1. Project Data

Summary project data			
GEF project ID		5335	
GEF Agency project ID		100181 and 100179 (PPG)	
GEF Replenishment Phase		GEF-5	
Lead GEF Agency (include all for joint projects)		UNIDO	
Project name		Promoting The Development of Biogas Energy amongst Select Small- and Medium-Sized Agro-Industries	
Country/Countries		Chile	
Region		Latin America & Caribbean	
Focal area		Climate Change	
Operational Program or Strategic Priorities/Objectives		CCM 3	
Stand alone or under a programmatic framework		Standalone	
If applicable, parent program name and GEF ID		N/A	
Executing agencies involved		Renewable Energy Centre – Centro de Energìas Renovables (CER) at time of MSP approval, Ministry of Energy after government changes; Institute for Agriculture Research (INIA)[1]	
NGOs/CBOs involvement			
Private sector involvement (including micro, small and medium enterprises)[2]		Small and medium-sized dairy farms: beneficiaries Schwager (private energy company): beneficiary	
CEO Endorsement (FSP) /Approval (MSP) date		9/4/2014	
Effectiveness date / project start date		11/6/2014	
Expected date of project completion (at start)		11/6/2017	
Actual date of project completion		7/31/2019	
Project Financing			
		At Endorsement (US $M)	**At Completion (US $M)**
Project Preparation Grant	GEF funding	0.05[3]	0.05
	Co-financing	0.05[4]	0.05
GEF Project Grant		1.715	1.715
Co-financing	IA own	0.100	0.106
	Government	4.970	1.193
	Other multi- /bi-laterals		
	Private sector	11.375	12.891
	NGOs/CBOs		
	Other		
Total GEF funding		1.720	1.720
Total Co-financing		16.445	14.190

[1] INIA was incorporated as executing partner upon request of the government counterpart for conducting the capacity development component (TE, p. 17).
[2] Defined as all micro, small, and medium-scale profit-oriented entities, including individuals and informal entities, that earn income through the sale of goods and services rather than a salary. (GEF IEO 2022)
[3] Excluding a project agency fee of USD 162,939 (TE, p. 7).
[4] Terms of Reference of MTR, p. 31.

Total project funding (GEF grant(s) + co-financing)	18.210[5]	15.910
Terminal evaluation validation information		
TE completion date	12/4/2019	
Author of TE	Iosu Arizkorreta	
TER completion date	11/21/2022	
TER prepared by	Emanuele Bigagli	
TER peer review by (if GEF IEO review)	Jeneen R. Garcia	

Access the form to summarize key project features here: https://www.research.net/r/APR2023.

[5] The TE (p. 7) indicates a total project cost at CEO endorsement of USD 18,159,651, excluding PPG and an agency fee of USD 162,939 (Final PIR 2020, p. 1).

2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF IEO Review
Project Outcomes	MS	MS		MU
Sustainability of Outcomes		MU		MU
M&E Design		S[6]		S
M&E Implementation		S		S
Quality of Implementation		S		S
Quality of Execution		S		MS
Quality of the Terminal Evaluation Report				HS

3. Project Objectives and theory of change

3.1 Global Environmental Objectives of the project:

The overall objective of this project is to reduce greenhouse gas (GHG) emissions by promoting investment and market development of biogas energy technologies in selected agricultural sectors in Chile.

3.2 Development Objectives of the project:

No specific development objectives were formulated as different from the global environmental objective.

3.3 Were there any **changes** in the Global Environmental Objectives, Development Objectives, or project activities during implementation? What are the reasons given for the change(s)?

New activities were included to adapt to changing circumstances during project implementation (TE, p. 19): the monitoring of existing biogas plants to better understand their efficiency in the Chilean context, the development of an Action Plan upon finalization of the project for partners to take action, and the market study of the digestate (in order to see whether selling the digestate would increase the feasibility of the biogas plants). Moreover, due to the negative results of the pre-feasibility studies, the project expanded the study to other geographical areas and bigger dairy farms.

3.4 Briefly summarize project's theory of change – describe the inputs and causal relationships through which the project will achieve its long-term impacts, key links, and key assumptions.

The main elements of the project's theory of change are as follows:

Problem: Chile´s energy sector is strongly dependent on imported fossil fuels, challenging sustained economic growth and causing high average energy costs undermining competitiveness of the national economy. Chile's GHG increased by 114% in 2016 compared to 1990, mainly driven by energy, agriculture, and waste sectors. Biogas plants have potential to tackle this problem, and have been promoted by recent legislation; however, their penetration rate is low and there are problems in the operation of the plants installed in the targeted agro-industries.

[6] The TE provides an overall rating for M&E, covering both M&E design and M&E implementation.

Barriers: Lack of regulation on the quality of digestate; dependence of commercial biogas energy systems on costly foreign technology; lack of skilled human resources; lack of knowledge, investment capital, and attitude of small and medium-sized agro-industries; flaws in value chain of biogas technology; low adaptability of farmers; limited insight in the commercial potential for biogas energy technology in the agro-industrial sector; financial barriers in place at several points in the value chain.

Objective: reduce GHG emissions by promoting investment and market development of biogas energy technologies in selected agro-industries in Chile.

Strategy: Produce valuable information and strengthen the regulatory framework for biogas; create technical capacities in those in charge of operating and developing biogas projects; and develop a portfolio of potential projects that allows for the mitigation of greenhouse gases and to continue producing specialized knowledge in the field.

Outcomes: (i) Policies and information targeting the development of biogas-based electricity and heat generation in agro-industries have been strengthened. (ii) Adequate design, installation and operation practices for biogas energy plants in the agro-industrial sector have been adopted due to improved capacities of developers, suppliers and technicians. (iii) Biogas energy has been adopted by select agro-industries.

Impacts: (i) decreased consumption of fossil fuel by agro-industries and reduction of GHG emissions; (ii) increased productivity and competitiveness of agro-industries; (iii) improved national energy security.

4. GEF IEO assessment of Outcomes and Sustainability

Please refer to the GEF Terminal Evaluation Review Guidelines for detail on the criteria for ratings.

The outcome ratings (relevance, effectiveness, efficiency, and overall outcome rating) are on a six-point scale: Highly Satisfactory to Highly Unsatisfactory. The sustainability rating is on a four-point scale: Likely to Unlikely.

Please justify the ratings in the space below each box.

4.1 **Relevance and Coherence**	MS

The TE assessed relevance as Moderately Satisfactory, and this evaluation concurs.

The project was adequately conceived to answer to the needs expressed by the Ministry of Energy (TE, p. 18). It focused on relevant and appropriate sectors and areas, included relevant activities, and was fully aligned with government policies (TE, p. 18), although there were some deficiencies in design. These were related to: a lack of a development capacity plan and of communication strategies (TE, p. 11); lack of clarity on the investments needed and on the cost of biogas plants operation and maintenance; lack of alternative strategies in case the assumption of feasibility of biogas plants did not hold true, and in case the co-financing would not be made available for the feasible projects (TE, p. 1); and a lack of an assessment of the interest of industries and sector associations in implementing biogas plants in dairy agro-industries (TE, p. 19).

4.2 **Effectiveness**	MU

The TE assessed effectiveness as Moderately Satisfactory, and this evaluation rates it as Moderately Unsatisfactory. The outcomes were commensurate with the targets set ex ante for Components 1, while they were only partly for Component 2, and they were not for Component 3, with the result that the project did not deliver the expected level of contributions to achieve the long-term objectives and to global environmental benefits.

Although the TE (p. 10) notes that most of the planned outputs were delivered and were of good quality, these were delayed; further details are listed below for each Component:

- Component 1 – The planned regulations and standards were approved, and a substantial number of cases have been assessed to determine the feasibility of biogas plants (TE, p. 10).
- Component 2 – the outcomes were lower than expected (TE, p. 13). Although the planned training programmes and workshops were conducted, involving more women than expected, the overall target number of professionals was not met and not all participants completed the training courses (TE, p. 11). As such, the project has had no effect in developing a critical mass of skilled operators that can solve the operation and maintenance problems facing several biogas plants (TE, p. 27).
- Component 3 –A total of 53 pre-feasibility studies were conducted; however, the negative results of most of them led to a number of feasibility studies that was lower than planned (9 instead of the 20 envisaged). Only 4 projects were deemed as feasible, and no biogas projects were further implemented (against the 20 planned). This adds to the lack of notable progress in the development of an enabling environment for the financing of biogas projects (output 3.4), mainly because of delays in the financial component of Nationally Appropriate Mitigation Actions (NAMA), expected to start in 2020 (TE, p. 13). As a result, the outcomes were not achieved, and it will be unlikely to achieve them in the future.

4.3 **Efficiency**	MS

The TE assessed efficiency as Moderately Satisfactory, and this evaluation concurs. The project was cost-effective in delivering results; the budget was almost fully executed and was adapted to changing activities, although the activities were completed with some delay.

Most of the planned activities were implemented within the planned costs (TE, p. 27), and those activities that were not implemented did not have a significant effect on overall project implementation (TE, p. 19). Almost all the budget (99.58%) was executed. The project was planned to be implemented in 36 months; however, delays in Component 2 (related to necessary rearrangement of roles for training activities and finalization of pre-feasibility studies) and Component 3 (late finalization of feasibility studies) stretched implementation to over 52 months (TE, p. 19). The budget was appropriately adapted to the new activities planned in the course of project implementation (TE, p. 19).

4.4 **Outcome**	MU

Summarize key outcomes related to environment, human well-being, and enabling conditions (Policy, Legal & Institutional Development; Individual & Institutional Capacity-Building; Knowledge Exchange & Learning; Multistakeholder Interactions), as applicable. Include any unintended outcomes (not originally targeted by the project), whether positive or negative, affecting either ecological or social aspects.

Where applicable, note how both intended and unintended outcomes have positively and/or negatively affected marginalized populations (e.g., women, indigenous groups, youth, persons with disabilities), and where some stakeholder groups have benefited more/ less than others.

The TE assesses "Impact" as Moderately Satisfactory. This evaluation rates it as Moderately unsatisfactory. Although the project was relevant and was implemented efficiently, several key outputs and impacts were not achieved (especially under Component 3), and activities were delayed.

The key outcomes and impacts are summarized as follows:

Environmental. No contribution from the project to the reduction of GHG emissions in the targeted agro-industries, due to the conclusion that the original assumption of viability of biogas development in this sector did not hold true after the feasibility studies. Four biogas projects are being implemented by a Chilean private company, Schwager, in another sector that was not targeted by the project, and which are expected to reduce 850,000 tCO_2eq in the next 20 years. Also, the negative environmental impacts of current practices in cow manure management could have been avoided by the installation of biogas plants.

Socioeconomic. No impacts on human well-being were reported by the end of the project.

Enabling conditions. The main impact of the project has been to generate the needed knowledge, providing real data on the functioning of existing biogas plants and on the viability of their development in dairy agro-industries, including existing barriers. However, all the knowledge generated is not yet widely known and adapted to the users' needs (TE, p. 27). The regulatory framework was improved to favor the installation of biogas plants, although not covering cow manure.

Unintended impacts. The TE does not indicate any unintended impacts.

4.5 **Sustainability**	MU

Note any progress made to sustain or expand environmental benefits beyond project closure, using stakeholder (rather than project) resources, e.g. through replication, mainstreaming or scaling-up of GEF-supported initiatives. Examples would be farmers adopting practices using own funds, follow-on replication projects, development of plans for scaling, inclusion in local or national legislation, and allocation of government budgets or private sector investments for institutional adoption.

The assesses sustainability as Moderately Unlikely, and this evaluation concurs, due to the significant financial, sociopolitical, and institutional risks that will likely hamper the continuation of project benefits in the future.

Financial. The TE considers unlikely the implementation of the four projects identified as feasible, due to decrease of interest of farmers, high investment needed and lack of substantial co-financing, lack of consideration of operational costs by owners (TE, p. 22). Only a few banks demonstrated interest in financing such projects (TE, p. 23). Also, it is unlikely that public funds will be available specifically for co-financing biogas projects, since few are economically viable and the Government is in general reluctant to provide subsidies.

Sociopolitical. The main risk to biogas plants development comes from the consideration that technology is only an additional infrastructure that needs to be economically viable, and not as part of the whole business with its positive implications. As the project determined the non-feasibility of the majority of biogas plants, most stakeholders have rejected this technology without considering its value as a solution for the management of cow manure. Also, the TE (p. 18) underlined the lack of involvement of the industry since the design phase, as hampering the sustainability of project results.

Institutional framework and governance. The project prepared an Action Plan with actions to be taken in view of project conclusions; however, it will hardly be implemented as the coordination mechanisms established by the project were not continued after project end. Future biogas plants will be designed and built according to the new regulation and standards approved thanks to project implementation (TE, p. 22). However, it is unlikely that any of the trainings carried out by different institutions will continue in the future. In addition, the lack of regulation with respect to cow manure management will hamper the consideration of the environmental benefits of biogas by most of farmers (TE, p. 23).

Environmental. The TE does not identify environmental risks to the sustainability of project outcomes.

5. Processes and factors affecting attainment of project outcomes

Before describing the factors, you may choose to summarize reported outcomes and sustainability here: https://www.research.net/r/APR2023.

5.1 Co-financing. To what extent was the reported co-financing essential to the achievement of GEF objectives? If there was a difference in the level of expected co-financing and actual co-financing, what were the reasons for it? Did the extent of materialization of co-financing affect project's outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The co-financing effectively mobilized was lower than expected, mainly because the planned tender for the biogas projects was not launched (TE, p. 20). As noted above in the Sustainability section, four biogas plants are under development through the co-financing and will contribute to this objective, although these plants are being installed in other sectors than the one targeted TE, p. 1).

5.2 Project extensions and/or delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project's outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The MTR (p. 29) recommended a no-cost project extension, and project implementation suffered a delay of 16 months, mainly due to rearrangements of roles for training activities and delayed finalization of pre-feasibility studies (Component 2) and late finalization of feasibility studies (Component 3). As a consequence, the results of the feasibility studies were available only by the end of the project, without sufficient time to consolidate the information and promote investments in the few feasible projects identified (TE, p. 19).

5.3 Stakeholder ownership. Assess the extent to which stakeholder ownership has affected project outcomes and sustainability. Describe the ways in which it affected outcomes and sustainability, highlighting the causal links.

The Consorcio Lechero, responsible for the regional coordination of the project, was instrumental to reach out to industries and dairy associations and disseminate information (TE, p. 18). These stakeholders, however, were not further involved, and this may have impacted on the limited capacity of stakeholders to consider the environmental benefits of biogas plants, and not just the economic ones (TE, p. 27).

Moreover, after the publication of the (overall negative) results of the feasibility studies, the interest of the Ministry of Energy decreased (TE, p. 18). Also, the interest of farmers in biogas plants decreased, which is evidenced by the number of participants in the trainings during implementation (TE, p. 18). Overall, partners lacked commitment to continue addressing the problems identified during project implementation (TE, p. 25), hampering the sustainability of project outcomes, although some stakeholders showed interest and commitment in taking action in certain aspects defined in the Action Plan produced at the end of the project.

5.4 Other factors: In case the terminal evaluation discusses other key factors that affected project outcomes, discuss those factors and outline how they affected outcomes, whether positively or negatively. Include factors that may have led to unintended outcomes.

The COVID-19-related lockdown measures entailed a delay in the delivery of the print copies of the final project report (TE, p. 6).

6. Assessment of project's Monitoring and Evaluation system

Ratings are assessed on a six point scale: Highly Satisfactory to Highly Unsatisfactory.

Please justify ratings in the space below each box.

6.1 **M&E Design at entry**	S

The TE assesses overall M&E, including both design and implementation, as Satisfactory, and this evaluation concurs. The M&E system put in place was adequate to track progress and measure the logframe indicators (TE, p. 26). Valid indicators with baseline and targets were set, and adequately linked to the program of activities (TE, p. 27). The M&E design allowed the project to monitor the new, unplanned activities (TE, p. 27).

6.2 **M&E Implementation**	S

The TE assesses overall M&E, including both design and implementation, as Satisfactory, and this evaluation concurs. The indicators in the program of activities were measured and monitored during implementation, including the unplanned activities.

7. Assessment of project implementation and execution

Quality of Implementation rating is based on the assessment of the performance of GEF Agency(s). Quality of Execution rating is based on performance of the executing agency(s). In both instances, the focus is upon factors that are largely within the control of the respective implementing and executing agency(s). A six-point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess.

Please justify ratings in the space below each box.

7.1 **Quality of Project Implementation**	S

The TE assesses project implementation as Satisfactory, and this evaluation concurs. The performance of the implementing agency met the expectations, ensuring good follow-up, participation, coordination, and communication, and without any notable weaknesses.

UNIDO put in place the planned human resources in a timely way for the execution of the project, followed up closely the project implementation, and actively participated in the discussions (TE, p. 27), providing appropriate coordination (TE, p. 19) and communication among partners (including regular visits to the country and frequent contacts with the executing partners; TE, p. 25). This was essential to re-orientate the project after the negative results obtained from the pre-feasibility and feasibility studies (TE, p. 26).

7.2 **Quality of Project Execution**	MS

The TE assesses project execution as Satisfactory, and this evaluation rates it as Moderately Satisfactory. Overall, the performance of the executing agencies met the expectations in terms of commitment, communication and coordination, and resources mobilization, although with delays in the implementation of some key activities.

The executing agencies provided the needed human and material resources (TE, p. 27). The executing agency changed during implementation, from the Centro de Energías Renovables (Renewable Energy Center, CER), an agency of the Ministry of Energy that in 2014 became the Centre for Innovation and promotion of Sustainable Energy (CIFES), to the Ministry of Energy in 2016, supported by the Institute for Agricultural Research (INIA). However, continuity and coherence in project execution was ensured by the fact that the National Project Director was always the same (TE, p. 25). In particular, the Ministry of Energy has been continuously committed to implementing the project (TE, p. 19), and held continuous contacts with the project Management Unit and UNIDO; this facilitated discussions and helped taking decisions during implementation (TE, p. 26). Also, the planned GEF resources were mobilized and correctly used (TE, p. 25).

However, there were some delays in implementation due to the lack of capability of INIA to carry out the planned training activities to all target groups (i.e., operators of biogas plants, installers of biogas plants, and decision-makers), which required to rearrange this task involving other organizations. Also, the Ministry of Energy did not launch the planned public tender for financing the feasible biogas projects, because of the negative results of the (delayed) feasibility studies, which identified only few feasible

projects and were available only at the end of the project, leaving insufficient time to promote the related investments (TE, p. 19) and to launch the planned public tender (TE, p. 27).

8. Lessons and recommendations

8.1 Briefly describe the key lessons, good practices, or approaches mentioned in the terminal evaluation report, including how they could have application for other GEF projects. Lessons must be based on project experience.

The TE (p. 32) proposes the following lessons:

1. In projects that include both assessing the feasibility of a technology and its implementation, it is wise to have more detailed information on the willingness of the beneficiaries to adopt the technology and to have a flexibility in the design for proposing new activities depending on the feasibility / non-feasibility scenario resulting from the studies that will be developed. The adoption of new techniques implies behavioral changes in the target group and for ensuring the achievement of such transition it is necessary to better know the characteristics of the beneficiaries in terms of attitudes and willingness to adopt the new technologies. The economic feasibility and the existence of funds for implementing the feasible projects may not be sufficient for some beneficiaries willing to adopt new techniques, while others may implement the technologies motivated by environmental convictions. Awareness raising and education are in general necessary for promoting new technologies, but methodologies to study, select and involve the beneficiaries are equally important to pursue the intended behavioral change.
2. Assumptions are always made in the design regarding the feasibility / non-feasibility of the technology proposed. These assumptions need to be tested and assessed during implementation in order to adapt the design, if needed. For that purpose, the MTR is an essential exercise for testing the assumptions and revising eventually the design. The timing for carrying out the MTR should be carefully assessed, so that sufficient information is already produced by the project and the MTR can test the assumptions made, with a view of adapting the design, if necessary.
3. The 3-years implementation period of projects that include the development of feasibility studies and the implementation of feasible projects is unrealistic. Almost two years were necessary in this project for carrying out the pre-feasibility and feasibility studies. The sequence of activities should be carefully designed, so that the results of the feasibility studies are available with sufficient time for being able to implement these projects.
4. In projects promoting biogas plants it is necessary to involve different sectors, depending on the scope of the project, and not only the Ministry of Energy, since this technology depending on the sector and beneficiaries may have other implications. The conclusion of the present project is that biogas plants in dairy farms of 100-500 cows are in general non feasible economically in Chile and they may be rather an environmental solution rather than an energy supply one. In such cases, the focal sector of the project may shift from energy, as initially considered, to another one. This may determine the focal sector and institutional location of the project.
5. As several sectors may be involved in biogas plants development, inter-institutional dialogue is necessary. Projects should therefore foresee coordination mechanisms for ensuring that representatives from the different sectors and institutions involved are present. Basing this dialogue on existing multi-

stakeholder coordination mechanisms may ensure its continuity beyond the project's implementation period, which is necessary for broadening the adoption of new technologies.

6. Skills development of new technologies are essential for ensuring their implementation and maintenance. Sound capacity development strategies need to be developed in order to focus the skills development to the right audience and carried out by training institutions that would adopt the curriculum developed and that could continue once the project ends.

8.2 Briefly describe the recommendations given in the terminal evaluation.

The TE gives the following recommendations:

- Synthesize the relevant conclusions of the studies produced, tailor the information according to the users' need and disseminate succinct information to each of the target groups.
- Coordinate actions at central and regional level between the Ministries of Energy and the Ministries of Agriculture and Environment to address the environmental problems in the targeted dairy agro-industries that can be solved with biogas plants.
- To UNIDO (TE, p. 31): include provisions in the design of future projects to: (1) assess the different attitudes of the beneficiaries towards the technologies promoted by the Project in order to identify potential leaders and followers. This would facilitate the sequence in the selection of beneficiaries and broad adoption of the technologies, and can also determine whether a gender strategy is needed. (2) develop and implement a communication strategy aimed at interacting continuously with the stakeholders of the project. (3) implement capacity development activities aimed at developing technical skills, rely on training institutions that would adopt and continue with the training courses developed. (4) Base the coordination mechanisms of the project on existing multi-stakeholder mechanisms in order to ensure that the dialogue established will continue once the project will finalize.

9. Quality of the Terminal Evaluation Report

Before rating the quality of the terminal evaluation, click here to summarize your observations on the sub-criteria: https://www.research.net/r/APR2023.

A six-point rating scale is used for each sub-criteria and overall rating of the terminal evaluation report (Highly Satisfactory to Highly Unsatisfactory)

Criteria/indicators of terminal evaluation quality	GEF IEO COMMENTS	Rating
1. Timeliness: terminal evaluation report was carried out and submitted on time?	The TE was conducted less than 6 months after project completion, but was submitted more than 12 months after project completion	S
2. General information: Provides general information on the project and evaluation as per the requirement?	The TE includes general information on the project (project ID, authors of TE, executing agencies, key project milestones, and GEF environmental objectives)	HS
3. Stakeholder involvement: the report was prepared in consultation with – and with feedback from - key stakeholders?	The TE identifies key stakeholders, but neither their feedback, nor that of the OFP were sought on the draft report	MU
4. Theory of change: provides solid account of the project's theory of change?	The TE presents the theory of change, discusses causal links to achieve intended impact, and the key assumptions, and discusses whether these remain valid	HS
5. Methodology: Provides an informative and transparent account of the methodology?	The TE discusses the information sources for evaluation, provides information on interviewees, on project sites and activities, on tools and methods used for evaluation, and identifies limitations of evaluation	HS
6. Outcome: Provides a clear and candid account of the achievement of project outcomes?	The TE assesses relevance to country priorities (but not to GEF priorities), and relevance of project design; it discusses factors that affect outcome achievement at good depth, and reports on timeliness of activities; it also assesses efficiency in using project resources	S

7. Sustainability: Presents realistic assessment of sustainability?	The TE identifies the risks to project sustainability, their likelihood, the likely effects, and overall likelihood of sustainability	HS
8. M&E: Presents sound assessment of the quality of the M&E system?	The TE analyzes quality of M&E design and implementation, and discusses the use of information from M&E for project management	HS
9. Finance: Reports on utilization of GEF funding and materialization of co-financing?	The TE reports on the use of GEF resources, provides data on quantity and type of co-financing materialized, discusses reasons for excess/materialization, and contributions to project results	HS
10. Implementation: Presents a candid account of project implementation and Agency performance?	the TE provides account of GEF agency and executing agencies' performance, discusses factors that affected implementation/execution and how challenges were addressed	HS
11. Safeguards: Provides information on application of environmental and social safeguards, and conduct and use of gender analysis?	The TE reports on social and environmental safeguards; it includes reporting on gender analysis and implementation of actions	HS
12. Lessons and recommendations are supported by the project experience and are relevant to future programming?	The TE presents lessons based on project experience and discusses their applicability; it includes recommendations that clearly specify what needs to be done and specifies action taker	HS
13. Ratings: Ratings are well-substantiated by evidence, realistic and convincing?	Ratings are supported with sufficient and credible evidence	HS
14. Report presentation: The report was well-written, logically organized, and consistent?	The TE is written in English; it is easy to read, well-organized, consistent, and makes good use of tables	HS
Overall quality of the report		HS

10. Note any additional sources of information used in the preparation of the terminal evaluation report (excluding PIRs, TEs, and PADs).

ANNEX 1. GEF IEO THEORY OF CHANGE FRAMEWORK

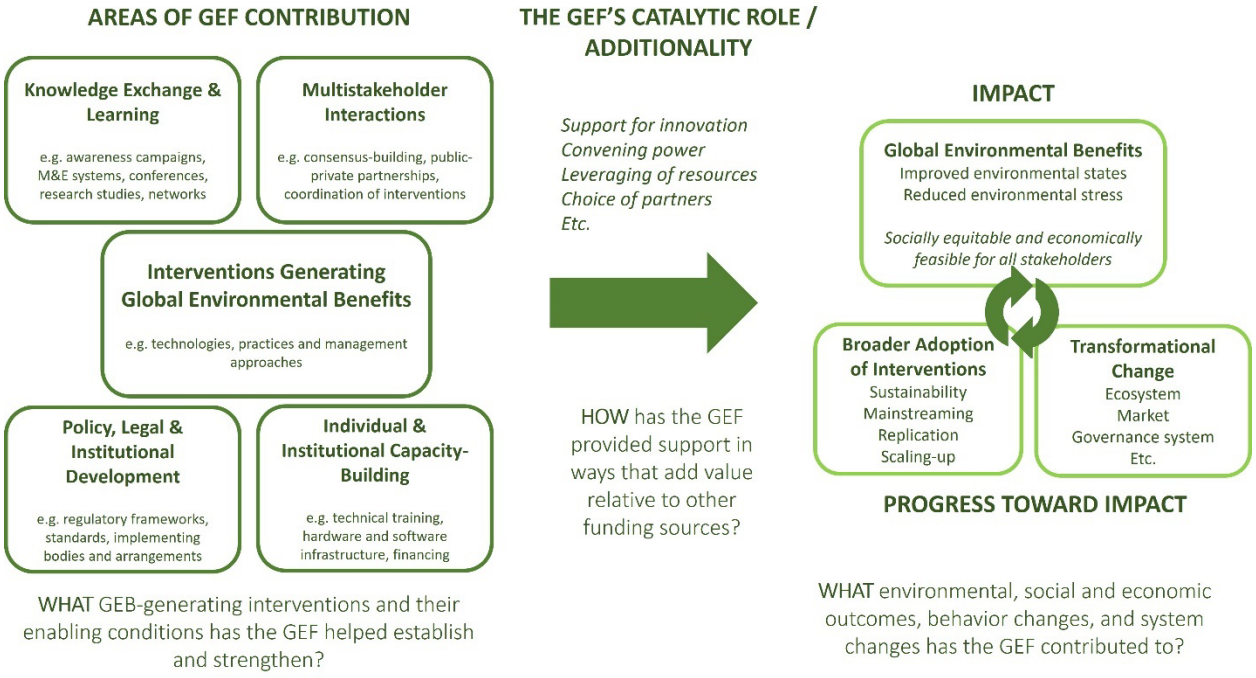

Figure 1. The GEF IEO's updated Theory of Change Framework on how the GEF achieves impact

The general framework for the GEF's theory of change (figure 1) draws on the large amount of evaluative evidence on outcomes and impact gathered over the years by the GEF Independent Evaluation Office. The framework diagram has been updated to reflect the IEO's learning since OPS5 (GEF IEO 2014, p. 47-50) about how the GEF achieves impact, as well as the evolution of the GEF's programming toward more integrated systems-focused and scaled-up initiatives.

The framework outlines the three main areas that the IEO assesses in its evaluations: a) the GEF's contributions in establishing and strengthening both the interventions that directly generate global environmental benefits, and the enabling conditions that allow these interventions to be implemented and adopted by stakeholders, b) the GEF's catalytic role or additionality in the way that the GEF provides support within the context of other funding sources and partners, and c) the environmental, social and economic outcomes that the GEF has contributed to, and the behavior and system changes that generate these outcomes during and beyond the period of GEF support.

The circular arrow between impact and progress toward impact, as before, indicates how bringing about positive environmental change is an iterative process that involves behavior change (in the form of a broader group of stakeholders adopting interventions) and/or systems change (which is a key characteristic of transformational change). These three areas of change can take place in any sequence or simultaneously in a positively reinforcing cycle, and are therefore assessed by the GEF IEO as indicators of impact.

Assessing the GEF's progress toward achieving impact allows the IEO to determine the extent to which GEF support contributes to a trajectory of large-scale, systemic change, especially in areas where changes in the environment can only be measured over longer time horizons. The updated diagram in particular expands the assessment of progress towards impact to include transformational change, which specifically takes place at the system level, and not necessarily over a long time period.

The updated diagram also more explicitly identifies the link between the GEF's mandate of generating global environmental benefits, and the GEF's safeguards to ensure that positive environmental outcomes also enhance or at the very least do not take away from the social and economic well-being of the people who depend on the environment. Thus the IEO assesses impact not only in terms of environmental outcomes, but also in terms of the synergies and trade-offs with the social and economic contexts in which these outcomes are achieved.

ANNEX 2. DEFINITION OF TERMS

Intervention	Any programmatic approach, full-sized project, medium-sized project, or enabling activity financed from any GEF-managed trust fund, as well as regional and national outreach activities. In the context of post-completion evaluation, an intervention may consist of a single project, or multiple projects (i.e. phased or parallel) with explicitly linked objectives contributing to the same specific impacts within the same specific geographical area and sector. https://www.gefieo.org/evaluations/gef-evaluation-policy-2019
Activity (of an intervention)	An action undertaken over the duration of an intervention that contributes to the achievement of the intervention's objectives, i.e. an intervention is implemented through a set of activities. E.g. training, (support to) policy development, (implementation of) management approach.
Outcome	An intended or achieved short- or medium-term effect of a project or program's outputs. https://www.gefieo.org/evaluations/gef-evaluation-policy-2019
Impact	The positive and negative, primary and secondary long-term effects produced by a project or program, directly or indirectly, intended or unintended. https://www.gefieo.org/evaluations/gef-evaluation-policy-2019
Environmental outcomes	Changes in environmental indicators that could take the following forms: • Stress reduction: reduction or prevention of threats to the environment, especially those caused by human behavior (local communities, societies, economies) • Environmental state: biological, physical changes in the state of the environment http://www.gefieo.org/sites/default/files/ieo/evaluations/ops5-final-report-eng.pdf
Social and economic outcomes	Changes in indicators affecting human well-being at the individual or higher scales, e.g. income or access to capital, food security, health, safety, education, cooperation/ conflict resolution, and equity in distribution/ access to benefits, especially among marginalized groups.
Synergies	Multiple benefits achieved in more than one focal area as a result of a *single intervention*, or benefits achieved from the interaction of outcomes from at least two separate interventions in addition to those achieved, had the interventions been done independently.

	http://www.gefieo.org/evaluations/evaluation-multiple-benefits-gef-support-through-its-multifocal-area-portfolio-map-2016
Trade-offs	A reduction in one benefit in the process of maximizing or increasing another benefit. http://www.gefieo.org/evaluations/evaluation-multiple-benefits-gef-support-through-its-multifocal-area-portfolio-map-2016
Broader adoption	The adoption of GEF-supported interventions by governments and other stakeholders beyond the original scope and funding of a GEF-supported intervention. This may take place through sustaining, replication, mainstreaming, and scaling-up of an intervention and/or its enabling conditions (see definitions below). http://www.gefieo.org/sites/default/files/ieo/evaluations/ops5-final-report-eng.pdf
Sustainability	The continuation/ likely continuation of positive effects from the intervention after it has come to an end, and its potential for scale-up and/or replication; interventions need to be environmentally as well as institutionally, financially, politically, culturally and socially sustainable.https://www.gefieo.org/evaluations/gef-evaluation-policy-2019
Replication	When a GEF intervention is reproduced at a comparable administrative or ecological scale, often in different geographical areas or regions. http://www.gefieo.org/sites/default/files/ieo/evaluations/ops5-final-report-eng.pdf
Mainstreaming	When information, lessons, or specific aspects of a GEF initiative are incorporated into a broader stakeholder initiative. This may occur not only through governments but also in development organizations and other sectors. http://www.gefieo.org/sites/default/files/ieo/evaluations/ops5-final-report-eng.pdf
Scaling-up	Increasing the magnitude of global environment benefits (GEBs), and/or expanding the geographical and sectoral areas where they are generated to cover a defined ecological, economic, or governance unit. May occur through replication, mainstreaming, and linking. http://www.gefieo.org/evaluations/evaluation-gef-support-scaling-impact-2019
Transformational change	Deep, systemic, and sustainable change with large-scale impact in an area of major environmental concern. Defined by four criteria: relevance, depth of change, scale of change, and sustainability. http://www.gefieo.org/evaluations/evaluation-gef-support-transformational-change-2017
Additionality	a) Changes in the attainment of direct project outcomes at project completion that can be attributed to GEF's interventions; these can be reflected in an acceleration of the adoption of reforms, the enhancement of outcomes, or the reduction of risks and greater viability of project interventions. b) Spill-over effects beyond project outcomes that may result from systemic reforms, capacity development, and socio-economic changes. c) Clearly articulated pathways to achieve broadening of the impact beyond project completion that can be associated with GEF interventions. https://www.gefieo.org/sites/default/files/ieo/council-documents/files/c-55-me-inf-01.pdf