risk Analysis

The identification of seven general risks to the Project is considered appropriate, but the strategies to mitigate them are deemed general, somewhat imprecise and, in some cases, difficult to relate to, or disconnected from, the identified risk. Also, the seven risks are not rated individually, but globally as “moderate”.

Overall, the risks identified in the design phase remained unchanged by the end of the Project, as shown on Table 1, and the PIRs did not show changes in their rating year on year. The only change is seen in 2020, when the COVID-19 pandemic was included as a risk, as it delayed some Project activities.

The MTE identified that the Risks Matrix had not been used or updated to plan the Project activities arguing that neither the objectives or the socioeconomic or environmental context had changed. It is worth mentioning that the MTE evaluated each risk individually, but using a different scale.

Table 1 Identified risks

Risk	Rating PIR 2017	Rating obtained in the MTE	Rating PIR 2020
Slow progress in the implementation of the UNFCCC Technology Mechanism	Overall risk: Moderate	The Project has not been negatively affected by this. Unlikely (UI)	No variation in the number and type of risks identified in the Project Document Overall risk: Moderate
Efficient coordination among the Executing Agencies		Very little or no coordination among the EAs. Likely (L)	
Insufficient interest/support from national governments;		The national governments have largely shown great interest when appropriate. Unlikely (UI)	
Lack of interest by the private sector		The private sector has largely shown great interest when appropriate. Unlikely (UI)	
EST are inadequate to the needs and practices of local technology users		Investment opportunities have not been linked with financing products available through the Bank. However, the EST promoted by the Project are certainly appropriate and adequate to local needs. Unlikely (UI)	
Political and/or economic instability		Some countries in the region are undergoing political and/or financial crises; however, this has not hindered the implementation of the Project. Unlikely (UI)	
Lack of qualified experts to support the		All the EAs have identified networks of experts in different fields related to EST transfer. Unlikely (UI)	

project activities			
Delays due to the COVID-19 pandemic	N/A	N/A	The projects experienced delays and changes in the priorities and decisions of local and national governments.

Source: PIR, 2017 - 2018 - 2019 – 2020; MTE, 2018

3.1.4 Environmental and Social Safeguards

The Project Document (ProDoc) recognizes that the Project outputs related to the adoption of environmentally sound technologies in transport, energy, agriculture, and forestry could bring a number of associated environmental, economic and social benefits. However, their impact will only be visible once the proposals developed by the Project start to be implemented. Therefore, the implementation of EST in the energy and transport sectors will contribute to local air quality, will reduce fossil-fuel dependency, and will improve the companies' competitiveness. The adoption of forest monitoring technologies will improve the capacity of countries for managing forest and water resources, reducing deforestation and forest degradation, and contributing to biodiversity conservation. The environmentally sound technologies in the agricultural sector will improve food security and rural livelihoods, and will lead to a more efficient use of natural resources.

In view of this, the Project was classified as Category C according to the IDB Environmental and Social Safeguards Policy, that is, it does not generate significant environmental or social impacts. Consequently, the design does not contemplate any specific activity or measure beyond the fulfillment of the IDB standards and policies.

3.1.5 Gender

The ProDoc states that the Project will place special attention on gender equality and the effects on the poor living in urban and rural areas. It also states that some EST may benefit women, children and the poor - who are among the groups most affected by climate change. However, the design does not establish any criteria or guidelines to guide the team in the implementation of a gender-focused approach during the Project execution.

3.1.6 Monitoring and Evaluation: Design at startup and implementation

Based on the Project Design Document (ProDoc), the Project monitoring and evaluation will be conducted using the Results Framework, which defines the objective and expected outcomes and outputs. In addition, it points out that the monitoring and evaluation activities will follow the IDB and GEF standard policies and practices. During the terminal evaluation it was confirmed that the M&E tools were being used:

Tool	ProDoc	Implementation
Annual Work Plans (AWP)	This document will be prepared by the Executing Agencies and then submitted to the Steering Committee for review and approval.	No evidence of AWP developed by the Project. As regards the EAs, even if there are no AWPs as such, each Agency developed its plans and presented them as part of their annual reports.
Project Monitoring Reports	They must be prepared and updated every six months to track the Project progress. Progress will be measured and evaluated with the applicable AWP and the general Results Matrix of the Project. The AWPs will alert the SC about any relevant aspect that may be affecting Project implementation.	At the Project level, there is no evidence that monitoring reports were prepared, which may be related to the fact that no AWPs were formulated to appropriately track the Project progress.
Project Implementation Reports (PIR)	They will report on the activities and results, they must be prepared following the GEF guideline (including performance ratings and tracking tools).	The PIR is prepared using the Step-by-step Guide for reporting to GEF through the Bank's systems (TCM). While this tool makes the work easier, the analyzed PIRs do not show the physical progress of activities, and they only show the budget spending. Another weakness lies in the recording and management of Project risks, which have not been updated since the ProDoc.
Mid-term Evaluation	It was planned to be conducted when 40% of the GEF funds had been executed or 18 months after the implementation started.	The Mid-term Evaluation was conducted between May and November of 2018, i.e. 39 months after the Grant Agreement had been executed.
Terminal Evaluation	The ProDoc contemplates a terminal evaluation to be conducted three months prior to the project closure.	The Terminal Evaluation was commissioned in early 2021 and it is in progress.

It should be noted that, contrary to what the ProDoc mandates, no M&E plan was developed, which explains - for instance - why only the methodology to measure the Project contribution to reducing GHG for the energy and transport sectors was developed, or why no tool was available to systematically monitor the cofinancing resources. This could have contributed

to the absence of reporting tools or mechanisms defined by the IDB for the 5 EAs, which received no technical support from IDB, so, according to the testimonials gathered, each partner made their own interpretation and developed their own forms to report to IDB.

The IDB's Convergence system was used as the Project tracking tool, which brought some difficulties in terms of harmonizing the Project indicators with those recognized in said system. It should be noted that Convergence especially allows to monitor the budget execution, so it would have not allowed monitoring the Project outcome and impact indicators - which showed weaknesses since their formulation in the design phase.

In addition to what was indicated in the ProDoc, through a letter of agreement the IDB provided and requested that, as part of their monitoring and evaluation, each Executing Agency should provide the IDB with half-yearly progress reports and a final report. Evidence points at the fact that each EA submitted a final report, but for most of the Agencies and years there is only one half-yearly report because many of them combined the second half-yearly report with the annual report.

Due to this being a large Project involving many executing partners, the interviewees consider that the M&E workload was underestimated, for example, because insufficient staff was allocated to this task. This, combined with the absence of specific planning to interpret the indicators, and define scopes, responsibilities and standardized forms resulted in significant deficiencies in the M&E.

3.2 Project Implementation

3.2.1 Project Execution Mechanism

The execution mechanisms are relatively simple and straightforward, which is reflected in a light structure that concentrates the Project coordination and leadership in one compact coordination unit formed by two people. The design underestimated the workload associated with coordinating the actions of five executing partners with different capacities and characteristics simultaneously implementing initiatives with multiple actors and countries.

While it could be interpreted as an efficient implementation mechanism in the use of resources, in practice the insufficient staff impacted the response capacity in terms of quality assurance, smoothness of procurement, monitoring and tracking processes and, in general,

the execution timeframes. This gap was partly filled through specific support received from thematic experts from different IDB divisions, through, for example, the review of terms of reference. However, in spite of the efforts made by the coordinating unit, interviewees mentioned that in practice it was difficult to involve and engage other IDB divisions, as well as other country offices where the Project made interventions.

The achievement of results was possible thanks to the commitment and ownership of the five EAs, which demonstrated to have the necessary capacity to execute nearly all of the intended outputs with a reasonable level of involvement of beneficiaries and stakeholders. In this regard, the EAs make reference to the freedom they had to develop their outputs, thanks to the greater leeway to assume risks that the GEF resources represent and the adaptive management capacity of IDB, especially since the second team in charge of the Project took over.

However, the interviews confirm that the weakness identified in the design translated into a fragmented implementation with nearly no links or spaces relating the interventions of the different Executing Agencies. For example, throughout the intervention there was only one meeting where all the EAs participated along with IDB.

The main gap in the Project implementation mechanism lies in governance and participation. To begin with, the design did not contemplate a Steering Committee, and the Technical Committee that was indeed provided for in the design never materialized. In the opinion of the interviewees, this gap was an additional element that favored a fragmented intervention with little contact and coordination among the EAs. Also, in terms of the sustainability of investments, the absence of these governance spaces may have contributed to the fact that, with the Project having closed, there is no clear commitment to keep monitoring the investments and achieved results. Another aspect closely tied to this was the relatively low articulation with other projects in the GEF portfolio or initiatives of the IDB or other actors that had been identified as key in the design phase, like CTCN or the three similar projects carried out in Europe, Asia, and Africa.

As regards the most relevant aspects that affected the execution, there was the turnover of staff and key actors, starting from the team in charge of the Project from the IDB side - which changed three times during the implementation - and also the EAs, like Fundacion Bariloche

- which changed its two coordinators. Apart from the slowing down of the execution, the turnover entailed a loss of memory for the Project, especially during the first change in the IDB team. It is worth mentioning that the turnover of officials, and to a lesser extent of technical staff, is also frequently mentioned as a barrier to maintaining engagement and ownership on the part of the main Project beneficiaries in the public sector.

No changes or modifications are seen in the results framework, except for some minor adjustments in terms of the coverage targets for certain indicators. It is mentioned that during the initial implementation phase, there wasn't enough flexibility to adapt the design of the Project and its implementation strategy to the context and, especially, to the new challenges presented by the advance of intergovernmental negotiations on climate change. Also, testimonials point at a complicated kick-off, with difficulties in the interaction with certain EAs and, in certain cases, a trend towards micro-management was seen in the IDB team coordinating the Project. This was reflected in the execution timeframes, in the approach of the first studies commissioned and, finally, also in a wear out of the relation with the AEs, to the point that one of them changed its two coordinators.

3.2.2 Engagement, cooperation and ownership of the different stakeholders and partners

Overall, there was a high level of engagement and commitment of all the EAs - or otherwise it would have been difficult to accomplish the results achieved by the Project - in spite of the fact that the EAs were not present in all the countries where the Project operated, and the support of the IDB to the activities implemented at a country level was not always available.

The EAs played a key role in fostering the active participation and ownership of the main beneficiaries, taking advantage of their position and reputation to mobilize the different actors and Project beneficiaries. However, testimonials point at a largely fragmented participation, in sync with an intervention that revolved around four central themes, with nearly no spaces for structured communication between the different interventions. In addition, the engagement of the academia is considered relatively low, taking into consideration the potential of the different themes addressed and the role of the academia in the region.

The public sector was the main beneficiary of the different Project interventions, involving the ministries of the different sectors, agencies, and government institutes related to the thematic areas, as well as the environmental authorities in each country. Consequently, the public sector became the main client for nearly all of the activities. It is also worth mentioning that one of the EAs, INECC, is a public institution.

According to the interviewees, the participation of the private sector was largely low, with certain exceptions like the work done with the transport sector, where WRI incorporated banks, investors and private companies into its dialogs and roundtables, thus adopting a cross-sectoral approach in its intervention. FONTAGRO was also successful in mobilizing the private sector; it even succeeded in having a company participate in the commercialization of its products in Chile, Ecuador, and Bolivia. It should be mentioned that, from the IDB side, especially since it changed the project team, efforts were made to foster the utilization of the studies undertaken, engaging the different areas of the Bank in their development and ownership.

Actor	Role	Comments
Inter-American Development Bank	Implementing Agency Project Manager and General Coordinator	Through its Climate Change Division (CSD/CCS), the IDB exercised its leadership since the Project formulation, selecting and supervising the EAs, presenting reports and performing other functions related to the IA. It played a key role in the articulation with different areas and levels of work, as well as with beneficiaries and other participating actors. Its participation was negatively affected by staff turnover and loss of memory, of both the teams allocated to the Project and other technical staff and teams in Bank areas related to EST. The performance and commitment of the team in spite of the scarce staff allocated to the coordination of an ambitious agenda and 5 EAs with different characteristics and capacities, is recognized.
Instituto Nacional de Ecología y Cambio Climático (INECC) of Mexico	Executing Agency Component 1: Development of national policy and institutional capacities	It is a public organization in Mexico and it is the only one of its type that participated as EA in the Project. INECC had no experience in this type of financed projects, so it found it harder to operate under the IDB procedures. To execute Component 1, INECC hired a technical coordinator and an assistant using GEF resources. There is evidence of high levels of ownership, as well as a proactive and motivated attitude. The intervention of INECC proved strategic, since it attracted the interest of different actors, generating expectations and fostering the participation of beneficiaries. The liaison established with national science and technology bureaus is remarkable. Although it was sought to keep the network active, it was not possible to crystalize Guatemala's interest to facilitate this space.

World Resources Institute (WRI/Emb arq) from the USA	<p>Executing Agency</p> <p>Components 2, 3, and 4 in the transport sector</p>	<p>Private non-profit corporation based in Washington DC. EMBARQ, the WRI center for sustainable transport, catalyzes and support sustainable transport solutions to improve the standard of living in the cities. Thanks to the capacities generated through the Project, WRI has expanded its offer of technical assistance related to electric transport in Africa and Asia.</p> <p>WRI was the only EA that could hire its own staff instead of exclusively relying on consultants, like the other EAs did. Its positioning was key in mobilizing public and private actors in the transport sector, which stimulated the interest of countries in proposing concrete solutions and selecting interventions with greater chances of materializing - as is the case with the studies generated for Colombia and Chile, with both countries intending to continue with what is provided in those studies.</p>
Fundacion Bariloche	<p>Executing Agency</p> <p>Components 2, 3, and 4 in the Renewable Energy and Energy Efficient sector</p>	<p>Fundacion Bariloche is a private non-profit institution based in Argentina. It hired 2 project coordinators, one for energy efficiency and the other for renewable energies, both based in different countries and financed with GEF resources. During the startup phase, its participation was not smooth, due to coordination issues and differences with the IDB team, which led to the full replacement of the first team.</p> <p>In terms of participation, the consultation process undertaken by FB to survey the demand for technical assistance is worth noting. According to the interviewees, this resulted in greater commitment and ownership among beneficiaries. Interviewees also mention its strength related to the communication and dissemination processes, as it exceeded by far the targets in terms of number of participants.</p>
Regional Fund for Agricultural Technology (FONTAGRO)	<p>Components 2, 3, and 4 in the agricultural sector</p>	<p>FONTAGRO is an initiative supported by IDB and Instituto Interamericano de Cooperacion para la Agricultura (IICA) to promote the development of technologies for the agricultural sector. The high level of participation and ownership of FONTAGRO is recognized. It hired three agricultural specialists to develop the project proposals for the studies undertaken.</p> <p>The strength of this actor lies in its capacity to mobilize an extensive network of public agricultural research institutes across the region. The approach used for selecting studies to be developed in the next phase through an open call to all the countries is positively evaluated. FONTAGRO has been the only EA to obtain specific cofinancing, for it managed to have the National Governments request investment funds from IDB to finance projects in Panama, Haiti, Nicaragua, and the Dominican Republic.</p>
Centro Agronomico Tropical de Investigacion y	<p>Components 2, 3, and 4 in the forestry sector</p>	<p>Private non-profit organization based in Costa Rica. The GEF grant enabled financing a technical coordinator for forestry that worked from CATIE headquarters.</p> <p>Given the prioritized theme, the participatory approach was exclusively targeted at the public sector. For the selection of beneficiaries, the governments were invited to submit requests for</p>

Enseñanza (CATIE) from Costa Rica	support of their monitoring systems, and it stands out the capacity of CATIE to sustain the participation of the involved officials and transfer them knowledge. The work done jointly with governments enabled anchoring the systems to each country's platforms, ensuring the sustainability of processes.
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3.2.3 Environmental and Social Safeguards

Given that the Project was classified as C, that is, it does not generate significant environmental or social impacts, it was not necessary for the EAs to actively or explicitly incorporate them in their activities.

3.2.4 Gender

According to the testimonials obtained, during the implementation no specific guides or guidelines were available for the incorporation of a gender-focused approach, beyond the practices or policies in place at the EAs. On top of this, none of the five EAs received support, training or guidance from the IA in connection with this issue. There is no record either of initiatives explicitly seeking to improve the involvement of women in the governance, benefits, and activities of the Project.

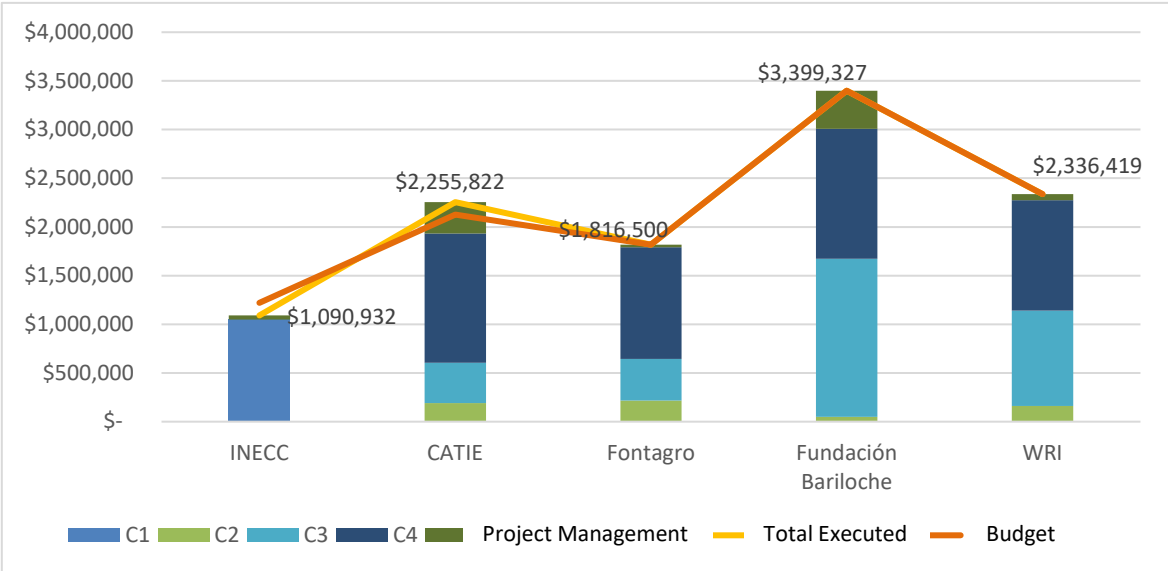
During the Project execution none of the expected adjustments were made to the results framework indicators to, for example, enable reporting beneficiaries by gender, even if certain indicators did enable this, for example, number of participants. While this does not necessarily mean that this type of considerations have been completely absent from the implementation, they are not reflected in any of the design, execution or monitoring instruments of the Project.

The Technical Cooperation Document states the Project will address the inclusion of relevant gender issues and impacts on the low-income groups in relation to environmentally sound technologies and the interventions to foster the development and transfer of ecological technologies. A review has been made of the documents generated by the 5 EAs within the framework of the 4 Components in relation to what has been just discussed, and it has been concluded that the inputs generated have not contemplated those issues, or they have been addressed only superficially, as is the case with CATIE.

3.2.5 Project financing

According to the ProDoc, the budget financed by the GEF was USD 10,899,000. By 2020, according to the different reports of the EAs, all of the resources had been executed, that is, 100% of the disbursement received from GEF. As seen in Chart 2, Fundacion Bariloche, FONTAGRO, and WRI have fully executed the budget. This was not the case with CATIE and INECC. In both cases, there was a variation in the originally proposed execution. INECC executed its contemplated activities with less than the allocated resources, so there was a balance of USD 129,403¹, which was transferred to CATIE in 2019 for Component 4, to reinforce technology transfer. This variation was reported to GEF in the PIR 2019 and, given the movement occurred within the Project itself, it was not necessary to request a prior authorization from GEF.

Chart 2 Budget Execution by Component and by EA



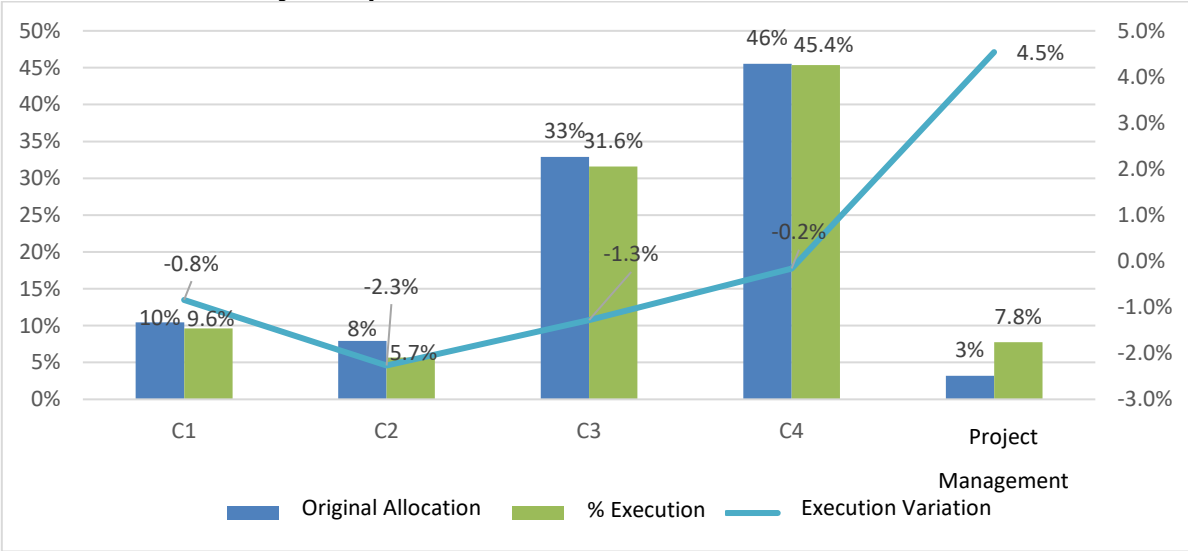
Source: Final Technical Reports of INECC, CATIE, FONTAGRO, Fundacion Bariloche, and WRI, 2020

When comparing the financial execution at the Component level, the ProDoc originally allocated the greatest amount of the Project resources to Component 4 (46%) - which materialized in the execution (45%). However, there was a considerable variation in the

¹ From this amount, USD 29,610.66 were in the IDB account and were not disbursed to INECC, while USD 99,792.01 had been requested by INECC to complete the execution of the Project, but were not executed.

financial execution related to Project Management - as seen in the following Chart, 4.5% more than originally proposed was executed.

Chart 3 Execution by Component v. Planned Allocation



Source: Final Technical Reports of INECC, CATIE, FONTAGRO, Fundacion Bariloche, and WRI, 2020

This is confirmed when comparing the allocation of resources at the Component level. It is clearly Component 4 that received the greatest amount of resources (45%), followed by Component 3 (32%), and then Component 1 (8%) and Component 2 (6%).

It is worth mentioning that, generally speaking, the Project saw a variation in the original allocation of resources for Project Management. While USD 350,636 had been originally allocated, USD 845,237 were actually executed.

Until this cut date, it has not been possible to show a detail of the annual execution by Component and Executing Agency because the information has not been duly submitted by each EA. In this regard, references are made to the absence of a form for the half-yearly reports that were to be delivered by the EAs. In addition, some of the Agencies' reporting was done at the Component level and others at the expense level. Also, in some cases the reports delivered were draft versions or are incomplete.

At the cofinancing level, the Project maintains a report for the complete execution period. Based on the amount of resources confirmed in the ProDoc, USD 56,550,000 were expected to be mobilized. As of the closing of the cofinancing report, the Project had managed to

channel USD 205 million, which were mobilized through the execution of Component 4 on the side of FONTAGRO. They comprise a loan of USD 55 million granted by IDB to Haiti to increase the agricultural revenues and food security of small farmers, and the remaining USD 150 million came from a results-based loan for sustainable agro-forestry development in the Dominican Republic. A detail is presented in Table 2 below:

Table 2 Project Cofinancing (USD)

Sources of Cofinancing	Name of Co-Financier	Type of Co-Financing	Amount confirmed at CEO approval/endorsement	Mobilized investment MTR	Actual amount materialized as of the Project closing date
GEF Agency	IDB	Loan	50000000.00	205,000,000.00	205,000,000.00
GEF Agency	IDB	Other	5,000,000.00		
GEF Agency	IDB	In kind	500,000.00		
Other	FONTAGRO	Grant	1,050,000.00	650,163.00	1,135,370.00
Other	WRI	Other			20,562,357.28
TOTAL			56,550,000.00	205,650,163.00	226,697,727.28

Source: Project Co-Financing Report, 2021.

3.3 Project Outcomes

3.3.1 Outcomes by Component

3.3.1.1 Component 1

	Baseline	Target	Fulfillment TE		Comment
			#	%	
Output 1.1. Workshops on environmentally sound technologies and technological innovation systems.					
Indicator 1.1.1 Number of workshops held	0	3	3	100%	The 3 contemplated workshops were held: 1. Outreach Workshop (November 21 and 22, 2017), 27 experts from Ecuador, Colombia, and Mexico participated. 2. National Innovation Systems Validation Workshop (April 11 and 12, 2018), 23 experts from the region participated. 3. Dissemination Workshop (October 16 and 17, 2018), 45

					experts from 16 countries participated).
Indicator 1.1.2 Number of government representatives participating in workshops	0	40	208	520%	The target was adjusted from 50 to 60 representatives. It was met with 208 people trained: <ul style="list-style-type: none"> • 27 experts from Ecuador, Colombia and Mexico attended the Outreach Workshop. • 45 experts attended the Dissemination Workshop. • 136 people attended the regional dialog workshops.
Indicator 1.1.3 Number of different countries participating in workshops	0	20	19	95%	The target was adjusted from 15 to 20 countries. The 3 events convened representatives from more than 19 countries, and the Validation Workshop convened representatives from Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, and Uruguay.
Output 1.2. Guide on EST					
Indicator 1.2.1. Number of guides published	0	1	1	100%	In 2019, the final version of the document called “Policy recommendations for the incorporation of environmentally sound technologies in national innovation systems (NIS)” was developed and released.
Output 1.3. Regional dialogs on climate change planning and environmentally sound technologies					
Indicator 1.3.1 Number of workshops held	0	3	3	100%	The 3 contemplated workshops were held: <ol style="list-style-type: none"> 1. The Outreach Workshop on climate change planning was held in Mexico on June 5 and 6, 2018. Thirty one experts from the region participated. 2. Validation Workshop on Climate change planning and EST (September 10 and 11 2018), 11 countries represented by 24 experts participated. 3. Dissemination Workshop on Climate change planning and EST (October 24 and 25, 2018), 17 countries represented by 57 experts participated.

Indicator 1.3.2 Number of government representatives trained in climate change planning practices	0	60	193	321%	The target was adjusted from 50 to 60 representatives. It was met with 193 people trained: <ul style="list-style-type: none"> • 57 participants at the Dissemination Workshop on climate change planning and EST. • 136 people attended the regional dialog workshops.
Indicator 1.3.3 Number of different countries participating in workshops	0	20	18	90%	The 3 events convened representatives from more than 19 countries, and the Outreach Workshop convened representatives from Brazil, Spain, Mexico, Dominican Republic, Cuba, Bolivia, Uruguay, Chile, Costa Rica, Colombia, Ecuador.
Output 1.4. Guidelines on climate change planning and environmentally sound technologies					
Indicator 1.4.1 Number of guides published	0	1	1	100%	In 2019, the final document "Guidebook on Climate Change Planning and EST" had been developed and released.

3.3.1.2 Component 2

	Baseline	Target	Fulfillment TE		Comment					
			#	%						
Output 2.1 Workshops/side events for the promotion of thematic networks										
Indicator 2.1.1 Number of workshops/side events	0	12	57	475%	Over the Project implementation, a number of side events were held.					
						FB	CATIE	F	WRI	IDB
					2015	3	3			
					2016	2	1			
					2017	7	2	5	7	
					2018	6		2	3	1
					2019	7	2	3	2	
					2020	10	1	1	2	
					2021	1				1
Total	36	9	11	14	1					
Indicator 2.1.2 Number of different countries participating in workshops/side events	0	20			This indicator is not identified in the convergence matrix.					
Output 2.2 Mapping of regional expertise on EST										
Indicator 2.2.1 Number of sectoral resources/expertise databases	0	4	4	100%	A database was created for each institution for the different sectors: FONTAGRO: Regional database on sustainable cattle ranching technology for climate change adaptation and					

					mitigation in LAC, created as a result of the Cattle Ranching Platform. Fundacion Bariloche: It developed the Energy platform.
Output 2.3 Sectoral profiles (overviews) of EST in ALC					
Indicator 2.3.1 Number of overviews of EST for specific sectors in ALC	0	6		100%	Seven sectoral EST profiles are reported: Status of forest monitoring un Latin American and the Caribbean, Types of initiatives and use of technologies; Technologies for monitoring the impacts and carbon emissions of forestry and timber traceability in natural forests in LAC; Interventions and environmentally sound technologies (EST) for climate change adaptation in the agricultural and cattle ranching sector in LAC; Agriculture - Innovations for the adaptation of family agriculture to climate change in LAC - Successful case studies; Climate change technology transfer mechanisms and networks in LAC: Experience in the Energy Efficiency and Renewable Energies Sector; Informal and Semi-formal Services in Latin America: An Overview of Public Transportation Reforms (Nov 2020).
Output 2.4 Business plans for thematic networks					
Indicator 2.4.1 Number of business plans for thematic networks	0	4			For this indicator, until 2017 it had not been identified what these 4 plans were related to. In 2019 it was reported that the Project did not create new networks, but worked to strengthen the existing network already working on EST; the 4 EAs decided to prepare recommendations on how to continue the work (not an actual business plan).

3.3.1.3 Component 3

	Baseline	Target	Fulfillment TE		Comment
			#	%	
Output 3.1 Case studies on EST development and transfer					
Indicator 3.1.1 Number of case studies prepared and disseminated	0	7	36	514%	WRI: It developed 29 case studies. CATIE: It reports to have prepared of 4 documents about lessons learned. FONTAGRO: It records 3 documents related to terminal project reports, lessons learned, action plans, among other things.

					Fundacion Bariloche: It developed 9 case studies.
Output 3.2 Technology roadmaps for the adoption of EST					
Indicator 3.2.1 Number of technology roadmaps completed and disseminated	0	5	7	140%	<p>A comparative evaluation of regulations on efficiency standards for buildings in Latin America and the Caribbean was prepared.</p> <p>WRI: It developed 4 documents related to action plan and roadmap.</p> <p>Fundacion Bariloche: It developed 1 roadmap.</p> <p>FONTAGRO: It reports having developed 1 roadmap.</p>
Output 3.3 Assessments of EST transfer mechanisms					
Indicator 3.3.1 Number of assessments of mechanisms for the adoption of EST preped and disseminated	0	5	9	140%	<p>WRI: It reports 4 assessments.</p> <p>Fundacion Bariloche: It records 5 assessments in total.</p>

3.3.1.4 Component 4

	Baseline	Target	Fulfillment TE		Comment																														
			#	%																															
Output 4.1 Support to country-driven investment initiatives on EST																																			
Indicator 4.1.1 Number of procedures for the selection and delivery of technical assistance approved	0	4			This indicator is not evidenced in the Convergence report.																														
Indicator 4.1.2 Technical assessments of EST completed	0	15	18	120%	<table border="1"> <thead> <tr> <th></th> <th>FB</th> <th>WRI</th> <th>F</th> <th>CATIE</th> </tr> </thead> <tbody> <tr> <td>2017</td> <td></td> <td>1</td> <td></td> <td>4</td> </tr> <tr> <td>2018</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>2019</td> <td></td> <td></td> <td>2</td> <td></td> </tr> <tr> <td>2020</td> <td>10</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>10</td> <td>1</td> <td>2</td> <td>5</td> </tr> </tbody> </table>		FB	WRI	F	CATIE	2017		1		4	2018				1	2019			2		2020	10				Total	10	1	2	5
	FB					WRI	F	CATIE																											
2017						1		4																											
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2020	10																																		
Total	10	1	2	5																															
Indicator 4.1.3 Cost-benefit, market studies or financial models and assessments of EST completed	0																																		

Indicator 4.1.4 Number of project proposals on EST development and transfer completed	0	8	14	175%	They were developed				
						FB	WRI	F	CATIE
					2017	3	1		4
					2018		2	1	1
					2019	2			
					2020				
Total		5	3	1	5				
Indicator 4.1.5 Number of collaborative projects on EST for adaptation in agriculture completed	0	6	8	133%	FONTAGRO: 1. Rice Intensification System (RIS) 2. Climate-smart Agriculture 3. Adaptation and mitigation strategies of cattle ranching systems; 4. Water management for banana trees, solar dryers for cocoa, pest control at coffee plantations, and development of non-traditional crops, like <i>Lupinus spp.</i> ; 5. Development of a national rice program in Panama; 6. National program for water harvesting and irrigation in Nicaragua; 7. Technology transfer program for small farmers in Haiti; 8. Implementation of agroforestry systems in Dominican Republic.				

3.3.2 Assessment by type of technology (EST)

Sector	EST	Scale	Relevance	Transfer / Replication	Sustainability Potential	Impact
Agriculture	Development of a national rice program in Panama	National	High	High	Medium	High
	National program for water harvesting and irrigation in Nicaragua	National	High	Medium	Medium	High
	Technology transfer program for small farmers in Haiti	National	Medium	Medium	Medium	High
	Implementation of agroforestry systems in Dominican Republic	National	Medium	Medium	High	Medium
	Improvement of the Rice Intensification System (RIS)	National	High	High	Medium	High
	Implementation of a Climate-smart Agricultural Model and development of Adaptation and Mitigation Strategies for Cattle Ranching Systems	National	High	High	Medium	High
	Water management for banana trees, solar dryers for cocoa, pest control at coffee plantations	National	High	High	Medium	High
Energy Efficiency	Development of improved seeds for non-traditional crops, like Lupinus spp	National	High	High	Medium	High
	Survey on and development of sustainable behavior standards for buildings in the Galapagos Islands	National	High	Medium	Medium	High
	Generation of inputs for the design of a program for grid connection regularization geared towards households under socioeconomic vulnerability conditions in Uruguay	National	Medium	Medium	Low	Medium
	Low-carbon development for the Chilean concrete industry	National	High	High	Medium	High
	Low-carbon development for the Chilean metallurgical industry	National	High	High	Medium	High
	Structuring of an Energy Management System based on the ISO 50001 standard for 4 buildings that are an icon of the University of Buenos Aires:	National	Medium	Medium	Medium	Medium
Distributed generation with solar PV and storage for the North West of the Province of Santa Fe, Argentina	National	High	High	Low	Medium	

Sector	EST	Scale	Relevance	Transfer / Replication	Sustainability Potential	Impact
	PV Systems in 104 Educational Institutions in the Sub-region of Sanquianga in the Gobernacion of Nariño, Colombia	National	High	High	Low	Medium
	Carbon Management Plan of the Government of the State of Jalisco, Mexico	National	Medium	Medium	Low	Medium
	Designs of solar PV systems for Colombia and Mexico	National	High	High	Low	Medium
	Economic assessment of the energy potential of forest biomass in the Northern Huetar Region in Costa Rica	National	Medium	Medium	Medium	Medium
	Analysis and technical basis for the formulation of a fiscal policy proposal that promotes, through an extended corporate responsibility approach, the use and harnessing of distributed generation from renewable resources	National	High	Medium	Medium	High
	Development of an Action Plan for a Sustainable Energy Transition in the Galapagos Islands, 2020-2040	National	High	Medium	Medium	Medium
	Assessment of isolated solar PV systems and their sustainability schemes - Colombia	National	Medium	Medium	Low	Medium
	Lines of action for a sustainable energy recovery from biomass waste generated by the African palm tree and rice (husk) agroindustry in Ecuador, for distributed generation of electric power.	National	Medium	Medium	Low	Medium
Forest monitoring	Brazil – SINAFLOR: i) Development of a mobile app for field monitoring, ii) An online platform to disseminate public information, and iii) Online training course for governmental and private users.	National	High	High	Medium	High
	Costa Rica - design of SIMOCUTE: i) Design of an online platform for the integration of national statistics; ii) Identification of financing opportunities.	National	High	High	High	High
	Mexico i) Design and development of a graphical interface and universal data for the National Forest and Soil Inventory (NFSI).	National	High	High	High	Medium

Sector	EST	Scale	Relevance	Transfer / Replication	Sustainability Potential	Impact
	ii) Improvement and institutionalization of the Mad-Mex software, and iii) Training on carbon accounting and national GHG inventories					
	Suriname – SFISS i) Building of a multi-purpose national forest monitoring system (SFISS) for forest products. ii) National strengthening in SFISS, ensuring the sustainability of the technologies through the development of bankable technical proposals.	National	High	High	Medium	High
	Dominican Republic - CENIGA: i) Adoption of tele detection processing software and technologies to map and monitor agroforestry systems at the national level.	National	High	High	Medium	High
Transportation	Technical assistance to the Municipality of La Paz, Bolivia, to pilot a project to support the restructuring of its bus system through Intelligent Transportation Systems.	National	Medium	Medium	Medium	Medium
	Technical assistance to the City of Bogota for the analysis of data related to taxicabs	National	Medium	Medium	Low	Low
	Technical assistance to the City of Salta, Argentina, for the implementation of a public bicycle-sharing system	National	Low	Medium	Low	Low
	Technical assistance for the implementation of a roadmap for a fuel-economy standard in Colombia	National	High	High	Medium	High
	Technical assistance to the City of Belo Horizonte and Contagem for the adoption of electrical buses	National	High	High	Medium	High
	Technical assistance to the City of Santiago de Chile for the adoption of electrical buses	National	High	High	High	High

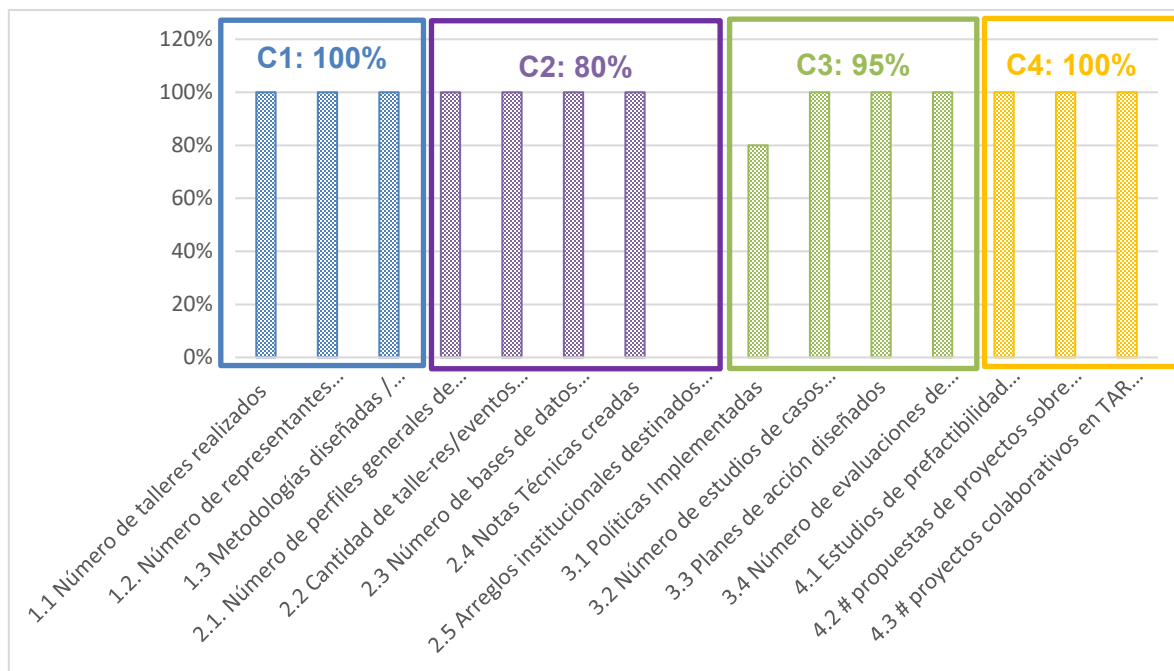
3.3.3 Effectiveness

The effectiveness is the extent to which the Project Objectives were achieved or are expected to be achieved; this term also describes the extent to which the intervention has met, or is expected to meet, its most relevant objectives in an efficient and sustainable way.

To calculate the progress percentage by Component, the progress in the indicators related to each Component has been averaged out. Considering this, it can be observed that, a few months after its closure, the Project reported a 100% fulfillment of Component 1. As for the other Components, although most of their indicators show a progress of 100%, some do not, most specifically the following indicators (Chart 4):

- Indicator 2.5 Institutional arrangements seeking regional coordination;
- Indicator 3.1 Implemented policies;
- Indicator 4.1 Pre-feasibility assessments (EST technical evaluations completed, cost-benefit, market studies or financial models and assessments of EST completed).

Chart 4 Progress of Component Indicators



Source: Project Convergence Reports, 2020. [1.1 Number of workshops held; 1.2 Number of representatives...; 1.3 Methodologies designed /...; 2.1. Number of general profiles...; 2.2 Number of workshops/events...; 2.3 Number of databases...; 2.4 Technical Notes created...; 2.5 Institutional arrangements...; 3.1 Policies implemented; 3.2 Number of case studies...; 3.3 Action plans...; 3.4 Number of

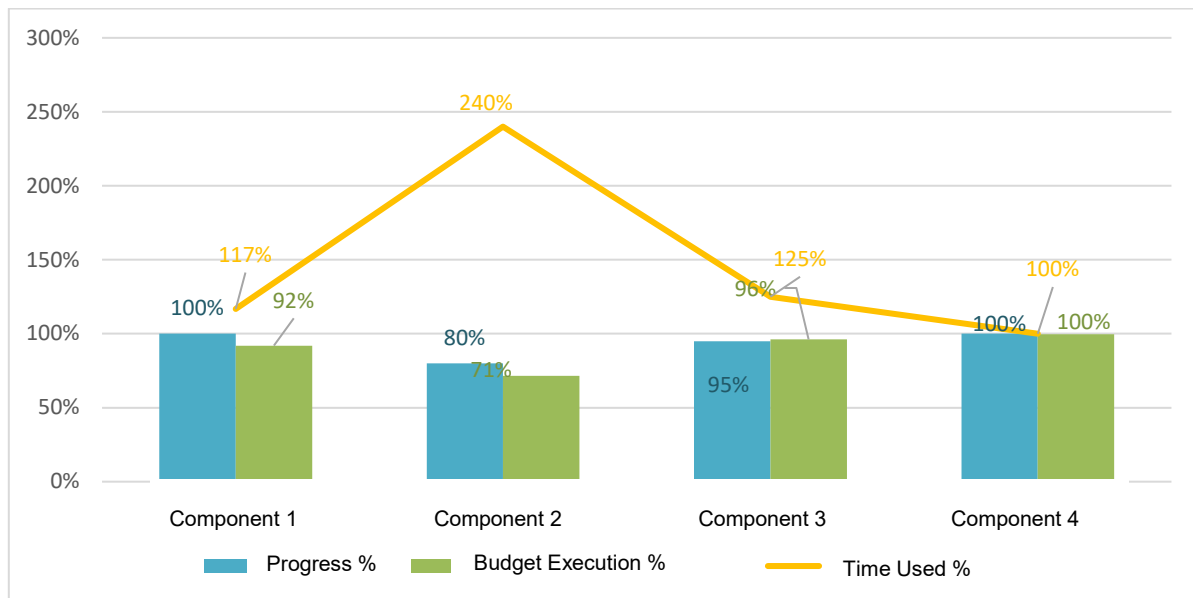
evaluations...; 4.1 Pre-feasibility studies...; 4.2 Number of proposals of projects on...; 4.3 Number of collaborative projects on...

3.3.4 Efficiency

In terms of efficiency, that is, the capacity to achieve the expected outcomes using the minimum possible amount of resources and time, findings point at an efficient intervention in terms of use of financial resources and, to a lesser extent, in terms of time - two time extensions were requested to GEF.

The following analysis was conducted based on the budget originally allocated (ProDoc) to the four Components. In Component 1, 92% of the GEF resources were executed, with 100% of the intended outcome having been achieved, taking 17% more time than planned. Components 2 and 3 show considerable progress, even if the budget execution did not vary from the original budget allocated in the ProDoc. In this case, it is noticeable that all the targets have been met, even considering that their time of execution was longer than planned. As regards Component 4, it spend 99.7% of the originally budgeted resources, it was implemented within the expected timeframe, and its progress stands at 84% (Chart 5).

Chart 5 Budget Execution v. Component Progress % v. Implementation Time %



Source: Final Technical Reports of INECC, CATIE, FONTAGRO, Fundacion Bariloche, and WRI, 2020: PIRs, 2019

Among the cost-effective practices mentioned by the interviewees, the decision to work on and strengthen the existing networks, instead of seeking to create new ones, is worth noting. Except for WRI, which engaged staff of its own for the Project, the other executing partners consider that the Project could have made a better use of the installed capacity in each institution, given that certain specific outputs and intervention could have been addressed with the institutions' own staff, instead of hiring consultants.

The budget execution processes and policies of IDB presented a considerable challenge to all the EAs, and demanded considerable amounts of time, which impacted on the efficiency of the procurement processes. This was most evident for INECC, as a state entity with no experience executing this type of projects. However, in spite of the complexity of harmonizing their processes and practices, they value the experience as an institutional strengthening opportunity. In contrast, FONTAGRO faced less difficulties because it operates within IDB and WRI. Another frequently mentioned aspect was the difficulty in publishing the relevant inputs generated by the Project due to the IDB policies, which entails a long, complex, and costly processes.

On average, contracting and procurement processes took from 3 to 4 months, which is within the standard threshold for IDB operations. However, all the EAs confirmed that their timeframes for these processes are typically shorter.

3.4 Impact

The Project design considered two metrics to measure the impact of the GEF investments. One is the GHG reduction - which faced methodological issues derived from estimating emission reductions from measures that fostered favorable conditions or environments. The methodology to estimate the emission reductions for each activity related to transport and energy was jointly developed by the Project Coordination team, WRI and Fundacion Bariloche, with advice from the GEF Secretariat - Programs Unit. However, the quantification of the impact for the agricultural and forest monitoring sectors proved more difficult and subjective, so it was decided not to report it. Given that the methodologies were designed close to the Project end, all the interventions were developed without knowing their objective contribution to the Project or their soundness in terms of GHG reduction.

Based on the reported information, for the GHG emission reductions indicator, the estimations for the transport sector under a conservative approach evidence that the Project will directly contribute to reducing 12 million tons of Co2e emissions, and indirectly contribute to reducing 7 tons of Co2e. For the energy sector, it has been determined that 36 tons of Co2e emissions will be avoided between 2017 and 2030, considering the implementation of 15 of the 25 studies undertaken. For the other 10 studies, it was not possible to estimate the emission reductions due to a lack of information or the type of study.

The second objective indicator was successfully accomplished, with the target for investments mobilized by the Project being exceeded by almost fourfold. Until the Project closure, a mobilization of USD 205 million was recorded for two projects in the agroforestry sector (USD 55 million granted to Haiti, and a results-based USD 150 million loan granted to Dominican Republic for sustainable agroforestry development).

While the target has been exceeded by far, the concentration of investments suggests that only an extremely low percentage of the projects and studies developed were successful in the accomplishment of this indicator. The fact of not having allocated quotas by target sector, or specific cofinancing targets by EA, may have impacted on the fulfillment of this target, also considering that mobilizing cofinancing resources in the context of this Project entails a highly complex result subject to considerable uncertainty, since the materialization of investment projects typically involves other timeframes and conditions that exceed the scope of this intervention.

Reducing the impact of a Project with this characteristics to two indicators does not reflect the true dimension and scope of the interventions made. Interviewees agree that the Project has great merit for being a pioneering and ambitious initiative, capable of mainstreaming issues related to climate change and the adoption of climate change-related technologies in a region where environmental institutionalization is still relatively distant from these topics. They recognize the impact achieved in the focal areas, in terms of mainstreaming these themes, as well as promoting discussions on these themes at the regional scale. The Project impact therefore extends to government officials, technical specialists and experts in different sectors, who strengthened their capacities through the webinars, studies and events developed by the Project.

Interviewees agree that the Project addressed quite different themes with multiple intervention scales, which can ultimately contribute to the impact of the intervention being perceived as dispersed. For some EST, like transport technologies, there were fewer but more targeted interventions in terms of themes and intervention environments, so their impact is perceived as relatively larger than that for other EST, like energy efficiency technologies, where the themes were more dispersed and ample. However, according to the interviewees, this apparent dispersion was in turn an opportunity for the EAs and beneficiaries to undertake studies and explore themes that would have normally not been financed by other donors or projects.

Among the most relevant impacts, it is worth highlighting that, through the Project, WRI successfully solved one of the most critical junctions in the operation of the electrical buses. The EA took advantage of the processes that were already underway, focusing its work on the financial model to solve the existing barrier that prevented the widespread implementation of electric buses. This intervention was critical - thanks to it Santiago de Chile and Bogota currently have two of the largest electrical bus fleets in the world, excluding China. Thanks to the capacity built by the Project, WRI could replicate the same model in other countries like China, India, Turkey, and Ethiopia.

As regards CATIE, its intervention translated into the strengthening of the national monitoring, reporting and verification (MRV) systems for forests in countries like Brazil, which is currently using and has fully incorporated the apps developed, or like Mexico, where the Project reactivated and added value to systems which would have otherwise lacked the necessary resources for their development.

As regards Fundacion Bariloche, its impact lies in the wide range of themes, sectors and actors involved, and the data and knowledge base generated, which - according to the interviewees - could hardly be financed through the channels and mechanisms existing in the region. The intervention responded to the specific demands of the 15 participants, so it achieved good results in terms of ownership by the beneficiaries.

In the case of FONTAGRO, financial support was provided to pilot studies on climate variability which enabled working directly on farms, identifying productive practices to avoid losses related to climate extremes. This validation of technologies was key, especially in

Central America and the Caribbean, due to their exposure to climate extremes, like hurricanes and droughts. It also finances projects with high potential for replication and bankability, like the technology tested in Panama for rice cultivation. The very nature of FONTAGRO, as an actor in the inter-American system directly linked to agricultural and cattle ranching research institutes throughout the region, was key to incorporate climate change into the official agendas on applied research in the region.

3.5 Sustainability

Regarding the sustainability of the investments made, the Project still lacks an explicit exit plan or strategy that defines clear institutional roles, responsibilities, and commitments with a view to maintaining, replicating, and scaling up the investments made over time. However, it has been confirmed that the Project will agree with the GEF Technical Coordination at IDB the possibilities for a sectoral monitoring at the time of its closure.

Although the IA and the EAs confirm their intention to sustain their participation and institutional presence in the different spaces and activities related to EST, there is no evidence of a structured and planned approach to the sustainability of the Project; that is to say, the institutions are assuming a relatively passive role, and there is no evidence of activities or projects seeking to sustain and maintain the Project investments over time.

From the perspective of the IA as a development bank, different interviewees agree that it is necessary to view the Project as a bridge investment, which in this first phase has managed to mobilize actors and generate enabling conditions to incubate a portfolio of potential investment projects at the regional scale. Said portfolio, combined with the generation of knowledge and enabling conditions for technology transfer, becomes the great legacy of the Project, and at the same time represents an important asset for the IDB Group, including its private sector windows, IDB Invest and IDB Lab.

As regards the specific initiatives supported by the Project, different sustainability perspectives can be identified, considering that in nearly all cases the Project interventions achieved high levels of engagement and ownership by its beneficiaries. In this regard, the approach to achieve the beneficiaries' ownership followed by Fundacion Bariloche is worth mentioning, since it sought to engage sectoral specialists in each country so that they could support the different activities. Its objective was not only to share knowledge, but also

generate interest in each country office in relation to the proposals, studies and pilot initiatives generated. In close connection with the aforesaid, and in spite of the difficulty in publishing the information generated by the Project due to the IDB policies, Fundacion Bariloche decided to keep the documents and studies on its website for one additional year in order to answer queries and keep the contact between IDB and the institutions that were engaged during the Project.

Similarly, one of the most evident heritages of Fundacion Bariloche is its investment in training and strengthening the researchers and technical experts of the pilot projects in each country. In this regard, the working dynamics of FONTAGRO in relation to the innovation platforms is worth mentioning. Its transfer model involves bringing together experts (researchers or institutes) in a given theme with others who lack capacities in that field, for them to work together in the technology transfer process.

As regards WRI, it has completed the work for Santiago and Bogota and is already in the process of scaling up and replicating the electrical bus financing model in several countries. In addition, the proposal for “Fuel Efficiency Standards for Light Vehicles in Colombia” is about to be approved and, thus, its impact is supposed to be seen in the long term. In line with this, one of the interventions of Fundacion Bariloche in Galapagos will serve as a basis for the formulation of a project that has already been approved and will be financed by Euroclima, which is expected to start this year.

The interventions of CATIE in all of the countries were developed in close coordination with national institutions and, at least in Mexico and Brazil, the applications and technologies developed are regularly operating and have been incorporated as an integral part of the forest monitoring systems. In the case of Brazil, the sustainability perspective is even better, since the operation of the Monitoring System is supported by a Law that mandates the performance of this type of monitoring. The technology developed is key for gathering data on the decrease in deforestation, as this information is essential for decision making and for accessing the “Results-based Payments” schemes. For this reason, apart from keeping in place the systems that are already operating, sustainability lies in the potential for replicating and scaling them up across the region.

As regards the work of INECC in relation to Component 1, unlike the other EAs - whose technologies are bound to get outdated relatively fast -, its investments are likely to remain current for a longer period. Its sustainability perspective is less clear, since it depends on the countries' interest and will to adopt the generated systems and policy recommendations in a context where it cannot be identified who could assume the leadership to mobilize the countries again within the framework of this cooperation. Therefore, interviews suggest that a key actor for the sustainability of this initiative is CTCN, with which the Project had little coordination and involvement during implementation.

4 COMPARATIVE ANALYSIS - SIMILAR PROJECTS ANALYZED

Multilateral development banks in Europe, Asia, and Africa carried out similar projects with GEF grants. Those projects are developed as part of the Technology Mechanism agreed at the United Nation Framework Convention on Climate Change (UNFCCC), with support from and in coordination with the Technology Executive Committee and CTCN.

The Table below shows key aspects of the four projects analyzed, and evidences how the four development agencies interpreted the challenge and adapted it to their context.

4.1 Similar projects analyzed

Project	Regional Climate Technology Transfer Center	African Climate Technology and Finance Center and Network	Pilot Finance Center and Climate Technology Network of Asia and the Pacific:	Climate Change Technology Transfer Mechanisms and Networks
MU	European Bank for Development and Reconstruction (EBRD)	African Development Bank (AfDB)	Asian Development Bank (ADB)	IDB
GEF financing	USD 10,909,091	USD 14,340,000	USD 10,909,091	USD 10,900,000
Closure date	12-31-2016	05 - 2017	07/31/2019	10-08-2020
Executing Agency(ies)	European Bank for Development and Reconstruction	- Energy, Environment and Climate Change Department of AfDB - SE4ALL Initiative - Sustainable Energy Fund for Africa	- ADB Pilot Climate Technology Finance Centre - Secretariat of the UNEP Climate Technology Network	- INECC - Fundacion Bariloche - WRI - CATIE - FONTAGRO
Components	Component 1: Regional Climate Technology Transfer Center	Component 1: Networking and knowledge dissemination in relation to climate technology transfer and finance	Component 1: Facilitate a network of national and regional centers, networks, organizations and initiatives.	Component 1: Development of national policy and institutional capacities
	Component 2: Technology transfer technical assistance	Component 2: Scaling-up of technology transfer through policy, institutional and organizational reforms of the country and regional enabling environments through TA.	Component 2: Building / strengthening of national and regional technology transfer centers and excellence centers	Component 2: Strengthen technology networks and centers

	Component 3: Climate technology transfer financing pilot	Component 3: Mainstreaming CC in investment programs and projects.	Component 3: Design, development and implementation of policies, programs demonstration projects, and strategies to expand the ETs promoted by the countries Component 4: Integrate climate technology finance needs in the national development strategies, plans and investment priorities Component 5: Catalyze investments in the implementation of EST Component 6: Establish a pilot “market” of low-carbon technology owners and users to facilitate their transfer	Component 3: Pilot technology transfer mechanisms Component 4: Leverage private and public investments
Impact Indicators	1. Direct GHG emissions reductions (Target: 544,000 tons of Co2eq over the 10 years of the equipment useful life). 2. Volume of investment mobilized for climate technology transfer during the project lifespan (Target: USD 70.0 million (both mitigation and adaptation through FIN-TeCC). 3. Increased investments in low-carbon and climate-resilient technologies promoted through FIN-TeCC (Target: more than 30% in 5 years)	1. Tons of CO2 equivalent avoided The mean value of the HDI in African countries increased v. 2005 levels (Target: 8,769,720 or 25% by 2015)	1. Total investment in low-carbon and climate-resilient technologies in participant DMC increased by more than 10% from 2012 to 2020 (Target: More than 10% increase in investment from 2012 to 2020) 2. Direct investment made in climate-resilient and mitigation technologies (Target: USD 180 million investment in climate technologies mobilized, which leads to USD 480 million of leveraged cofinancing)	1. Investments in environmentally sound technologies (EST) mobilized (Target: USD 50 million). 2. Direct greenhouse gas (GHG) emissions reductions (Target: 1.7 million tons of CO2 equivalent avoided).
Cofinancing	Raised: USD 198,300,000	Raised: USD 89,000,000	Anticipated: USD 74,732,000	Raised: USD 226,697,727

As regards the design, there are more similarities than differences in relation to the technology transfer approaches promoted by the projects, especially for IDB, AfDB, and ADB. As regards implementation, the only case where an EA was involved is the IDB project - the other three projects were directly executed by the multilateral banks with support from different UNEP partners.

Both ADB and AfDB explored opportunities to impact the mobilization of public budgets and, except for the AfDB project, all the projects evidence the expectation that the investments made will generate cofinancing resources and lead to the materialization of new credit transactions for the multilateral banks. This intention is much clearer in the design of the EBRD project, which also explains the greater success in raising cofinancing resources and placing credit facilities.

The EBRD project marked a significant difference in identifying the private sector as the main beneficiary of its intervention, and focusing its attention exclusively on countries classified as “transition”. Unlike in the other three projects, the design did not contemplate activities or resources aimed at strengthening the capacities of public institutions, and limited its focus to the generation of credit transactions with the private sector. In addition, in limiting the project scope to a group of more similar countries, it was easier to handle scale asymmetries, which suggests a more cost-effective implementation compared to the other projects - which covered larger and more complex geographical areas.

Only the EBRD and the ADB projects propose specific components for the creation and strengthening of regional technology transfer centers. This marks, from the point of view of the design, a difference in the approach to the sustainability of investments. In fact, while the EBRD project built institutionalism exclusively for technology transfer with a long-term view, in the IDB and AfDB interventions it is not clear who will be tasked with monitoring and ensuring the sustainability of the investments made.

Unfortunately, contrary to the expectations reflected in the ProDoc, the interviews confirm that the contact and coordination between the four projects was scarce, which is also reflected in the availability of information to do this analysis.

5 CONCLUSIONS, RECOMMENDATIONS, AND LESSONS LEARNED

5.1 Conclusions

The Project has great global relevance because it bears testimony to the value of multilateral banks in the implementation of the Technology Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC). It is a highly ambitious and complex initiative, without precedent in the region, but the design underestimated the inherent complexity of simultaneously addressing multiple focal subjects with different Executing Agencies.

The geographic scope posed challenges in terms of ownership, validation, and participation; also, reference is made to scale-related difficulties in addressing Technology Transfer (TT) issues due to the great asymmetries existing between the countries in the region. The design does not propose clear coordination lines among the interventions and focal areas, which resulted in a fragmented intervention. The lack of governance and participation spaces, like a Steering Committee (the Technical Committee never got implemented) may have also contributed to the absence of a unifying thread that could enable a more integrated intervention.

Among the positive aspects of the design, the interviewees highlight the sound process for the selection of the Executing Agencies, as well as the leeway they were given to select the themes and develop intervention strategies that are appropriate to each specific case. The GEF resources enabled the development of themes, studies, and approaches which, albeit highly necessary for the region, would have otherwise been very difficult to finance.

Based on testimonials, there was relatively low capacity for adaptive management, especially in the startup phase. Although relevant changes took place in the climate negotiation processes from the design of the Project to its startup, especially since the Paris Agreement, the Project chose not to adapt to it and kept its original design. The openness to more flexible and adaptive management was greater with the last IDB team in charge of the Project.

The execution mechanisms reflect a light structure that concentrates the Project coordination and leadership in one compact coordination unit formed by two people. In

practice, the insufficient staff impacted the response capacity in terms of quality assurance, smoothness of procurement, monitoring and tracking processes and, in general, the execution timeframes. This gap was partially filled through specific support received from thematic experts from different IDB divisions, but in practice it was very difficult to mobilize their involvement.

The EAs proved to have the necessary capacity to execute nearly all of the intended outputs with a reasonable level of involvement of beneficiaries and stakeholders. However, the implementation was fragmented, with nearly no links or spaces connecting the interventions of the different Executing Agencies. For example, throughout the intervention there was only one meeting where all the EAs participated along with IDB. Another aspect that impacted the execution was the turnover of the team in charge of the Project - which changed three times -, as well as of key stakeholders, like the EAs, officials and, to a lesser extent, technical experts. The M&E workload was underestimated. The insufficient staff allocated to this task, combined with a lack of planning and tools, contributed to the significant deficiencies seen in M&E.

Overall, the Project contributes sufficient elements to get close to the state of the art of environmentally sound technologies in the region, and provides sound bases for determining actions aimed at promoting their development and transfer. The Project enabled showing there is great potential for working on these themes in the region, for example, supporting the countries in relation to the commitments they assumed under the NDCs. The results of the different studies largely point at the existence of favorable conditions for the development and transfer of environmentally sound technologies, although there are great differences between countries in terms of permits and leverage factors.

The approach of building capacities in each country and sector proved essential to ensure the continuation of processes once the Project resources are depleted. However, the sustainability perspectives for the investments are not so clear. Although the Project does not currently have an explicit exit plan or strategy that defines roles, responsibilities and institutional commitments with a view to maintaining, replicating and scaling up the investments made over time, from the Project side it has been confirmed that the possibilities for sectoral monitoring will be agreed with the GEF technical coordination at IDB at the time of the closure.

5.2 Recommendations

- It is recommended that the Project develop an exit strategy jointly with the different actors involved in its implementation in order to define clear sustainability lines and institutional commitments related to the monitoring of the investments made.
- The high interest generated and the considerable mobilization capacity achieved by the Project suggest there is great regional appetite for new technology transfer initiatives. Considering the success of the model followed by the ERDB, the IDB may want to explore jointly with GEF the consolidation of other financing mechanisms, such as green bonds or trust funds, to finance the engagement of the private sector in the monitoring and scaling up of EST.
- The investments made by the Project can be harnessed in the formulation of new projects, or in the adjustment or strengthening of projects already at the stage of formulation for submission to GEF, the Green Climate Fund, or other donors.
- It is recommended mapping the IAs and projects at formulation stage to which replication and scaling up opportunities can be presented based on the studies, cases, and roadmaps developed by the Project. In line with this, it is recommended that the Project actively seek spaces to socialize its results with other IAs.
- It is recommended that the Project seek a strategic impact within the IDB Group, including the private sector windows IDB Invest and IDB Lab, in order to disseminate and showcase the importance of the different studies, cases, and opportunities developed.
- Considering that the Project mainly focused on public institutions, with a view to mobilizing multilateral banks and especially the private sector, it is recommended developing an investment portfolio with a business approach, derived from studies, cases, and opportunities developed by the Project.
- The implementation of pilot projects is highly recommended as a strategy to reduce the uncertainty inherent to the use of new technologies, since their implementation enables not only to test technologies, but to reach out potential local stakeholders. In addition, their implementation enables measuring and assessing their impact, as well as making the necessary adjustments before deploying them at a greater scale.
- It is still necessary to keep working on the access to the information and technical inputs generated by the Project, which was limited by the difficulty in publishing them within the

framework of the IDB. It is recommended increasing and facilitating the public dissemination of the information generated by the Project so that it reaches businessmen, students, and decision-makers.

- In Dominican Republic, an agroforestry monitoring system was left in place, but it still requires legal support.
- The EAs suggest that future projects including technology transfer should incorporate an analysis of the value added chains that develop in connection with the technological applications. This will provide a more complete vision of the contribution of the EST to the four dimensions of sustainability, as well as a sounder basis to promote the creation of added value circuits that contribute to the socialization of these technologies and the economic development of the country.

5.3 Lessons Learned

5.3.1 Operational Performance

- It is key to involve the EAs as early as possible in the design of projects, since their presence in the territory and specific knowledge of the themes addressed enable a more efficient intervention. When this is not possible, during the inception period there should be as much flexibility and openness as necessary to fine tune, adjust, or rework the intervention strategy, indicators, etc. This is also necessary considering the time that typically separates the design from the implementation phase. In this Project, for example, due to a lack of adaptive management the design was not adapted to the conditions and opportunities derived from the Paris Agreement. In this regard, it should be noted that a change or adjustment to the design of a project not always means a fail; it should be rather viewed as a necessary adaptation to the changing needs and context.
- The implementation through EAs is considered a critical element for success, apart from offering a cost-effective management experience. The Project also offers a valuable lesson in terms of the possibilities offered by the synergies created between multilateral banks and the actors participating in the uptake of new technologies in the region. However, the staff allocated to the monitoring of the EAs was insufficient, combined with the problems seen in the induction and support systems of IDB, which was sometimes a barrier to the development of new forms, protocols, and tools necessary to manage projects with GEF.

- The absence of a unifying thread that could integrate the interventions, combined with the absence of governance and coordination spaces, contributed to an isolated and fragmented intervention. The lesson learned from this at the design level is the need for projects to secure governance through a steering committee. In addition, at the implementation level, the operation of spaces established for participation, like a technical committee, should be mandatory, rather than optional.

5.3.2 Development Performance

- In general, each EA worked side by side with the national institutions from different governments in the region. Working with such a varied group of countries showed that it is necessary to engage them in a differentiated manner. The Project enabled identifying different approach mechanisms aimed at ensuring the countries' ownership and use of results.
- The methodology used by WRI to select the activities to be implemented in each country is considered valid and appropriate. Thanks to the mechanism used, the governments assumed a sense of ownership in relation to the continuation of the proposed actions. The model involved identifying the requirements or interests of governments in the region and supporting them with a review of their respective Development Plans, NDCs, transport plans (local and national of each country), to prioritize a set of needs. As a result of this, an appropriate selection of the works to be done was possible.
- The execution of the Project through CATIE showed that for a Project with little time and resources, it is more efficient to support actions that are already in progress and require strengthening, than implementing completely new actions. The Project's innovation approach was not limited to implementing something completely new, as it also transferred technologies that had already been tested in other places.
- Projects that foster technology transfer face challenges derived from high levels of uncertainty, so the implementation and design often rely on limited or inexistent information. In these cases, the process is possibly as important as the result itself, because innovation entails a learning process. In this regard, the Project evidences the need to have a flexible and adaptive approach to be able to take advantage of technical cooperation concessional resources with a high appetite for risk.

- The Project chose to strengthen and work with the existing cooperation networks, instead of proposing the creation of new ones, which demands committing to mobilize resources in the medium and long term for them to stay alive. The Project creates additional value through the creation of multiple platforms that convene a large number of key actors with a view to creating coalitions and sharing knowledge.
- Possibly, one of the most valuable lessons is that there is capacity to develop and transfer technology in the region. This type of projects have the role of building capacities to avoid a potential “full loss of competitive advantage for LAC”. Building capacities in the region will prevent the future outflow of resources allocated to this type of projects (due to the hiring of consulting and advisory services from foreign organizations or institutes), and will enable investing those resources in concrete actions that will have a greater impact on the field.

6 ANNEXES TO THE EVALUATION REPORT

6.1 Annex 1: Base documents for review

Document title
Project Document (ProDoc).
Guidelines on the GEF Project and Program Cycle Policy
IDB Document of Technical Cooperation RG-T2384
Agreements with the Project partners
Current Indicators Matrix
Mid-Term Evaluation
GEF Investment Grant Agreements
Project Implementation Reports
Quarterly and/or four-monthly progress reports.
Partial / final reports of concluded and ongoing consultancies
Annual progress reports
Financial reports, including cofinancing data and budgets.
Audit reports
Annual Work Plans (AWP)
GEF Tracking Tools
Communication material about the Project
Project material of interest and relevant to the evaluation
Project Operation Manual

6.2 Annex 2: List of interviewees

Climate Technology Transfer Mechanisms and Networks in Latin America and the Caribbean - Key contacts (and bios)					
	Contact	Institution	Component	Position	e-mail
1	Claudio Alatorre Frenk	IDB/CCS		Project Head	CALATORRE@iadb.org
2	Karla Espinoza	IDB/CCS External Consultant		Consultant in charge of coordinating the Project closure until 2021	KESP@IADB.ORG
3	Claudia Hernández	Former IDB external consultant		Project coordinator until Nov. 2019	claushernandez@gmail.com
4	Laura Mondragon Silvani	Former IDB external consultant		Assisted Francisco Arango (initial Project Leader) when the Project was designed.	lau0421@gmail.com
5	Claudia Octaviano	INECC	1 Policy & Capacity	General Coordinator CC Mitigation / Representative of MEX before the Technology Mechanism	claudia.octaviano@inecc.gob.mx

6	Ana Ma. Contreras Vigil	External consultant	1 Policy & Capacity	Project Coordinator, former INECC	hanna.ambiental@gmail.com
7	Hilda Dubrovsky	Fundacion Bariloche	2 Renewable Energy & Energy Efficiency	Energy Project Coordinator	hdubrovsky@fundacionbariloche.org.ar
8	Adrián Moreno	External consultant	2 Renewable Energy & Energy Efficiency	Energy Efficiency Coordinator	amoreno@fundacionbariloche.org.ar
9	Wilmar Suarez	External consultant	2 Renewable Energy & Energy Efficiency	Energy Efficiency Coordinator (prior to Adrian)	Wilmar.suarez.s@gmail.com
10	Renato Oña Polit	External consultant	2 Renewable Energy & Energy Efficiency	Renewable Energy Coordinator	rpolit@fundacionbariloche.org.ar
11	Sebastian Castellanos	WRI	3 Transport	Transport Project Coordinator	sebastian.castellanos@wri.org
12	Miguel Cifuentes Jara	CATIE	4 Forest Monitoring	CATIE - Forests	miguel.cifuentes@catie.ac.cr
13	Mario Chacon	External consultant	4 Forest Monitoring	Project Coordinator, former CATIE	mchacon@conservation.org
14	Eugenia Saini	FONTAGRO	5 Agriculture	Agriculture Project Coordinator	esaini@fontagro.org

15	Alexandra Ortega Rada	GEF IDB			<u>ALEXANDRAO@iadb.org</u>
16	CAF - contact	MDB - Africa			
17	CAF - contact	MDB - Europe			
18	Matteo Grazi	IDB - CTI			<u>MATTEOG@iadb.org</u>

6.3 Annex 3: Evaluation questions

The questions will serve as a basis for the evaluation team to understand the context of the project and keep the focus on the most important issues that need to be evaluated and checked. Questions will be asked to the different interviewees, depending on the actor. Efforts will be made to avoid questions with binary answers.

- Are the results framework indicators SMART?
- Is the gender perspective contemplated to be included in the planning of outcomes and activities?
- To what extent has the general objective of the GEF Project been achieved?
- To what extent do the Project Components, and the other Project characteristics (choice of partners, structure of the coordinating unit, implementation mechanisms, scope, budget, administrative processes, use of resources) enable the achievement of objectives?
- Based on the design of the Project, was the intervention logic appropriate?
- Are the Project outcomes clear and logical, and do they address clearly identified needs?
- Does the intervention respond to the development priorities of the country or influence area?
- To what extent do the Project Components, and the other Project characteristics (choice of partners, structure of the coordinating unit, implementation mechanisms, scope, budget, administrative processes, use of resources) enable the achievement of objectives?
- How much progress has been made towards the achievement of the expected Project outputs and outcomes?
- Were the approach and strategies used appropriate for the achievement or advancement of the expected outcomes?
- Are there strategies and experiences developed by the Project that have replication potential?
- With a view to enriching the Project and harnessing existing opportunities, were other projects at the national, regional, and global levels and their lessons learned taken into account?

- Is there a structure to ensure a proper engagement of all the partners?
- Are the responsibilities well designed and distributed among the partners, and have they been fulfilled? Are such arrangements relevant?
- Have the external factors been properly considered? How flexible were the different management levels to adapt to change?
- Is there a monitoring plan with indicators and baselines to measure progress and the eventual impact of the Project?
- How did the in-kind and cash cofinancing materialize in practice?
- Describe how the selection, hiring, allocation of experts, consultants and counterpart staff is performed.
- Are beneficiaries committed to continuing working on the Project objectives once the Project has ended?
- What has been the degree of engagement and ownership of objectives and outcomes on the part of the beneficiary population at the different Project stages?
- What has the support and engagement of the involved institutions been like? Has there been institutional strengthening?
- Has the progress made so far led, or will it lead, to beneficial effects for development (such as income generation, gender equality, women empowerment, improved governance, legal security for key actors, among others) which may be included in the results framework and be monitored on an annual basis?
- Are there financial, institutional, socioeconomic, or environmental risks that may jeopardize the sustainability of project outcomes in the long term?
- To what extent has a sustainability strategy been implemented or developed?
- Is there evidence that the Project partners will secure the continuation of activities during the remaining lifespan of the Project, beyond its closure?
- Are beneficiaries committed to continue working on the Project objectives once the Project has ended?
- List what you consider to be lessons learned and what must/can be corrected in the future.
- What recommendations would you make to improve the execution, outcomes, or impacts of the Project?