Project Evaluation

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Final Evaluation of the Project "Reversing Desertification Process in Susceptible Areas of Brazil: Sustainable Agroforestry Practices and Biodiversity Conservation (REDESER)"

GCP/BRA/085/GFF

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ABSTRACT

1. This report presents the results, conclusions, and recommendations of the final evaluation of the Project "Reversing Desertification Process in Susceptible Areas of Brazil: Sustainable Agroforestry Practices and Biodiversity Conservation" (GCP/BRA/085/GFF) – REDESER. It was financed by the Global Environment Facility (GEF) and implemented by the Food and Agriculture Organization of the United Nations (FAO), in coordination with the Ministry of Environment and Climate Change (MMA). It was approved by GEF in 2016 and signed in 2017, with an initial implementation period until 2020, but due to several factors, it was extended at no cost until December 2025.
2. The project was designed to halt and reverse environmental degradation in Areas Susceptible to Desertification (ASD) in the Caatinga biome, ensuring the flow of ecosystem services, promoting integrated natural resource management, generating environmental benefits, and contributing to poverty reduction. One of the main objectives was to increase and improve the provision of goods and services through the sustainable management and restoration of dry forests and productive landscapes, including agroforests.
3. Based on document analysis, field missions, and interviews with relevant actors, it was observed that REDESER was relevant to the needs of institutional stakeholders, public policies to combat desertification, and local communities. The project addressed gaps in inter-institutional synergy and in natural resource management practices and multiple-use forest management. The project's objectives were aligned with national strategies to combat desertification and achieve land degradation neutrality and were consistent with other FAO and GEF projects and government interventions.
4. It can be concluded that the project demonstrated a satisfactory level of effectiveness in its five components: 1. Promoting Integrated Natural Resources (INRM) in Production Landscapes, 2. Promoting Multiple-use Forest Management, 3. Forest and Landscape Restoration (FLR), 4. Knowledge Management, Capacity Development and Awareness-Raising, and 5. Coordination with other activities, Monitoring and Evaluation. The project significantly improved the institutional, managerial, and technical capacities of key stakeholders in its area of operation. In addition, it facilitated the adoption of INRM practices and contributed to SFM and to improving the living conditions of farmers and the sustainability of the Caatinga.
5. The main recommendations focus on improving project design and implementation, regarding internal and external management with executing partners, considering seasonal and climate-related adaptations and training and practical learning activities, while maintaining partnerships between public and private entities and local organizations, which proved effective during the execution of the project. It is recommended that the schedule for implementing the activities proposed by the project respect a minimum period. It is also necessary to implement mechanisms to guarantee a minimum price for producers of plant biomass products.

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The evaluation also benefited from contributions from various other stakeholders, including government representatives—particularly from the Ministry of Environment—non-governmental organizations, farmers, the private sector, and communities located in REDESER intervention areas. Their contributions were essential to the team's work, and the team would like to express its sincere gratitude.

ACRONYMS

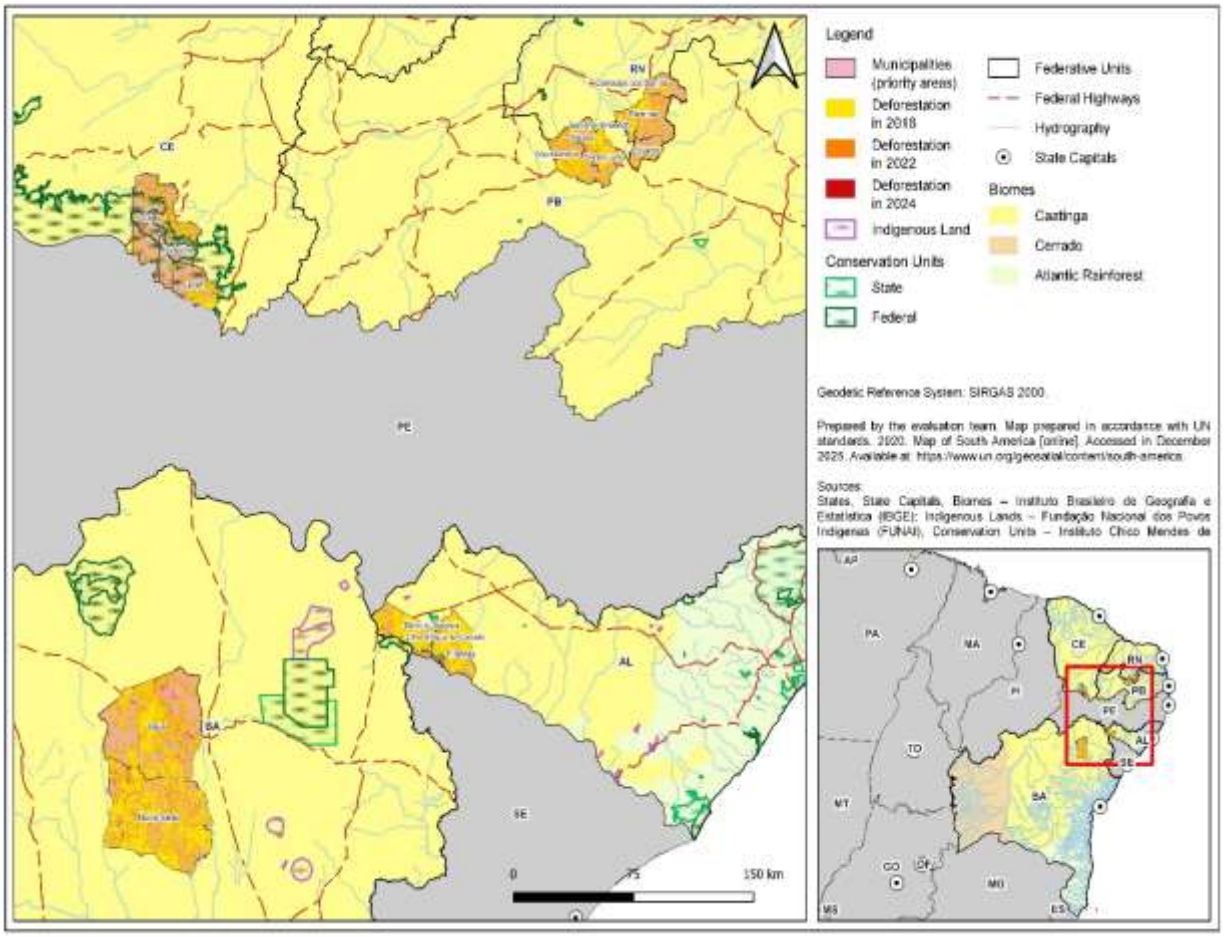
Note: The acronyms for Brazilian organizations and programs are in Portuguese

ABC	Brazilian Cooperation Agency
PA	REDESER Priority Area
APA	Environmental Protection Area
ASD	Areas Susceptible to Desertification
ATER	Technical Assistance and Rural Extension
AUTEX	Forest Exploitation Authorization
BH	Budget Holder
LoA	Letter of Agreement
NCCD	National Commission to Combat Desertification
CONAMA	National Environment Council
DCDE	Department to Combat Desertification, Ministry of Environment and Climate Change (MMA)
DEX	Direct Execution Modality
FAO	Food and Agriculture Organization of the United Nations
FAOBR	FAO Office in Brazil
FLONA	National Forest
GEF	Global Environment Facility
INRM	Integrated Natural Resource Management
IEO	Independent Evaluation Office (GEF)
LGPD	General Data Protection Law
LTO	Lead Technical Officer
M&E	Monitoring and Evaluation
SFM	Sustainable Forest Management
MTR	Mid-Term Review
NDC	Nationally Determined Contribution
LDN	Land Degradation Neutrality
OECD	Organization for Economic Co-operation and Development
SDG	Sustainable Development Goal
OED	FAO Office of Evaluation
PAA	National Food Acquisition Program

PCT	Traditional Peoples and Communities
NTFP	Non-Timber Forest Products
PIR	Project Implementation Report
PNAE	National School Feeding Programme
UNDP	United Nations Development Program
PPR	Project Progress Report
ProDoc	Project Document
RENASEM	National Registry of Seeds and Seedlings
FLR	Forest and Landscape Restoration
RLC	FAO Regional Office for Latin America and the Caribbean
AFS	Agroforestry System
SAN	Food Security and Nutrition
SFMP	Sustainable Forest Management Plan
SISAN	National System of Food Security and Nutrition
SNSM	National System of Seeds and Seedlings
tCO_2eq	Tons of carbon dioxide equivalent
UC	Conservation Unit
PMU	Project Management Unit
UNCCD	United Nations Convention to Combat Desertification
UNEG	United Nations Evaluation Group

MAP

Figure1. Municipalities and priority areas of action for REDESER.



Prepared by the evaluation team. Sources available in the map legend. Map prepared in accordance with UN standards. 2020. *Map of South America* [online]. Accessed in December 2025. Available at: https://www.un.org/geosatial/content/south-america.

EXECUTIVE SUMMARY

Background to the evaluation

1. The Project “Reversing Desertification Process in Susceptible Areas of Brazil: Sustainable Agroforestry Practices and Biodiversity Conservation (REDESER)" was implemented and executed by the Food and Agriculture Organization of the United Nations (FAO) with coordination from the Ministry of Environment and Climate Change (MMA), through the Department to Combat Desertification (DCDE/MMA).

2. The objective was to halt and reverse environmental degradation in Areas Susceptible to Desertification (ASD), ensuring the flow of ecosystem services, promoting integrated natural resource management, generating environmental benefits, and contributing to poverty reduction. The development objective was to increase and improve the provision of goods and services through the sustainable management and restoration of dry forests and agroforestry production landscapes. It was approved by GEF in 2016 and signed at the end of 2017 between the Brazilian government and FAO, with a term ending in March 2020. With a budget of US$3,930,155 from GEF, the project was extended until December 2025.

3. REDESER intervened in areas susceptible to desertification in the northeastern semi-arid region, promoting practices of Integrated Natural Resource Management (INRM), Sustainable Forest Management (SFM), and Forest and Landscape Restoration (FLR) in productive landscapes of the Caatinga. It also strengthened and trained federal and subnational government institutions to implement programs and projects focused on forest management in the Caatinga and combating desertification.

4. In this context, a final evaluation was carried out to verify the results achieved at the conclusion of the project, its sustainability, and its potential for expansion/replication. It provides a systematic report to inform learning, comparisons, decision-making, and knowledge sharing with GEF.

5. Through it, the extent to which the expected results were achieved, the relevance, including the target beneficiaries, the coherence, and the compatibility of the intervention with other interventions were assessed. Lessons learned and implementation challenges were also identified to guide potential expansion, replication, or follow-up projects in the region, or even initiatives with similar themes that could adopt approaches, tools, and design elements aligned with those of REDESER. In addition, the project's achievements were reviewed, identifying implementation challenges and results, positive or negative, intentional or unintentional, that occurred through the project, to support its long-term viability and strengthen future interventions.

6. The results of the evaluation will be shared with key stakeholders from FAO, GEF, MMA, national and regional co-financiers, regional implementers, and REDESER beneficiaries to foster a deeper understanding of the project's lessons learned and become a valuable input for future strategic initiatives related to desertification reversal, food security, and sustainable development in the Caatinga.

7. To carry it out, secondary and primary data were analyzed, respectively, from reports developed by executing institutions of LoAs and contracts, Progress Reports, Project Document (ProDoc), Annual Work Plans, and general financial records of component and co-financing. Added to this, there were field observations (primary data) collected from direct observation, focus groups, and semi-structured interviews with the coordinators and technical teams of LoA and contract executing institutions, implementers, and beneficiaries. Additional semi-structured interviews were conducted with members of the project's Management Committee and other stakeholders, including managers of executing organizations. This enabled the validation of information, the identification of convergences/divergences between different data sources, and the formulation of preliminary conclusions.

Conclusions

8. REDESER has demonstrated relevance and consistency in articulating technical interventions in the field with capacity building and knowledge management on a territorial scale in the Caatinga biome. Although the project was developed in 2015, its approach remains aligned with more recent policies and programs (Brazilian Action Plan to Combat Desertification and Mitigate the Effects of Drought (PAB - Brazil 2025-2045 and Action Plan for the Prevention and Control of Deforestation and Burning in the Caatinga - PPCaatinga) and dialogues with initiatives supported by GEF such as Conecta Caatinga and ARCA.

9. The project's effectiveness is reflected in concrete contributions to work and income, with an emphasis on the participation and empowerment of women and young people in actions and training. Products such as diagnostics, mapping, and SFMP supported and guided the sustainable use of resources, also highlighting bottlenecks between demand and legal supply of forest products.

10. In terms of efficiency, it was observed that the project had fewer co-financing resources, but optimized its execution through LoA, contracts, and co-financing with local partners, ensuring better execution. REDESER did not have its own M&E system, but used a Work Plan, PIR, and PPR to monitor execution. Methodological challenges persisted: lack of a baseline and clear distinction between project and co-financing results, as well as risks of subjectivity if analyses are not anchored in explicit, data-based operational procedures. Replanning after the MTR adjusted actions and timelines, maintaining the focus on results until 2025.

11. The sustainability of the project relies on exit strategies supported by voluntary commitments and local networks established by organizations: Associação Cristã de Base (ACB), Fundação Araripe (FA), EFASE, AGENDHA, and Diaconia carried out coordination efforts focused on technical assistance, productive insertion, and access to policies (PAA, PNAE, state programs), new projects (e.g., "Caatinga Viva"). Voluntary commitments to all REDESER PAs were signed by the executing institutions. One area for improvement is to expand the scope of diagnostics, focusing on territories, and consolidate a knowledge platform for technical audiences and decision-makers.

Recommendations

12. Under the leadership of FAO and with the participation of other actors, it is recommended that diagnostics and prioritization be guided by continuous listening to communities and adaptation to the local context. The project's outputs should feature accessible digital interfaces (*dashboards,* territorial fact sheets), allowing decision-makers, communities, academics, and communication channels to consult and update information on risks and opportunities, conceptually explain the proposed indicators and the operationalization of the M&E system, and clearly inform which results stem specifically from direct project intervention and which come from other sources, such as co-financing. The use of geoprocessing tools can contribute to these processes.

13. Under the leadership of FAO and MMA, with the participation of GEF and LoA and Contract executing institutions, it is recommended to improve actions related to coordination, planning, and governance: based on existing, planned, or proposed public policies, coordinate initiatives to avoid overlap and enhance synergies, formalize opportunities for dialogue between managers and implementers to exchange experiences, include mechanisms for interaction between executing organizations in the initial planning, and promote research on economic, social, and gender approaches s in the territories in coordination with executing and local/regional organizations.

14. Given the continuity of initiatives such as REDESER, it is recommended that the same actors consider seasonal (climatic) adaptations and training and practical learning actions, maintaining the partnership between public and private entities and local organizations, which has proven effective in implementation.

15. Under the leadership of FAO and MMA, with the participation of other actors, it is recommended that the implementation schedule for activities proposed by the project respect the minimum time of two years for interventions with forestry themes, with the ideal being around four years. It is also necessary to implement mechanisms to guarantee a minimum price for producers of plant biomass products, as well as to articulate dialogue with renewable energy sectors regarding the objectives and actions of projects in overlapping territories.

Lessons learned

16. For the implementation and monitoring of the execution, it was essential to rely on FAO Project Management Unit (PMU) to facilitate dialogue, identify, prioritize, and conduct the planned activities with co-financing partners and executing institutions of LoA and contracts. However, the constant need for dialogue and authorization through FAO headquarters in Rome can cause delays in processes and reduce the agility of operations.

17. Highly complex actions, such as SFM, AFSs, and forest restoration, show that short deadlines (less than two years) are insufficient, especially in projects with forestry components. Thus, longer deadlines, flexibility for reallocating resources, and monitoring governance with the possibility of supporting new partners or co-financiers are relevant for consolidating results. Furthermore, participatory governance arrangements are fundamental to increasing legitimacy, stakeholder commitment, and the effectiveness of actions in the territory.

18. When implementing projects in the Caatinga, the possibility of water scarcity must be taken into account, as this can be a limiting factor for interventions, indicating that strategies for water resource management and use need to be incorporated. Projects in arid zones, especially in more vulnerable territories, highlight the importance of flexible approaches that can quickly adapt to conditions, variations, and climatic extremes.

19. The participation of women in natural resource management is relevant to conservation, local governance, and the sustainability of initiatives. In addition, it strengthens Food Security and Nutrition and women's economic autonomy. The provision of training adapted to the local context helps to actively promote women's participation. Women's empowerment is crucial to achieving more equitable gender relations in domestic, community, and productive spaces.

Table 1. Classification of GEF evaluation criteria

GEF criteria/dimensions	Classification[1]	Summary comments
A. RESULTS		
Relevance	HS	The project was relevant in addressing the demands of the National Policy to Combat Desertification (PNCD), being a key project for the development of integrated natural resource management (INRM), capacity building in the field, and strengthening public policies.
Coherence	S	From its conception to its implementation, the project was aligned with the United Nations Convention to Combat Desertification (UNCCD), the priorities of GEF cycle 5 – promoting sustainable development and maintaining ecosystem services – and recent policies and programs (PAB-Brazil 2025-2045, PPCaatinga, and other national initiatives). It also dialogues with GEF initiatives such as Conecta Caatinga and ARCA and FAO (GIAHS), reinforcing institutional synergies and the logic of integrated land management.
Effectiveness	MS	The project achieved or exceeded several targets, contributed to the development of forest management plans in priority areas (PAs), supported INRM-related livelihood activities and capacity development involving women and young people, and generated knowledge and technical inputs potentially relevant to strengthening the PNCD. However, the consolidation, scalability, and long-term sustainability of several interventions remain uncertain, particularly in light of the limited restoration results achieved and continued dependence on technical assistance and institutional support.
Efficiency	MS	There was less co-financing than expected in the initial project document, but implementation was optimized through LoA, contracts, and

[1] Highly satisfactory (HS). Satisfactory (S). Moderately satisfactory (MS). Moderately unsatisfactory (MU). Unsatisfactory (U). Highly unsatisfactory (HU).

GEF criteria/dimensions	Classification[1]	Summary comments
		co-financing with local partners, ensuring the expected implementation and delivery of the project. The PMU dedicated itself to replanning based on the MTR, adjusting actions and schedules while maintaining a focus on results. Interventions in PAs through contracts and LoAs, bringing together delivery elements from more than one project component, enabled cost reductions and execution in less time (taking advantage of the same mobilization process).
B. **SUSTAINABILITY**	L	The sustainability of REDESER lies in exit strategies supported by voluntary commitments and local networks: ACB, FA, EFASE, AGENDHA, and Diaconia coordinate technical assistance, productive and social integration, and access to policies (PAA, PNAE, state programs) and new projects (e.g., "Caatinga Viva"). In addition, the content developed as input for public policies, such as the PNCD and the systematization of COP 16 results on desertification, will strengthen the federal government's ability to consolidate new commitments on this agenda. However, there is a risk that the diagnoses developed by the project for interventions in the PAs will not be disseminated and/or used, in addition to the implementation of forest management plans that were only developed in the project.
C. **IMPLEMENTATION**	MS	FAO was responsible for the implementation and execution of REDESER, coordinated by MMA through the Department to Combat Desertification (DCDE). The project was implemented in line with the project document, despite political and institutional changes affecting the federal context. Through adjustments to the work plan during the 2022-25 period and implementation through LoA and contracts, the project maintained operational continuity and contributed to actions targeting INRM, forest management, and restoration in priority areas, supporting the project's target audience. However, limitations related to partner integration and institutional uptake affected the continuity and consolidation of some actions.
D. **EXECUTION**	MS	Response included in item C (Implementation) above.
M&E Plan	U	Despite indications provided for in the ProDoc structure, REDESER did not have a specific monitoring and evaluation system, with a budget and staff fully dedicated to this function. Historical accumulations of a sociopolitical and technological nature in the territories were disregarded in the calculation of the REDESER Baseline, set at zero for all actions.
M&E Implementation	MS	FAO conducted field missions and used instruments such as work plans, PIRs, and PPRs, to support project monitoring and follow-up. However, the evaluation identified persistent weaknesses related to indicator

GEF criteria/dimensions	Classification[1]	Summary comments
		consistency, traceability of results, data disaggregation, and changes in targets and indicators during implementation, which limited the accuracy and transparency of the M&E system.
Overall assessment of the project	MS	REDESER was aligned with FAO priorities, GEF Cycle 5, and national public policies to combat desertification, and contributed to restoration-related practices, management plans, and Food Security and Nutrition actions involving family farmers and traditional communities in priority areas. The project also generated technical inputs that may inform future interventions in the Caatinga. However, the Unsatisfactory M&E design, together with Moderately Satisfactory ratings for effectiveness, efficiency, implementation and execution, and M&E implementation, indicate limitations affecting the monitoring and assessment of project results, the quality of implementation, and the timely and cost-effective delivery of results. Taken together, these limitations made the overall Moderately Satisfactory rating more consistent with the evidence presented.

Validation by the FAO Office of Evaluation

*The report has been subject to independent quality assurance and validation exercises performed by FAO's Evaluation Office (OED). The performance ratings for the project," **Reversing Desertification Process in Susceptible Areas of Brazil: Sustainable Agroforestry Practices and Biodiversity Conservation (REDESER)**" set out in the GEF rating scheme, have been adjusted as a result. The overall project performance is validated at the **Moderately Satisfactory** level. See appendix 8 – OED validation scheme - for details on the validation of individual criteria ratings.*

1. INTRODUCTION

1.1. Background of the project and evaluation

20. The Project "*Reversing the Process of Desertification in Susceptible Areas of Brazil: Sustainable Agroforestry Practices and Biodiversity Conservation* (REDESER)" aims to halt and reverse environmental degradation in Areas Susceptible to Desertification (ASD), ensuring the flow of ecosystem services, promoting integrated natural resource management, and contributing to poverty reduction. The project's development objective is to expand and improve the supply of goods and services from sustainable management and landscape restoration, including agroforestry production.

21. The evaluation was justified by the need to verify the results achieved at the conclusion of the project, its sustainability, and its potential for expansion/replication. It contributed as a systematic report for learning, comparisons, and transparency, guiding decisions and knowledge sharing in partnership with GEF. FAO-GEF Coordination Office (UC FAO-GEF) will use the results for accountability to GEF and to report on the achievement of project objectives and indicators and its efficiency.

22. The evaluation has a dual purpose. On the one hand, it allowed for verification of the degree to which the expected results were achieved, their relevance, including the target beneficiaries, and their consistency with national needs and priorities. On the other hand, it observed lessons learned to guide any expansion, replication, or follow-up projects in the region, or even similar themes, that may adopt approaches, tools, and design elements aligned with those of REDESER. It examined the project's achievements, identifying challenges (barriers) to implementation and results, positive or negative, intentional or unintentional, that occurred through the project, to inform its sustainability and improve similar future projects.

23. Table 2 provides detailed information about the project under evaluation.

Table1. Description of the REDESER project

Project title and FAO code	Reversing Desertification Process in Susceptible Areas of Brazil: Sustainable Agroforestry Practices and Biodiversity Conservation (REDESER) - GCP/BRA/085/GFF
GEF ID	532
Country	Brazil
Implementation Modalities	Direct Execution Modality (DEX) Implementing Agency: Food and Agriculture Organization of the United Nations Executing Agency: Food and Agriculture Organization of the United Nations Other co-executing agencies: Ministry of Environment and Climate Change
Project duration	The REDESER project was approved by GEF on 9 May 2016. The project agreement was signed on 21 November 2017, between the Brazilian government and FAO, with a term ending on 30 March 2020. The project was extended until 30 December 2025.
GEF grant	USD 3,930,155
Issues addressed by the intervention/outline of relevant characteristics of the context	The REDESER project intervenes in Areas Susceptible to Desertification in the northeastern semi-arid region, characterized by low and irregular rainfall, fragile soils, and high climatic variability, which compromise the provision of ecosystem services to family-based rural communities. The intervention seeks to combat land degradation and reverse desertification processes by promoting Integrated Natural Resource Management, Sustainable Forest Management (SFM), and Forest and Landscape Restoration (FLR) practices in productive landscapes in the Caatinga. The socioeconomic context involves family farmers with low productive diversification, vulnerable to recurrent droughts and with limited access to technologies for coexisting with the semi-arid environment. There are initiatives aimed at strengthening federal and subnational government institutions to implement programs and projects focused on forest management in the Caatinga and combating desertification. There is also experience in training public officials and rural producers to ensure the adoption and expansion of good practices in integrated natural resource management.
Project objectives	To halt and reverse environmental degradation in Areas Susceptible to Desertification (ASD), ensuring the flow of ecosystem services, promoting integrated natural resource management, generating environmental benefits, and contributing to poverty reduction. The development objective is to increase and improve the provision of goods and services through the sustainable management and restoration of dry forests and agroforestry production landscapes.
Expected project results	REDESER is implemented through the following guiding components: • Promoting Integrated Natural Resource Management (INRM) in Production Landscapes in the ASD; • Promoting multiple-use forest management; • Forests and landscapes restoration (FLR); • Knowledge management, capacity development, and awareness raising; and

	• Coordination with other initiatives, monitoring, and evaluation. The expected results of the REDESER project are: • **Outcome 1.1:** Integrated Natural Resource Management (INRM) mainstreamed and scaled up at landscape level. Target of 904,142 ha under Integrated Natural Resource Management, with evaluation of practices, 20% increase in non-timber forest products, and training of 100 technicians in INRM guidelines. • **Outcome 2.1:** Forest area under sustainable forest management (SFM) for multiple use should reach a total of 15,000 ha. Starting from a baseline of 1,712 ha. • **Outcome 3.1:** Seed and seedling production capacity improved, with a 20% increase in registered nursery production and training of 1,600 nursery network employees. • **Outcome 3.2:** Forest connectivity sites defined, sustainably managed and restored, totaling 30,000 ha of corridors through assisted natural regeneration, enrichment, and planting. • **Output 4.1:** Institutional capacity of 270 technicians from 14 municipalities and 9 ASD states improved, with the establishment of a network for sharing information on soil degradation, sustainable land management, SFM, and forest and landscape restoration. • **Outcome 4.2:** Policy makers and farmers, private sector, and education stakeholders trained to implement SFM, forest and landscape restoration (FLR), INRM, and biodiversity conservation through the production and use of teaching and extension materials (3 videos, 48 radio spots, 9 events with farmers, distribution of 5,000 booklets, 5 new book editions, and 10 technical events). • **Outcome 5.1:** Synergy established with complementary initiatives to promote sustainable management and the benefits of restoration at the landscape level. • **Outcome 5.2:** Project implemented with results-based management, with an operational monitoring and evaluation (M&E) system and published and disseminated interim and final evaluations, ensuring the application of lessons learned.
Project areas	Its activities are focused on the semi-arid region, with actions developed in five Priority Areas located in the states of Alagoas (AL), Bahia (BA), Ceará (CE), Paraíba (PB), and Rio Grande do Norte (RN), covering the following locations: **Territories and municipalities** Xingó – Alagoas. Delmiro Gouveia, Olho d´Água do Casado, Piranhas Araripe – Ceará. Crato, Barbalha, and Jardim Uauá – Uauá and Monte Santo Seridó – Paraíba Santa Luzia, São Mamede, and Várzea Seridó – Rio Grande do Norte Carnaúba Dantas, Equador, Parelhas, and Santana do Seridó
Alignment with FAO Country	CPF results 3.1.1. Federal, state, and municipal governments, as well as other stakeholders, have improved institutional and technical capacities to promote ecosystem services and the

Programming Framework (CPF)	restoration of areas at high risk of environmental degradation, landscape deterioration, and deforestation within the framework of the Decade of Restoration.
Alignment with FAO strategic framework	Strategic framework: BP1 - Innovation for Sustainable Agricultural Production - SDG Target 12.2; BE3 - Biodiversity and Ecosystem Services for Food and Agriculture. SDG Target 15.2; SDG Target 15.3.

24. Table 1 presents the list of the main partners involved in the implementation of the project, including those formally contracted through LoA or bidding processes (contracts) and co-financing partners, as established in the project document (ProDoc). Table 2 reflects the updated composition of the project partnership (co-executors), indicating the specific roles played by each in the execution of the planned activities.

Table1. Co-financiers provided for in the ProDoc

Financial plan	**Total amounts in USD**
Financing Plan: GEF Allocation:	***3,930,155***
1) AGENDHA – Advisory and Management on Nature Studies, Human Development and Agroecology	160,000
2) APNE - Northeast Plants Association	160,000
3) CEPIS - Technological Park Foundation of Paraíba	533,333
4) FA - Araripe Foundation	160,000
5) FAO - Food and Agriculture Organization of the United Nations	200,000
6) FUNETEC - Technological and Cultural Education Foundation	800,000
7) IABS - Brazilian Institute of Development and Sustainability	266,666
8) ICRAF - World Agroforestry Centre	100,000
9) INSA – National Semi-arid Institute	1,333,333
10) MDA - Ministry of Agrarian Development	3,360,000
11) MMA - Ministry of Environment	1,866,667
12) SEAFDS - Secretariat of Agriculture of Paraíba	1,066,667
13) SEAPAC – Support Services for Alternative Community Projects	160,000
14) SEIHRMACT - Paraíba Environment Secretariat	800,000
15) SEMA - Crato Environment Secretariat	533,334
16) SEMARH - Alagoas State Environment Secretariat	533,333
17) SEPLAN - Rio Grande do Norte State Planning Secretariat	1,066,666
18) SFB - Brazilian Forest Service	2,666,667
Subtotal of co-financing:	15,766,666
Total budget	**19,696,822**

Source: ProDoc, 2016.

Table2. Updated co-financiers

Organizations and Companies	**Total contract values (R$)**
1) ERM BRASIL LTDA	298,070
2) Northeast Plants Association (APNE)	479,029
3) Araripe Foundation – Uauá Territory	1,504,000

4) Christian Base Association – Araripe Territory	420,043
5) AGENDHA – Xingó Territory	1,385,607
6) AP1MC – One Million Cisterns Association	434,486
7) Verde Vida – Seridó Territory	1,240,894
8) Diaconia – Seridó Territory	1,186,240
9) Araripe Foundation – Seridó Territory	1,184,000
10) Araripe Foundation – Araripe Territory	1,130,200
11) Araripe Foundation – University of the São Francisco Valley	1,017,500
12) Terra Sertaneja Community Association/ Family Agricultural School of the Sertão - ACOTERRA/EFASE ACOTERRA	137,000
13) EKOS BRAZIL	222,796
Total	**R$ 7,171,302**

Source: Terms of Reference for the final evaluation of the REDESER project. FAO, 2025.

1.2. **Context**

25. There is intense anthropogenic pressure on the resources of the Caatinga. According to the project document (ProDoc), among the most relevant vectors are shifting cultivation, cycles of intensive crops (such as cotton and sisal), soybean expansion, extensive livestock farming (cattle, goats, and sheep), the use of biomass for energy (firewood and charcoal on an industrial, commercial, and domestic scale), the installation of large photovoltaic plants in some regions, and the exploitation of timber and non-timber forest products. Data from the 2017 Agricultural Census show that approximately 67% of rural establishments are subsistence-based, with little involvement in local markets. Fifty-three percent of activities are concentrated in livestock farming and 36% in temporary crops, indicating land use in production systems with less technological aggregation and greater sensitivity to climate variations (IBGE, 2017).

26. There are also demographic and economic trends that shape decisions in the countryside. Rural-urban migration has been significant for over a decade, with producers aged over 50. These specificities are relevant when considering policies for development and control of deforestation and desertification.

27. In addition to clear-cutting and permanent conversion of land use in the Caatinga, attention is drawn to the continuous deterioration of native vegetation caused by burning, extensive livestock farming with overgrazing, illegal logging without management, shifting agriculture, and

exploitation for energy generation. These factors contribute to desertification[2] , reducing water availability and soil in arid and semi-arid environments.

28. In this context, REDESER was presented to the Global Environment Facility (GEF) by the Brazilian government together with FAO in 2013 (GEF cycle 5). Approved by GEF in 2016 and signed by the Brazilian Cooperation Agency (ABC) in 2017, the project began operating in 2018, undergoing three extensions, with completion scheduled for 30 December 2025.

29. The project territory involved ASD, covering 1.34 million km² (16% of Brazilian territory) and home to 34.8 million people (17% of the population). The project aimed to directly benefit up to 1,500 small producers from local communities in priority territories of the Caatinga — Seridó (PB/RN), Araripe (CE), Xingó (AL), and Uauá (BA).

30. The goals were: direct action on 904,142 ha, of which 618,062 ha were forests; the prevention of 5,709 ha of deforestation, which would promote the absorption of 439,200 tCO2eq through restoration activities; and 696,219 tCO2eq would be avoided by not deforesting. ProDoc also predicted an indirect reduction in emissions equivalent to approximately 2,058,146 tCO2eq, resulting from avoided deforestation and reduced forest degradation. The REDESER strategy would mobilize actors in the three spheres of government, as well as research institutions, non-governmental organizations (NGOs), and local producers.

31. REDESER was aligned with policies such as the National Policy to Combat Desertification, the Brazil Without Poverty Program (BSM), and, fundamentally, the axes of the Multi-Year Plan (PPA) between 2012 and 2019, associated with biodiversity conservation and emissions reduction, as well as the National Food Security Policy, the Forest Code (Law 12,651/12), and the National Plan for Recovery of Native Vegetation (PLANAVEG). In the internal and financing context, it aligned its focal areas and components with the objectives and results of GEF and the strategic objectives, regional priorities, and Programming Framework of FAO in the country.

32. The selection of Priority Areas (PAs) for the project was based on previous studies by MMA, which considered the location of ASDs and a socioeconomic structure whose dynamics put pressure on the Caatinga without adequate sustainability standards. The choice was therefore geographical, strategic, and sectoral for the insertion of public policies. It prioritized contexts in which the intervention would have the greatest demonstrative effect, with the potential to correct practices and internalize sustainable management in local economic chains. It was an evidence-based decision, simultaneously addressing environmental vulnerability (susceptibility to desertification) and the productive vectors that aggravate it, in order to induce replicable improvements on a territorial scale.

[2] Under the United Nations Convention to Combat Desertification (UNCCD), desertification refers to land degradation in arid, semi-arid, and dry sub-humid areas. It is a gradual process of loss of soil productivity and vegetation cover due to human activities and climatic variations, such as prolonged droughts and floods. Inappropriate land management practices, land use exhaustion through agricultural activities, and deforestation are associated with these events (UNCCD. 2022).

33. For the project proposal, MMA indicated an approach focused on Integrated Natural Resource Management (INRM). Through this approach, it sought to resolve challenges to the use of natural resources through stakeholder participation and adaptive learning, aiming at benefits on multiple scales, from the production unit to the local landscape. Thus, biodiversity, physical (soil, water), socioeconomic, and institutional dimensions were integrated to connect scientific evidence and decision-making, generating results, resilience, and ecosystem services.

34. Applied to the Caatinga, INRM can guide interventions that: i. reconciles agricultural production adapted to the semi-arid region, water security, soil conservation, and territorial governance through basin committees and intermunicipal consortia; and ii. include ASD, articulating practices such as native pasture management, agroforestry systems, and restoration of degraded areas, with participatory monitoring and adaptations to climate variations.

35. The evaluation provides insights into the use, innovation, and performance of REDESER. The results traced the project's path, from its approval (2016) and signing (2017) to the start of implementation the following year and extensions until December 2025. It also analyzed how the federal political context directly affected the course of the project, bringing about the need for adjustments to the strategy and goals proposed in ProDoc.

1.3. **Objectives tree**

36. The model proposed for the evaluation corresponded to a tree of objectives or results, a visual representation presenting objective, components, outcomes, and expected outputs. The project was based on five components, eight outcomes, and eighteen outputs (Figure 1). Based on this approach, the challenges (barriers) and positive points of its components and post-project strategies were observed, aiming at the sustainability of the results.

37. The model sought to simplify the visualization of the project, identifying the paths and changes that occurred with its execution. The arrows in the diagram represent the interactions between outputs, outcomes, and components. The products (and services) aim at positive changes and are related to the expected outcomes, which, in turn, are key to consolidating the components and contributing to the overall objective of REDESER.

38. Based on GEF Cycle 5, no theory of change was developed for REDESER. However, the project was structured with cause-and-effect elements that are present in the project rationale and in the logical framework presented in ProDoc. The elements referring to assumptions, barriers, long-term objectives, and the causes and consequences of the problems raised fostered the logic of the project. Thus, for the evaluation, the assumptions, barriers, and planned responses were observed, which led to the consolidation of the components, outcomes, and expected outputs. To achieve the objective of reversing the desertification process, the following assumptions were considered:

    - Alignment with the Country Programming Framework and the National Policy to Combat Desertification will ensure political and institutional support and co-financing for the implementation and scaling up of actions in Priority Areas.

- The commitment of government actors, institutional partners, and local communities will support the coordination and effective implementation of the project.
- The strengthening of technical and institutional capacities will enable the effective implementation of INRM, SFM, and restoration actions in the territory.
- Communities and family farmers have adopted sustainable production practices when they receive technical training, ongoing assistance, and adequate incentives.
- The application of legal and regulatory frameworks will be improved when associated with training processes and practical demonstrations in the field.
- Strengthening the native seed and seedling chain will ensure the availability and quality of inputs for restoration actions.
- Monitoring and evaluation systems based on adaptive management will allow for the adjustment of strategies and increase the effectiveness of actions to combat desertification.

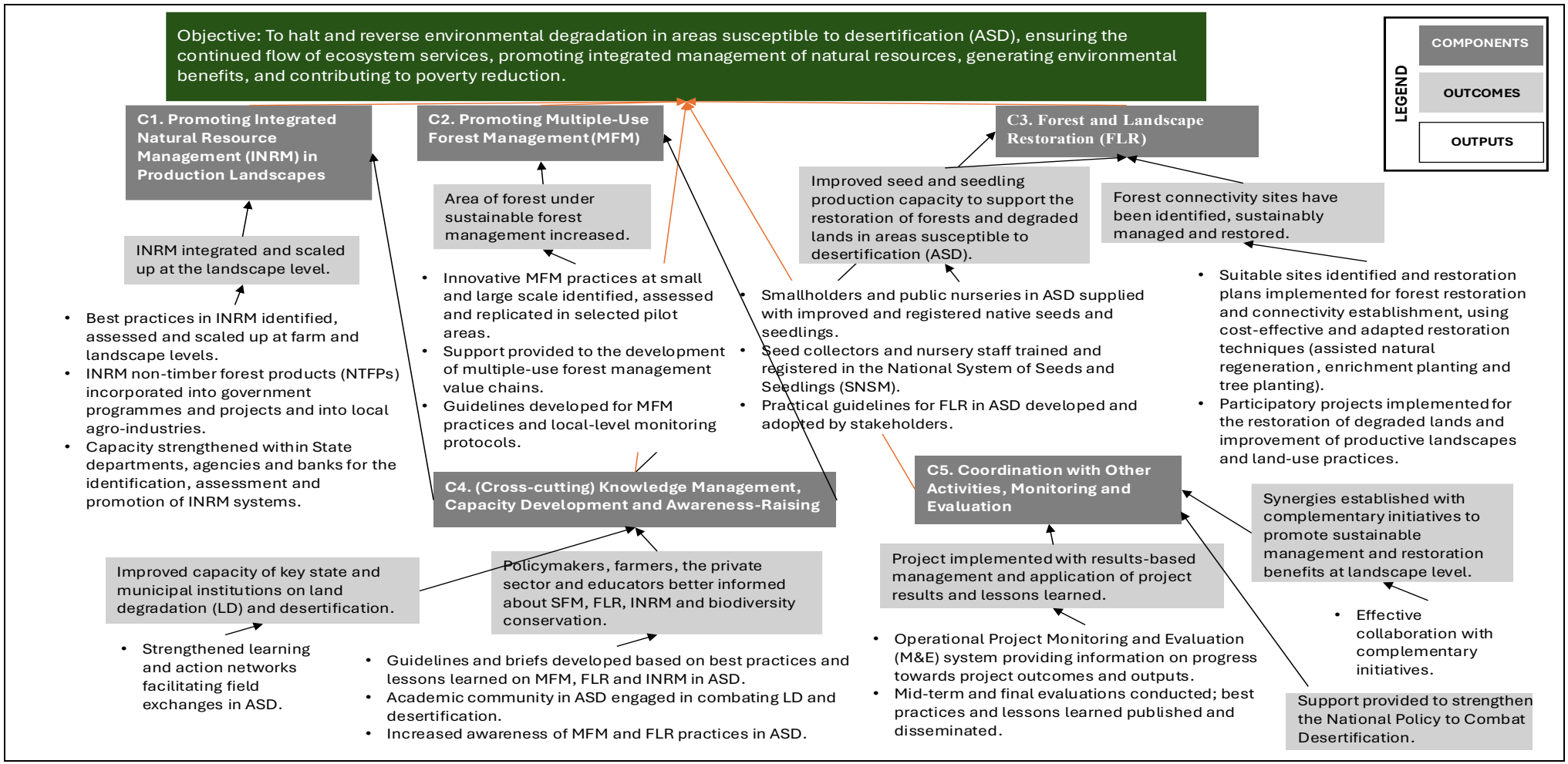
39. The barriers to achieving the objectives and global environmental benefits (GEBs) identified in the ProDoc were: 1. Poor dissemination of good practices related to MST/SFM; 2. Complex, bureaucratic, and restrictive legal and regulatory framework for MFS/MST licensing; 3. Lack of policies/guidelines for INRM; 4. Limited institutional capacities at the regional level to promote MST/SFM; 5. Limited incentives and fragile production chains for small-scale, multiple-use INRM; 6. Low capacity for knowledge management and rural extension in ASDs; and 7. Lack of permanent technical assistance for forest restoration.

40. Based on this, we sought to organize the objective tree with the components, outcomes, and activities in response to the barriers. It was understood that component 1 aimed at integrating and expanding INRM at the landscape scale, responding to barriers 1, 3, 4, and 5, with deliverables related to good practices, strengthening NTFPs, and promoting INRM with executing i partners and co-financiers.

41. Component 2 aimed at expanding forest areas under SFM, responding to barriers 1, 4, and 5, with deliverables related to SFM with innovative practices identified and replicated, the development of multiple-use production chains, and guidelines developed for SFM practices. In component 3, barriers 1, 4, 6, and 7 were addressed through capacity building to produce improved seeds and seedlings, aiming at forest restoration, strengthening smallholders and nurseries with native seeds, and training for collectors. The search for connectivity between forest fragments was also included, with the identification of locations for the implementation of restoration.

42. Component 4 was dedicated to overcoming barriers 1, 4, and 6 through actions aimed at improving the capacity of key public institutions on land degradation (LD) and desertification, in addition to promoting training for the project's target audience in SFM, FLR, INRM, and biodiversity conservation. Component 5 cut across existing barriers, as it provided feedback on monitoring and evaluation processes to strengthen synergies with initiatives complementary to REDESER and encourage the replication of results and lessons learned in future initiatives.

Figure2. REDESER objectives tree.



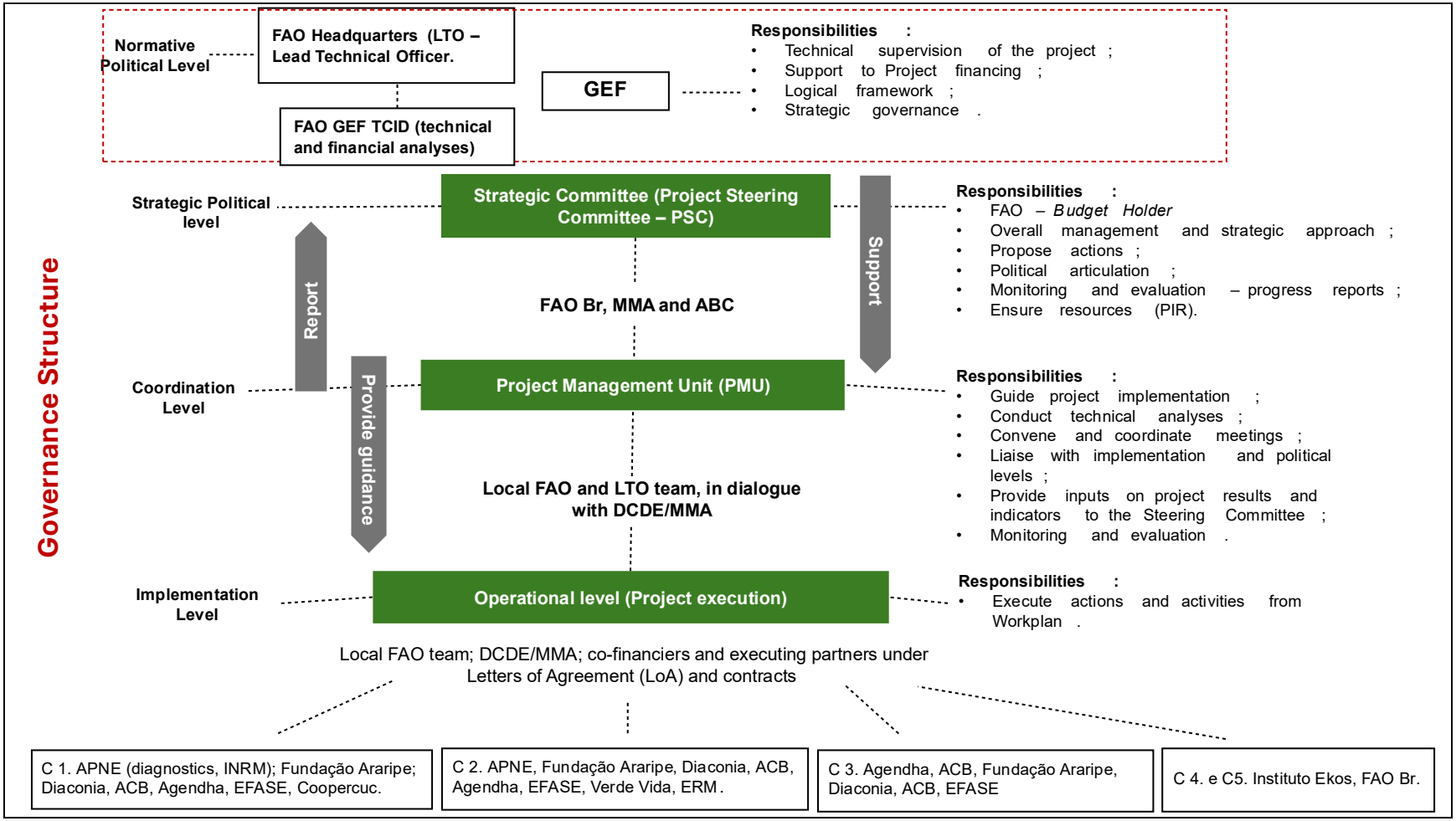
Source: Prepared by the evaluation team based on the project's ProDoc.

Stakeholder analysis

43. Based on the project document (ProDoc), the project governance logic involved actors who were coordinated prior to its approval. Thus, an update was proposed to understand the role and involvement of each stakeholder. The actors and their levels of involvement were identified, namely: i. political strategic level, where political decision-makers are located. They contribute to the alignment of what will be executed by the project; ii. coordination level, where those responsible for achieving the objectives and results are located, including project monitoring and planning; and implementation/operational level, where day-to-day activities are carried out for the delivery of products and services.

44. At the political-strategic level, there was a Project Steering Committee (PSC), formed by FAO, MMA, and the Brazilian Cooperation Agency (MRE), focused on the management and strategic approach of REDESER, with a view to proposing actions and political coordination, ensuring budget execution, planning, monitoring, and evaluation. At the coordination and implementation level, there was a Project Management Unit (PMU), composed of the local FAO team, which operated under the technical supervision of the LTO and in coordination with the Department to Combat Desertification and Land Degradation (DCDE/MMA). Finally, at the implementation/operational level, there was the local FAO team, the DCDE/MMA, and co-financiers and executing institutions of LoA and contracts.

Figure3. REDESER governance model



Source: Prepared by the evaluation team based on the project's ProDoc.

45. The analysis of actors focused on those identified in the Terms of Reference for the evaluation. Some of the actors identified in the ProDoc and observed in the MTR were not directly involved in the project and were therefore excluded from the analysis. The participation of actors in REDESER and their level of involvement in other projects was observed. On a three-level scale of importance, key actors were those with decision-making power and influence. Primary actors were directly related to the execution of the project and affected by it. Finally, secondary actors were those who had an interest in or participated indirectly or temporarily in the project.

Table2. Analysis of actors involved in REDESER.

Identified actor and role in the project	Analysis of performance
Local FAO team (Brazil), BH, LTO **Key actor**	Responsible for coordinating and, in coordination with MMA, providing technical guidance for the implementation process. Played an institutional and political role in dialogue with MMA and Headquarters in Rome. Between 2016 and 2022, there were constant changes in the project coordination, which led FAO team to engage in dialogue with MMA to maintain the scope of the project, managing to preserve it despite attempts to change the composition of the Priority Areas, methodology, and technological components, which did not materialize. In the 2023 replanning with MMA, FAO conducted the project through LoA and contracts covering more than one component. This solution was key to expanding the scope of results, but it also faced the challenges of ensuring administrative flexibility in the face of unforeseen events and consolidating a way to communicate the progress and results of REDESER.
MMA (Department to Combat Desertification – DCDE/SNPCT) **Key actor**	During the initial implementation period of the Project, the Ministry sought to include changes in target territories and results proposed by REDESER, which did not materialize. In 2023, efforts were made to coordinate REDESER in accordance with the objectives and results set out in the ProDoc. The national direction of the project was formalized through a ministerial ordinance, with the DCDE playing the role of coordination and articulation in REDESER, in addition to direct dialogue with the National Secretariat for Traditional Peoples and Communities and Sustainable Rural Development (SNPCT). Together with FAO, a review of the planning was carried out to consolidate the activities that would be carried out until the end of the project (2025). MMA identified focal points and incorporated project management (as defined in the ProDoc), playing a key role throughout the execution as a political coordinator of the planned components and activities.
Northeast Plant Association (APNE) **Primary actor**	Co-financier and executing institution of LoA. Working closely with academia, it carried out actions focused on the activities of the state and the private sector, with a partial focus on agroecology and strategies for coexistence with the semi-arid region. Produced an initial diagnosis of Priority Areas and proposed criteria for prioritizing best practices in INRM. It also worked to expand and strengthen the technical and scientific basis of Sustainable Forest Management and updated the SFMP database. It operated in Seridó, RN and PB (biomass consumption hubs). APNE's work has been and continues to be a relevant resource for SFMP managers and technicians (SFB, IBAMA, and State Environmental Agencies - OEMAs), forest engineers, and those responsible for SFMP and the red ceramics sector (companies/associations).

Araripe Foundation **Primary actor**	Co-financier, executing institution of LoA and contract. It acts with actions centered on the performance of the state and the private sector, with a partial focus on agroecology and strategies for coexistence with the semi-arid region. 1. In Araripe (CE), it focused on supporting the development of SFMP as a strategy for the sustainable use of forest resources in rural settlements, prioritizing women and young people; 2. In Seridó (PB), it promoted activities for the sustainable management of natural resources, aiming to reduce anthropic pressures through agroecological AFSs with forage production; beekeeping and meliponiculture, prioritizing PAs and traditional communities, encouraging the participation of women and young people; and 3. In Uauá (BA), in dialogue with Coopercuc, it dedicated itself to the sustainable use and management and recovery of areas susceptible to desertification, supporting the inclusion of family farmers from Fundo de Pasto communities in institutional commercial circuits.
Christian Base Association (ACB) **Primary actor**	LoA executing institution in Araripe (CE), working on agroecological transition and coexistence with the semi-arid region, linked to local and regional networks, focusing on public policies for family farming and Traditional Peoples and Communities (PCT). He has developed actions to implement and strengthen good INRM practices, focused on agroecological food production and sustainable use, to improve the quality of life of rural communities. He has supported women and young people, including directing part of the production to markets and consumption in the communities.
Advisory and Management on Nature Studies, Human Development and Agroecology (AGENDHA) **Primary actor**	Co-financier and LoA executing institution in Xingó (AL). It has a solid agroecological base and experience in the semi-arid region, working in local and regional networks, focusing on public policies for family farming and traditional peoples and communities (PCT). It promoted the creation of the Aradas Network (for the recovery of degraded areas in Alagoas). It implemented actions to reduce degradation by livestock farming, with the recovery of Legal Reserve areas integrated with sustainable forage production (Rampas) in AFSs. Allso supported soil and water conservation through the construction of Barrocais and riparian AFSs. Valued the participation of young people, women, and older people in REDESER actions.
Diaconia **Primary actor**	Contract executing institution. Originated from pan-ecclesial articulations in the 1960s, in the context of the fight against the dictatorship, maintaining a diverse council today. Operates throughout the Northeast. Comprises local and regional networks of agroecology and coexistence with the semi-arid region, focusing on public policies for family farming and PCT. It has carried out actions in Seridó (RN), promoting sustainable agrobiodiversity management activities, aiming to reduce anthropic pressures and environmental degradation through agroecological AFSs with forage and fruit production, including the promotion of beekeeping and meliponiculture.
Terra Sertaneja Community Association and Family Agricultural School of the Sertão (ACOTERRA/EFASE) **Primary actor**	Co-financier and LoA executing institution. It comprises local and regional networks of agroecology and coexistence with the semi-arid region, focusing on public policies for family farming and PCT. It has worked in Monte Santo and Uauá, based on the development of a Technical Assistance and Rural Extension (ATER) strategy for pasture areas. It has implemented training and technical assistance actions in INRM, including exchanges with technical schools, research institutions, and Civil Society Organizations (CSOs). It worked to recover degraded areas through sustainable forage production management, AFSs with fruit trees and honey and stingless bee species, and soil and water conservation through the construction of Zero-Base Dams. In addition to strengthening the capacities of family farmers and EFASE students, it engaged school graduates in its technical team, valuing the participation of young people and women in REDESER activities. It also

	contributed to mobilizing and coordinating beneficiary communities to support studies for the candidacy of pasture-based agricultural systems for the GIAHS Program[3] .
Family Agribusiness Cooperative of Canudos, Uauá, and Curaçá (COOPER-CUC) **Primary actor**	In dialogue with the Araripe Foundation and the Family Agricultural School of the Sertão (EFASE), it supported the operationalization of REDESER in the Uauá PA. It participated as a co-financier based on its synergies with the project's goals. With a long history of promoting value chains for socio-biodiversity products (umbu, Caatinga fruits, honey, goat cheese), the Cooperative receives raw materials from its members and processes products in its own agroecological units, demonstrating in practice how the sustainable use of the biome generates income (including in institutional markets), food security, and conservation. It operates in agroecological networks and coexists with the semi-arid region, with IRPA as a reference partner for silvopastoral actions, such as Recaatingamento and other caatinga management techniques, in addition to supporting AFSs with fruit trees and beekeeping.
Verde Vida **Primary actor**	Contract executing institution. Company with extensive experience and expertise in forest management in the Caatinga. It worked to strengthen sustainable use and recovery activities to reduce pressure on resources and environmental degradation in Seridó (PB and RN), aiming to expand the supply of forest biomass originating from the reactivation or development of Sustainable Forest Management Plans, in Settlement Projects and on private lands. Supported dialogue between settlers and rural landowners and technicians from ATER, OEMAs, and INCRA.
AP1MC **Primary actor**	LoA executing institution. Organization linked to the Brazilian Semi-Arid Network (ASA), a political and social network of civil society organizations in the region. Proposed and helped consolidate the One Million Cisterns Program – P1MC. AP1MC reflects the institutional management and execution mechanism created to enable ASA programs in practice. Through REDESER, it updated information on seed banks (agricultural). In Xingó and Uauá, it contributed to the qualification of Community Seed Houses and the improvement of local capacities for the collection, selection, and storage of native and forest seeds, and the production of seedlings with family farmers, including nurseries. It contributed to the expansion of the participation of women and young people in rural areas.
Ekos **Secondary actor**	Contract executing institution. Its support was still ongoing during the evaluation process and focused on developing guidelines and orientations to improve public policies and disseminate forest and landscape restoration actions, identifying opportunities for landscape connectivity in PAs. It would also produce a matrix for the integration of public policies and good practices in INRM, and propose a strategy for forest restoration, landscape, and forest connectivity in PAs.

[3] GIAHS concerns productive landscapes created through development between farmers and the ecosystem functions in their surroundings. GIAHS values sustainable land use, with practices adapted to the territorial context, consideration of local agri-food systems and food security, reduction of socio-environmental vulnerability, and maintenance of ecosystem services. These are central themes for REDESER in areas susceptible to desertification, with local governance based on social participation and guaranteed safeguards.

Environmental Resources Management (ERM) **Secondary actor**	As the contract executing institution, it contributed with research aimed at the methodological improvement of studies that support the National GHG Inventory, including processes and documentation for the preparation of the Inventory, incorporating recent scientific advances, such as IPCC methods and national scientific development.
GEF operational focal point in the Brazilian Government – Ministry of Finance **Secondary actor**	Played a key role in monitoring and understanding the activities underway in the project with FAO. Played a role in monitoring the work plans proposed for the project.
Brazilian Cooperation Agency (ABC) **Secondary actor**	As a member of the project steering committee, it is responsible for high-level dialogue between the Brazilian government and FAO and GEF. It played a role in monitoring and approving the proposed work plans for the project.
Municipal Environment Secretariats (SMMAs) **Secondary actor**	No participation by SMMAs in the project was observed. However, these actors are identified as potential beneficiaries and replicators of the lessons learned and content developed in the project and could strengthen dialogue with family farmers and traditional peoples and communities on the importance of conservation and sustainable land use and support the implementation of respective practices.
State Environmental Agencies (OEMAs) **Secondary actor**	The OEMAs of RN and PB co-financed the project. The states of CE and BA participated in training events on AFSs and Conama Resolution 507/2024 on forest management. In RN, there are synergies between REDESER and the subnational program to combat desertification, contributing directly to project actions through the State Council to Combat Desertification.
Brazilian Forest Service (SFB) **Secondary actor**	As co-financier, it supported the development of the project and the review of MFS plans, ensuring improvements in administrative procedures for Seridó and Araripe, optimizing the criteria for selecting areas. It may become involved in initiatives in the Araripe FLONA and strengthen processes related to seed collection, seedling production, and recovery of degraded areas, in addition to continuing to support training. It is also the manager of the National Forest Development Fund (FNDF). In addition, from its regional office in the Northeast, which covers the project's PAs, the SFB is a key technical interlocutor on forest management. However, despite the responsibilities set out in REDESER's ProDoc, in practice it played a limited role in implementation.
IBAMA **Secondary actor**	It supported the mobilization and methodology for the event to debate Conama Resolution 507/2024. It is working to systematize/manualize rules and standards for forest management in the Caatinga, with support from REDESER.
INCRA **Secondary actor**	Has supported the identification of settlement areas where SFM Plans are being developed, mainly in Ceará.
Bank of the Northeast (BNB) **Secondary actor**	BNB participated in Project agendas, such as training on Conama Resolution, aiming to understand the potential for its support in the implementation of Planted/Primary Multiple-Use Forest Management (PMFM). It has been requested by LoA executing institutions to approach the REDESER public, with the possibility of reviewing procedures to enhance access to rural credit.

2. METHODOLOGY

2.1. Scope and objective of the evaluation

46. The evaluation was guided by the criteria recognized by the OECD/DAC and GEF – Relevance, Coherence, Effectiveness, Efficiency, and Sustainability – complemented by the cross-cutting themes of Gender Inclusion, Generations, and Poverty Reduction (Table 4). Considering that some project interventions were not completed at the end of the evaluation, the impact criterion was not considered (however, the prospect of achieving the objectives in the long term was noted). The sustainability analysis was maintained, as the strategies include post-project actions, thus favoring the continuity of results. Although the generational approach was not formally included, the evaluation team noted the involvement of young people in REDESER. Lessons learned and good practices were also noted to understand how they can be replicated in future interventions.

Table3. Criteria evaluated and description

Criterion	Brief description
Relevance	Assesses whether the objectives and design of the intervention respond to the needs, policies, and priorities of beneficiaries and partners/institutions, and continue to do so if circumstances change.
Coherence	Assesses consistency with other policies, strategies, and projects (internal coherence) within the funder's scope, and its complementarity (external coherence) with other interventions by different partners (governments and civil society) in the same territorial context, public policy, and area of action. It is key to understanding and avoiding duplication or overlapping of efforts, enhancing synergies between actors and projects, and ensuring greater effectiveness and sustainability in public policies.
Effectiveness	The extent to which the intervention has achieved, or is expected to achieve, its objectives and results.
Efficiency	The extent to which the intervention produces, or could produce, results in an economical and timely manner. It assesses whether the financial resources were invested in the most economical way and whether the results were achieved satisfactorily.
Sustainability	Observes the extent to which the benefits of the intervention continue, or are likely to continue, after the project has ended.
Complementary criteria	
Gender equality	Observes changes in power relations between different genders and the results of the intervention, determining whether changes have occurred and what their effects have been.
Generational equity	Observes the dynamics of power relations between different generations and how the results of interventions relate to young people and the elderly, identifying whether changes have occurred and their effects.
Poverty reduction	Assesses the extent to which the project contributed to decent work and income alternatives in the Caatinga, with a central focus on environmental and social sustainability.

47. Appendix 1 provides a list of criteria, dimensions observed, and guiding questions (Table A1). Questions on cross-cutting themes were also included, with an emphasis on gender equality (Table A2), supporting the analysis of gender mainstreaming as a cross-cutting theme, the participation and empowerment of women, and contributions to reducing inequalities

between men and women, in line with institutional guidelines and international good practices on inclusion and equality. In addition, the evaluation team suggested other questions (Table A3).

2.2. Methodological design

48. The evaluation considered all components of the initiative, including observation of other similar efforts underway, both governmental and partner led. The analysis aimed to understand the contributions made by REDESER and the co-financiers involved, identifying the extent of direct input from the initiative itself and from its partners.

49. The evaluation covered the entire project implementation region. Considering that the main study that defined the technologies for implementation in priority territories was conducted before the MTR, the evaluation covered the entire REDESER implementation period. Furthermore, based on a documentary analysis and the institutional and national political context, the evaluation considered a thorough assessment of the influences that occurred before implementation to contextualize the results achieved and the challenges faced.

50. The methodology ensured the active participation of communities, local organizations, the project team, the national government, and partner institutions, contributing to the strengthening of knowledge management and institutional learning.

51. The United Nations Evaluation Group (UNEG, 2016) Standards and Norms, the methodological and data transparency and traceability guidelines of the OED Evaluation Manual (FAO/OED, 2015), and the criteria and requirements of the Global Environment Facility (Global Environment Facility - GEF 2019) based on the methodology of the Organization for Economic Cooperation and Development (OECD), as shown in Table 4. The GEF evaluation reporting structure was adopted to develop analyses guided by the project's objectives, its components, and results for reversing desertification in the Caatinga. Financial and co-financing data were also observed in accordance with GEF Guidelines (GEF, 2019).

52. The evaluation results were made available to the Project Management Unit (PMU), FAO headquarters, the Regional Office for Latin America and the Caribbean (RLC), the FAO Representative as Budget Holder and the Lead Technical Officer (LTO), and the main stakeholders of FAO (intended users), GEF, MMA, national and regional co-financiers, regional organizations executing actions, and REDESER beneficiaries, in order to understand lessons learned from the implementation of the project and become a valuable input for future strategic initiatives related to desertification reversal, food security, and sustainable development. The evaluation team consisted of two external consultants hired by FAO, one a senior evaluation specialist and the other a specialist in project evaluations in the Caatinga.

Data collection and field mission

53. The results presented below come from Reports (deliverables) developed by LoA and contract executing institutions, Progress Reports (Project Progress Report, PPR, and Project Implementation Report, PIR), Project Documents (ProDoc), Annual Work Plans, and financial records.

Added to this there are direct field observations (primary data) collected in September and October 2025, based on semi-structured interviews with the coordinators and technical teams of LoA and contract executing institutions, implementers, and beneficiaries. Semi-structured interviews were also conducted with members of the project's Management Committee and other stakeholders, including managers of executing organizations and implementers. A total of 78 people were interviewed, including 26 women. Focus groups were held with the Araripe Foundation and in the communities of the Settlement Project (SP) Baixa Grande, SP São Vicente na Várzea, SP Nossa Senhora Aparecida II in São Mamede, SP Nova Esperança II, in Olho D'Água do Casado, and SP Olga Benário (Lagoa Comprida) in Piranhas, AL (see Appendix 2, list of interviewees). The triangulation of evidence allowed for the validation of information, the identification of convergences/divergences between different data sources, and guidance for the formulation of preliminary conclusions.

54. The information collected and analyzed contributed to direct responses to the evaluation criteria and to understanding the context and form of execution proposed through the LoA and contracts. Document analysis (secondary data) was key to understanding what was planned and what was executed by the project. In addition, observation of the REDESER indicators made it possible to understand compliance or gaps that may have influenced the achievement of the expected results.

55. The field mission was carried out in representative samples of the PAs, taking into account: i) the geographical distribution of the project activities areas; ii) the presence of women, youth, traditional peoples, and disadvantaged groups; iii) the distribution of resources allocated by REDESER; and iv) the diversity of scenarios for implementing the actions, from cases of complete success to highly challenging situations.

56. Territories and beneficiaries were visited and interviewed, based on the guiding questionnaire (Appendix 1) and local specificities. Special attention was given to ensuring that women, youth, traditional peoples, and disadvantaged groups were consulted. To interact with local communities, the evaluation team considered the Free, Prior, and Informed Consent (FPIC) Manual (FAO, 2016) and other FAO/GEF documents that provide guidelines on the approach and processes for working with beneficiary communities. In some cases, remote interviews were conducted with the support of digital tools.

57. The field analyses allowed for the cross-checking and verification of documentary evidence. The information, considered complementary, is presented in Appendix 4. Field reports, where a closer look at the reality of REDESER beneficiaries can be observed.

58. The evaluation considered the project's contribution to FAO Gender Equality Policy (FAO, 2020) and the GEF Gender Equality Policy (GEF, 2017). The involvement of women in REDESER actions was assessed using project indicators, reports from executing agencies, and direct observations of effective participation in the activity's implementation, including capacity building. All interviews concluded with the following key questions: 1. What was the greatest achievement? 2. What was the greatest challenge?

59. To safeguard confidentiality and data protection during the evaluation, ethical considerations followed the principle of "do no harm" and the LGPD (Law 13.709/2018). Data collection

followed the principle of data minimization, with storage on MSTeams or Sharepoint media and platforms. Images were taken in accordance with FAO team guidelines.

2.3. **Limitations**

60. Table 5 presents an analysis of the main risks faced in the evaluation and the mitigating measures adopted. Specific limitations faced include: i) difficulties in conducting the evaluation with activities still in progress and late receipt of reports (deliverables) from LoA implementers; ii) in this context, it was challenging to incorporate analyses into the present evaluation; iii) the cost-benefit analysis was limited by the lack of access to financial data/documents; iv) the unavailability of some actors for interviews (ABC, GEF Brazil focal point), on the grounds that their roles were of a different nature and that FAO and MMA were the institutions that could contribute to the assessment.

Table4. Risk analysis for the evaluation and mitigation measures adopted.

Risk identified	Brief description	Mitigation measures adopted
Lack of triangulation of sources and information	Conducting interviews only with direct beneficiaries or technicians, and not including critical perceptions from partners, local institutions, or communities not involved.	• Preparation of a stakeholder map to enhance the reach of contributions. • Triangulation with qualitative and quantitative data. • Expansion of the range of actors visited/interviewed.
Generalizations based on secondary data	Use only secondary data and do not consider field data and information	• Conducting a field mission in the four Priority Areas (PAs) of REDESER.
Sensitivity and confirmation bias	The tendency to record only successes or what reinforces the positive narrative of the project, ignoring relevant errors or limitations.	• Carrying out field missions. • Focus on successes and challenges. • Transparency, potentialities, and methodological limitations of the analysis.
Low adherence by institutions and potential interviewees due to the time that has passed	If the methodology did not ensure the effective participation of communities, the report could be perceived as "external" or technocratic.	• Inclusion of external and internal actors in the listening process. • Internal comparison of information between REDESER Priority Areas.
Difficulties in accessing territories.	Logistical barriers, especially in locations with poor infrastructure (as mentioned in the consultant's requirements).	• Careful planning of visits during the field mission with FAO team to ensure assertiveness in the agendas.
Lack of time for in-depth qualitative collection and analysis	The REDESER schedule called for deliveries in a few months, which could limit in-depth analysis. Not all REDESER actions had been completed at the time of the evaluation.	• Definition of delivery dates and expectations regarding the depth of reflections and analysis with FAO team.

Not having or using a project monitoring plan template	If the analysis was not based on concrete data (environmental, productive, social indicators), the reading could be subjective.	• Consideration of the use of REDESER indicators, with the possibility of including additional criteria to improve the quality of the analysis.
Absence of local visits to project implementation sites during the Mid-Term Review (MTR)	This would make it impossible to make comparisons or expand the geographical coverage and representativeness during the final evaluation.	• Intensification of the analysis of the results observed in the field, based on the statements of the actors, photographic records, and direct observation of reality, among others, bringing robustness to the evaluation.

3. RESULTS

3.1. Relevance

Rating: Highly Satisfactory (HS)

1. **Finding 1.** REDESER remained committed to the needs of the ASDs and national and international priorities (PNCD/biodiversity guidelines, GEF/UNCCD), despite political and institutional changes, different models of environmental governance within federal and state executive branches, re-structuring among public partners, and the impacts of Covid-19. Anchored in its original project design and key policy milestones such as the PNCD, the project promoted sustainable practices, knowledge management. climate resilience, conservation, and socio-productive inclusion in the Caatinga, while also adapting its implementation in response to Mid-Term Review recommendations incorporated by FAO and MMA.

Context of the Project

2. The political situation within the federal government is key to understanding REDESER. Prior to the project, there was a set of government policies to combat extreme poverty and promote development that served as the basis for the intervention, such as the Bolsa Família Program and the Brasil Sem Miséria (Brazil Without Poverty) initiative, which was also focused on socio-productive inclusion, with professional training, encouragement of self-employment, and support for productive activities for the low-income population.[4]

3. REDESER has been through four terms in the federal government. Between 2013 and 2016 with Dilma Roussef (Workers' Party - PT), temporarily from 2016 to 2018 with Michel Temer (Brazilian Democratic Movement - MDB), 2019 to 2022 with Jair Bolsonaro (Liberal Party - PL) and, currently, with Luiz Inácio Lula da Silva (2023-2025 - PT). With different backgrounds, these governments have guided national environmental policies related to desertification and deforestation in their own ways.

4. The project was developed in the wake of the Decree that established principles and guidelines for the National Biodiversity Policy (nº 4,339/2002), aimed at conservation, sustainable use, and benefit sharing, which guided the selection of Priority Areas in the biomes by MMA. Another key element was the National Policy to Combat Desertification and Mitigate the Effects of Drought (Law 13,153/2015), aimed at preventing and combating desertification and drought, recovering degraded areas, and protecting natural resources.

Consolidating its adherence to priorities in combating desertification

5. The project was approved by GEF in 2016 and signed in 2017, with implementation planned until 2020. Amid changes in the federal government, there were requests for changes to the project by MMA. FAO team was consulted regarding the inclusion of areas in the state of

[4] Social benefits are also noteworthy, such as retirement for rural workers, programs such as Water for All (supply), and the government also purchases food from small farmers through the Food Acquisition Program (PAA) and operates school meals through the National School Feeding Program (PNAE).

Maranhão. Between 2019 and 2022, the project faced significant delays due to institutional changes in the Federal Executive, associated with the context of the SARS-CoV-2 (Covid-19) pandemic. During this period, the Directorate for Combating Desertification, responsible for coordination at MMA, was abolished and its functions migrated to the Department of Climate and International Relations, requiring adaptation to new structures and flows, which affected planning and execution efficiency.

6. MMA suggested implementing REDESER through the Degraded Area Recovery Units (URAD) approach, which was not included because it was not part of the project design presented to GEF. In 2021, FAO and MMA adjusted a new Work Plan in which the Government proposed expanding the scope to include municipalities in northern Minas Gerais and the state of Bahia. FAO concluded that the expansion would not compromise the budget or planning, given the exchange rate appreciation that had increased the project's financial capacity, allowing it to absorb the territorial inclusion without prejudice to the previous objectives and schedule. However, it was agreed that activities would be limited to the implementation of distance training, in an online format, which ultimately did not materialize.

7. During this period, the lack of understanding of the project's priorities and themes at the federal level led it to focus on activities aimed at diagnosing Priority Areas and inputs on sustainable practices and reflections for improving the National Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of Greenhouse Gases – GHG (ERM, 2022). FAO team held discussions with MMA to demonstrate the importance of the project and ensure its continued implementation. The Ministry's guidance focused mainly on solid waste agendas, urban green areas, licensing for the exploitation of natural resources, and ecotourism.

8. In this context, the relevance of the project stems from its direct adherence to the structural needs of Areas Susceptible to Desertification (ASD). The project added economic value to the Caatinga through legal chains (legalized firewood production, animal production systems, non-timber forest products such as honey, fruit trees, and raw materials for pharmaceuticals), aligning good living conditions (Food Security and Nutrition), conservation, and income. Developed under GEF Cycle 5 (2010-2014), focused on promoting sustainable development and maintaining ecosystem services, REDESER contributed to halting and reversing land degradation. The project was an instrument for implementing this strategy, which has among its objectives to maintain or improve ecosystem service flows for coexistence and generate sustainable flows of forest ecosystem services in semi-arid areas (GEF, 2009).

9. Furthermore, it should be noted that Brazil has suffered from an increase in semi-arid areas and the emergence of arid areas susceptible to desertification. Technical surveys have identified the occurrence of arid areas, which can support planning to combat desertification and inform the formulation of public policies (TOMASELLA et al. 2023). REDESER responded directly to this issue by seeking to reverse desertification in areas identified as susceptible, constituting concrete mitigation and adaptation action in territories with sustainable management practices, in addition to promoting good practices that increase resilience in the face of more severe and frequent drought trends, in line with the expectations of GEF and UNCCD.

Return to Mid-Term Review

10. Conducted in 2023, the Mid-Term Review (MTR) had 16 recommendations, 5 of which were for the local team, referring to management, and another 11 for the implementation of the project with FAO and MMA. Eleven were accepted, including the expansion of dialogue with government actors, due to favorable changes in federal government guidelines, which would strengthen REDESER's actions. This contributed to the 2023 planning between MMA and FAO. Another recommendation, even though not provided for in the ProDoc, was to reinforce the focus on gender and youth, which was reflected in the design and execution of LoAs and contracts.

11. The recommendation for governance strategy was implemented through constant dialogue with executing institutions. No forum was established for ongoing exchanges between REDESER's executing organizations to address challenges and share best practices. This was partly because the implementation period for the LoAs and contracts varies between 2022 and 2025, and it was not possible to implement this arrangement during the project's lifetime. However, it should be noted that at strategic events, such as the Semiárido Show, there were exchanges on good practices and challenges within the scope of the project.

12. Partially or not accepted recommendations include expanding the team and reviewing FAO administrative routines and processes to streamline the project. The centralization of adjustments and corrections for the framing of process flows within the LTO´s unit and the headquarters office in Rome (Italy) partially compromised the agility in the execution of actions in the field, especially in areas where the executing institution had no previous experience. This challenge was ongoing for these institutions in the PAs, with the response being greater proximity to the local FAO team, with a view to making the necessary adjustments.

13. In summary, REDESER was relevant because, despite political and institutional changes and different arrangements in federal environmental governance, it remained dedicated to the issue of reversing desertification in the ASDs, meeting the socio-environmental needs of target groups, and was guided by public policy frameworks such as the PNCD, biodiversity guidelines, and the adaptation/mitigation agenda associated with the UNCCD and GEF. It was also able to adapt to the political scenario and dialogue without distorting the logic of intervention, signaling consistency and strengthening the technical and practical bases for sustainable development in the Caatinga.

3.2. Coherence

Rating: Satisfactory (S)

Finding 2. Internal consistency. REDESER was structured by connecting local intervention in the Caatinga to national and global agendas (GEF, SDGs, UNCCD/LDN), combining sustainable management, food security, and participatory territorial governance. The project generated specific results but also produced demonstration models and partnerships that position it as a benchmark for future interventions to combat desertification.

14. Coherence was understood as whether the project was consistent with other policies, strategies, and initiatives of GEF and UN themselves (internal coherence) and whether it was complementary, aligned, and/or coordinated with public policies and interventions by other actors

in the same territory (external coherence). The project was aligned with Cycle 5 of GEF and FAO CPF, articulating local technical interventions with capacity building and knowledge management actions, mobilizing civil society and government agencies to promote sustainable practices in ASD, with contributions to policies such as PAB and PP Caatinga.

15. Linked to GEF's 5th Cycle [5] (2010-2014), REDESER supported the strategy for degraded lands, optimizing ecosystem services for coexistence in semi-arid areas. Within the scope of FAO's CPF, the project was aligned with the result of strengthening institutional and technical capacities to promote ecosystem services and restore degraded areas. In conjunction with the Framework's results and resources matrix, the project contributed to the following indicators:

Table5. Correlation between CPF indicators and results achieved in REDESER.

CPF indicator	REDESER contribution
3.1.1.1 Number of municipalities impacted by Integrated Natural Resource Management (INRM) practices.	Fourteen municipalities targeted by the project were supported in the development of INRM, totaling 1,232,642 ha, exceeding the target of 904,142 ha.
3.1.1.2 Number of hectares of Areas Susceptible to Desertification (ASD) restored.	4,009 ha were targeted for restoration of degraded areas. The target was 30,000 ha.
3.1.1.3 Number of people with improved knowledge and skills on land degradation and desertification, disaggregated by sex and age.	348 people trained in seed collection, processing, seedling cultivation, and facility improvement (nurseries). In addition to 1,932 small producers trained in INRM.

16. In the period 2024-2027, in line with the Brazilian Government's Multi-Year Plan, REDESER has systematically contributed to the United Nations Sustainable Development Cooperation Framework (UNSDCF), in its Axis 3 Environment and Climate Change. For FAO Strategic Framework 2022-31, REDESER contributed mainly to the Programme Priority Area (PPA) focused on a better environment (BE) and better production (BP). Looking at this in conjunction with the Sustainable Development Goals (SDGs) in Brazil (UN. N.d.), the project contributed mainly through the integration of conservation, sustainable production, and socioeconomic inclusion. Based on the SDGs, the following results were observed:

Table6. Analysis of the project's contributions to the SDGs.

SDG/ PPA FAO	Findings
1 - Poverty eradication/ MP4, MN1, MN2	• Contributed to reducing socioeconomic vulnerability by strengthening family farmers and traditional communities in ASD.

[5] The GEF cycles correspond to planning and execution periods in which participating countries and partners define strategic priorities and allocate available financial resources.

	• Promoted climate-resilient income generation strategies, reducing dependence on unsustainable production practices.
2 - Zero Hunger and Sustainable Agriculture/ MP1, MP2	• Contributed to the implementation of agroecological/agroforestry practices, with greater productive stability for the semi-arid region. • Contributed to food security by combining sustainable productivity increases with natural resource management. • Strengthened the sustainability and qualified permanence of communities, contributing to the mitigation of forced migration to urban centers.
6 - Drinking Water and Sanitation/ MP2	• Supported soil and vegetation conservation measures that favor infiltration and protection of water resources, contributing to the reduction of scarcity risks. • Contributed to reducing erosion and silting, generating indirect effects on water availability and quality for communities.
8 - Decent Work and Economic Growth/ VM1, VM2	• Stimulated sustainable economic chains by strengthening rural work through training family farmers (with a focus on women and young people) and supporting demonstration units, increasing productivity, autonomy, and food security through agroecological practices. [6] • It boosted local economic growth by organizing and adding value to sustainable chains (AFSs, extraction of native fruits, and beekeeping/meliponiculture), improving marketing conditions and seasonal income with the inclusion of small producers. [7]
10 – Reducing Inequalities/ VM2	• Directed efforts towards territories/ASDs in the context of public policies to combat desertification, contributing to access to productive technologies and expanding technical capacities. • Strengthening local institutional and organizational capacities, amplifying the voice and presence of family farmers and communities as implementers of public policies. • It encouraged land use planning and management, integrated with climate and environmental risk management.
12 – Responsible Consumption and Production/ MP1	• Promoted sustainable production standards based on sustainable forest management, efficient use of inputs, and reduction of practices that can degrade soils in the Caatinga. • Based on Demonstration Units, it generated possibilities for replicating the rational use of natural resources, potentially influencing policies, markets, and consumption behaviors. • Demonstrated sustainable landscape management models that can be scaled up as a national reference for ASD.

[6] For more details, see Appendix D. Field reports. Records on the evaluation field mission

[7] For more details, see Appendix D, Highlights 3 and 6.

13 – Action Against Global Climate Change/ AM1, AM2, AM3	• Contributed to mitigation by promoting increased vegetation cover and carbon stocks in areas of the Caatinga under sustainable management, with the restoration of 4,009 ha. • It reinforced climate adaptation through productive practices compatible with the semi-arid region, reducing the exposure and sensitivity of populations. • It worked on the conservation and restoration of the Caatinga, focusing on biodiversity, ecosystem functions, and combating land degradation, by strengthening the implementation of 1,232,642 ha of INRM.
15. Protect, restore, and promote sustainable use of terrestrial ecosystems	• The project stands out for its contribution to the sustainable use of forests and combating deforestation and desertification in the Caatinga, seeking to reverse land degradation through the restoration of areas. [8] • Contributed to Land Degradation Neutrality (LDN).
17 – Partnerships and Means of Implementation/MN1	• It was relevant as a platform for cooperation between various actors, such as GEF, FAO, and MMA, local governments, and civil society, contributing to multilateral commitments to combat desertification and promote sustainable development within the framework of UNCCD, CBD, and UNFCCC.

17. It also contributed, within the scope of the UNCCD and the Land Degradation Neutrality (LDN) objectives, aimed at maintaining or improving ecosystem services, productivity, food security, and the resilience of populations (UNCCD. N.d.2), through synergies with the project's environmental and socioeconomic goals.

18. The INRM and SFM practices implemented by REDESER have contributed to the sustainable use and recovery of degraded areas, positioning it as a concrete mechanism for advancing toward degradation neutrality in PAs. By strengthening agroforestry systems and sustainable forest management, it has contributed to maintaining and expanding natural resources and productive capacity, in line with the LDN conceptual framework. The emphasis on collective land use arrangements, strengthening rural organizations, and generating evidence and replicable models creates synergies with the SDGs and the results expected by the UNCCD in terms of governance, policy coherence, and scalability of good sustainable management practices in the Caatinga.

19. Within GEF, the project served as a basis for discussion of potential initiatives in the dry corridor of Central America, in addition to Peru and Ecuador, making the initiative a model for dialogue with initiatives still under development for future implementation in similar geoclimatic scenarios.

Finding 3. External coherence. REDESER's current link to DCDE/SNPCT and its convergence with PAB-Brazil, PP Caatinga, and initiatives such as Caatinga Viva and Floresta Viva demonstrate its external coherence. The products generated (inventories, practices, local capacities) are directly linked to

[8] For further details, see Appendix D. Field reports and Project indicators in section 4 of this report.

instruments for combating desertification and restoration, positioning the project as a technical and territorial reference.

20. REDESER's results are aligned with initiatives such as Embrapa's Bem Diverso project and the Sergipe Project, implemented by the UNDP, both financed by GEF. Synergy is also identified with the Caatinga Sustainable Rural Development Program (PRS Caatinga) in Sergipe, coordinated by the Ministry of Agriculture, Livestock and Food Supply (MAPA) and executed by the Foundation for Sustainable Development (FBDS), with resources from the International Climate Fund (ICF) and Inter-American Development Bank (IDB). Thus, REDESER acted in a complementary manner, enhancing the results of Bem Diverso and PRS Caatinga. Even though it was not contemporary with them, due to political constraints, the project was consistent and important for continuing the discussion of solutions to combat desertification and promote sustainable development.

21. Considering the process of productive restoration and the promotion of public policies to combat desertification, REDESER is currently in dialogue with the Conecta Caatinga project coordinated by MMA, operating in Bahia, Piauí, and Pernambuco. With financial support from GEF, the project aims to conserve biodiversity and expand landscape connectivity in the biome through integrated land management. Also at MMA, there is the Caatinga Protected Areas (ARCA) project, which aims to strengthen conservation in the biome by expanding and improving the effectiveness of the National System of Nature Conservation Units (SNUC) management, with the creation and consolidation of conservation units in Bahia, Pernambuco, Paraíba, and Piauí, in dialogue with indigenous peoples and traditional communities whose territories are covered by the conservation units.

22. Considering the period from 2023 onwards, REDESER was allocated to the Department to Combat Desertification (DCDE), linked to the SNPCT/MMA. In 2024, the federal government began drafting the Brazilian Action Plan to Combat Desertification and Mitigate the Effects of Drought (PAB-Brazil). The plan was approved by the National Commission for Combating Desertification (CNCD) in September 2025, with a launch date set for December 2025. The Plan is considered the main instrument for implementing the National Policy to Combat Desertification, aiming to articulate strategies and actions to neutralize land degradation and mitigate the effects of drought over a 20-year horizon (until 2045). REDESER's relationship with PAB can be seen in its contribution to mitigation and coexistence with the semi-arid region, by developing capacities in communities to implement technologies aimed at sustainable use, environmental recovery, and food security.

23. In addition to PAB-Brazil and as one of the instruments for implementing the National Policy to Combat Desertification, PPCaatinga proves to be a relevant option for the reflections of REDESER decision-makers and executing institutions in planning future interventions in the Caatinga. PPCaatinga aims to eliminate illegal deforestation by 2030 and offset legal suppression and its emissions by strengthening forestry legislation, restoring native vegetation, and providing economic incentives for sustainable management.

24. The project is also aligned with Brazil's Nationally Determined Contribution (NDC) commitment (MMA, 2024), which aims to increase the share of sustainable bioenergy in the energy matrix

by 2035 by strengthening sustainable forest management, as well as contributing to the goal of restoring six million hectares of native vegetation for multiple uses throughout the national territory.

25. These policies are linked to the “National Movement to Combat Desertification and Drought. Land. Forest. Water." launched by MMA with the participation of the UNCCD (MMA, n.d.), its objectives are to increase public awareness of desertification and its impacts, promoting an agenda of mobilization, communication, and intersectoral debate to strengthen policies for coexistence with the Semi-Arid region and climate resilience. Partners in this initiative include, within the Ministry, the DCDE, state and municipal governments, and the UNCCD. Territorial priority will be given to the ASDs.

26. In addition, there is a FUNBIO support initiative called Ecological Restoration and Strengthening of the Restoration Production Chain in the Caatinga, with support from the BNDES, in the "Caatinga Viva" Call for Proposals, in the context of the Floresta Viva initiative. This initiative is aligned with the SDGs and contributes to the global goals of addressing and mitigating climate change, in addition to meeting the commitments of the Convention on Biological Diversity under the Kunming-Montreal Global Framework. In October 2025, the Ministry of Agrarian Development (MDA) announced the preparation of a call for proposals, Da Terra à Mesa (From the Land to the Table) (BRASIL, 2025), specifically for the semi-arid region, which should promote practices convergent with REDESER.

27. In reviewing official documents, no direct synergies between other projects or programs and REDESER were found. However, in dialogue with key actors, such as the team from the Department to Combat Desertification and Mitigating the Effects of Drought (DCDE/MMA), the project is considered a model in terms of its objective. It was not possible to determine whether it will be used as a basis for future interventions in the Caatinga by external partners. This could lead to territorial and thematic overlaps, which may reflect on the continuity and strengthening of the actions initiated, but replicate activities that have already been carried out within the scope of REDESER.

3.3. Efficiency

Rating: Moderately Satisfactory (MS)

Finding 4. The decentralized implementation arrangement via LoAs and contracts, combined with significant contributions from co-financiers, albeit less than initially planned, shows that REDESER made efficient use of available resources to generate qualified diagnoses, promote INRM, forest management, and restoration in PAs, while maintaining a significant contribution to overall environmental benefits.

28. REDESER converted a smaller-than-planned budget into technically qualified deliveries. Implementation faced structural constraints that limited the cost-time-result ratio. The decentralized arrangement proved effective in ensuring capillarity and efficient use of GEF resources, but not fully in terms of timeliness and adaptation.

29. Efficiency was observed in terms of understanding the production of results in an economic manner and within established deadlines. The evaluation was not intended to be a financial

audit of products and services. Thus, issues related to economic efficiency in terms of results, *trade-offs* (concessions or losses-gains between pursuing one opportunity and renouncing another) and timeliness in the project were addressed.

30. According to ProDoc (Table 3 and Appendix 3), the project would receive US$3.9 million in funding from GEF to FAO, in addition to US$15.7 million from 18 co-financiers, for a total of US$19.7 million. The values of LoA[9] and contracts totaled R$10.6 million (or US$1.97 million)[10] , which were committed by GEF funding.[11]

31. Based on the 2025 PIR, GEF amount was maintained, added to 16 co-financiers – including Coopercuc and EFASE – totaling US$11.2 million in co-financing, of which US$8.05 million was disbursed, leaving the project with a total budget of US$11.9 million, or 79% of the amount provided for in the PIR. This amount was subdivided among the five components, corresponding respectively to 1 to 5, 26.1%, 31.1%, 19.6%, 14.2%, and 9%. The failure of some co-financiers to provide the funds envisaged in the ProDoc led to a reduction in expected contributions, limiting the capillarity and institutionalization of the results. Of note are the contributions of civil society co-financing partners in activities converging with the project, as well as the states of Paraíba and Rio Grande do Norte.

Table3. REDESER financing and co-financing, based on ProDoc and PIR in US dollars

Planned in ProDoc		**Forecast and executed according to PIR 2025**		**Variation**
Co-financier/ GEF	**Estimated amount**	**Amount confirmed by co-financier - endorsement/approval + GEF**	**Amount disbursed by the partner - 01/23/2026 + GEF**	
Total co-financing	**15,766,666**	**11,233,332**	**8,052,427**	-28.32
GEF support	**3,930,155**	**3,930,155**	**3,930,155**	0.00
Total	**19,696,821**	**15,163,487**	**11,982,582**	-20.98

32. The territorial interventions carried out through LoA and Contracts supported the sustainable management of the Caatinga through agroecological and agroforestry practices, forest recovery, beekeeping/meliponiculture, and the coordination of biomass chains. Each institution

[9] At FAO, LoA (or *Letter of Agreement* - LoA) support formalization - through a bilateral legal instrument - for contracting an Eligible Entity to provide specific services to a project. This instrument ensures legal certainty and operational clarity, with identified services/deliverables, deadlines, budget, and responsibilities. This instrument is used when the expected services are not available on the market, allowing for the execution of non-commercial services.

[10] US$1.00 is equivalent to R$5.39 in October 2025.

[11] Considered a large-scale project in GEF because it has funding above US$2 million, it had co-financiers, i.e., partners who add non-financial resources to the project. FAO – executing agency of GEF resources – played the role of partner agency, focused on the formulation, management, and implementation of the GEF project.

focused on specific PAs, namely: ACB and Araripe Foudation in Chapada do Araripe (CE); Araripe Foundation and EFASE in Uauá and Monte Santo (BA), with Fundo de Pasto communities; AGENDHA in the Xingó territory (AL); Diaconia in Seridó Potiguar and the Araripe Foundation in Seridó Paraiba. For SFM, APNE carried out diagnostics and the company Verde Vida acted directly in Seridó (RN/PB); and the Araripe Foundation in Chapada do Araripe. The Ekos Institute acted targeting all PAs.

33. Key to the project was the decentralization of project execution with LoAs and contracts by FAO, which ensured excellence in the quality of territorial diagnoses and identification of the beneficiary public for REDESER interventions. The prior knowledge of the territories by most of the executing institutions enabled REDESER to strengthen knowledge networks on production and access to public policies. Between 2022 and 2025, the periods of the LoAs and contracts ranged from 5 to 18 months each and were intended to support diagnostics, improve databases, conduct courses and exchanges, develop and implement management plans, exit strategies that ensured environmental conservation and sustainable income generation for local communities, and technical reports (deliverables).

34. The costs of activities carried out in REDESER were observed. Regarding multiple-use forest management and considering the work developed by Verde Vida, the estimated cost for implementing areas was US$243/ha (or R$1,341.00) in Seridó (PB). In Seridó (RN), the cost reaches US$384/ha (or R$2,100.00), considering a 15-year cutting cycle. This condition can promote income generation in the short term, but it can make management unsustainable in the long term. The costs observed respond efficiently to technical and operational aspects of management, but no estimates were observed for administrative procedures for the renewal of exploitation licenses and other legal requirements, remuneration of the technical manager, and expenses related to the training of beneficiaries.

35. Based on LASSANCE (2025), TNC (2018), and Instituto Escolhas (2023), approximations can be observed for the identification, implementation, and maintenance of the restoration of degraded areas. In the TNC (2018) study, implementation (inputs, planting, and soil corrections) costs between US$200.0 and US$2,720.00. In this context, it is noted that the project supported the restoration of 4,009 ha (13.36% of the 30,000 ha target).

36. Considering only GEF financial support for the restoration of 3,016 ha, the average cost was US$255/ha, close to the minimum value observed above, which contributed to seed production and planting. The labor costs of the communities, maintenance, and monitoring were not considered here. In dialogue with the contract executing institutions, it was observed that, considering the process of local mobilization, identification and mapping of areas, preparation of technical projects, and setting up seed nurseries, the cost can reach around US$9,000/ha (or R$50,000/ha). If adequate fencing to prevent animal intrusion is also considered, the cost may increase by around 30%.

Finding 5. Decentralized implementation via LoAs and contracts, combined with the necessary (slow) administrative flows and difficulties in raising awareness among part of the beneficiary public (with low initial adherence) resulted in obstacles to meeting deadlines, impacting the implementation of activities during the dry season.

37. The decision to decentralize project implementation through LoAs and contracts required FAO team to work more closely with the implementers to maintain alignment with what was planned in these mechanisms. Some of the implementers faced challenges in identifying and raising awareness among the target audience to enable work in some PAs (Seridó RN and PB, Xingó) where they had no previous direct experience.

38. Decentralized implementation made the project feasible, and the subdivision of Seridó (RN/PB) facilitated its local implementation. However, administrative obstacles in contracting caused delays between implementers and FAO, postponing resources and deliveries in the PAs, affecting planting windows due to the seasonality of the rains. Some of the impacts were mitigated by rescheduling and adapting activities in the contracts. In the LoAs, however, rigidity and difficulties in accountability led to the return of funds.[12]

39. Regarding global environmental benefits in GEF, REDESER joined existing public policy initiatives – as noted in Coherence – but it is still a challenge to think about gains of scale from project initiatives beyond the PAs served. Here, we notice the importance of the public sector and the organizations executing LoAs/contracts in using the results to promote complementary initiatives that bring gains of scale that catalyze global environmental benefits by ensuring ecosystem restoration combined with programs that promote income and Food Security and Nutrition.

3.3.1. Implementation and execution

Rating: Moderately Satisfactory

Finding 6. The implementation and execution of REDESER by FAO demonstrated technical capacity and close management with satisfactory responses. However, the absence of a channel integrating partners limited synergies and showed that the sustainability of actions is more associated with new initiatives than with the systematic incorporation of results by public authorities.

40. As already highlighted in the Relevance criterion, in the initial phase of the project, FAO faced challenges related to changes in the federal government. Guided by the objective, results, and governance in ProDoc, the project was able to maintain the use of GEF resources as planned. During implementation, coordination by the Secretariat for Combating Desertification (SECD/MMA) team was key to maintaining dialogue with federal actors in the states, such as SFB and IBAMA, on topics of interest to the project, such as SFM. At the end of the project, it was observed that the sustainability of the actions was seen by the partners, predominantly, as a demand for new interventions, with little absorption of the results by the public authorities for the continuity of actions.

41. According to PIR 2025 and field interviews, risks were observed that could have impacted on the efficiency of the project. These risks, along with responses, are presented in Table 8.

[12] Information recorded in interviews.

Table7. Risks with potential impact on the efficiency of REDESER.

Observed risk	Project responses to risk
Climate change, with changes in the dynamics and frequency of drought events and reduced rainfall.	Adopted good practices aimed at responding strategically to INRM and forest management, promoting methods that conserve soil and water. In addition, these practices supported local communities' strategies for coping with drought by promoting adaptation to the effects of adverse conditions in the semi-arid region, while encouraging the sustainable use of natural resources and improving quality of life. Furthermore, it contributed to the training of state environmental agency teams to regulate timber SFM in the Caatinga.
Pressure from agribusiness, resulting in increased deforestation in vulnerable transition areas.	It supported the implementation of agroforestry systems and promoted soil and water management techniques, aiming to increase productivity and guarantee land use and occupation. In addition, it trained teams from state agencies to enforce environmental legislation and develop Sustainable Forest Management Plans, with a view to consolidating the use and occupation of the territories of traditional peoples and communities, such as *quilombolas*.
Co-financiers/partners do not comply with financial and/or non-financial counterpart contributions.	The local FAO team engaged with co-financiers to reinforce their commitments to the project, including contributions as non-financial counterparts.
Changes in national governance influence the conduct of the environmental agenda and the fight against desertification.	To mitigate risks, the local FAO team worked closely with MMA for the planning and execution of actions/activities, in addition to detailing processes to ensure corrective actions. Added to this is the dialogue with the LTO and the *Better Environment Coordinator*, ensuring compliance with aligned activities and resolution of doubts.

3.4. Effectiveness

Rating: Moderately Satisfactory (MS**)**

42. REDESER achieved most of its expected results and exceeded some of its targets, incorporating gender equality as a cross-cutting theme. Through diagnostics and local partnerships, it enabled production, soil and water conservation, and the recovery of degraded areas. The project developed regulatory subsidies and supported the coordination of relevant networks in the semi-arid region. However, it was observed that, to maintain gains and scalability, technical assistance, greater appropriation by public authorities, and post-project arrangements for financing are still necessary.

43. The project operated in areas located in municipalities with constant growth in deforestation. Considering 2018, prior to REDESER's interventions, and 2024 (the last year for which data is available), there was a 69% increase in deforestation in the target municipalities. This demonstrates how necessary it was to act in these territories of the Caatinga, presenting sustainable alternatives to the exploitation of nature.

Table4. Evolution of deforestation in municipalities in REDESER priority areas.

Municipalities	State	Deforestation in 2018 (km^2)	Deforestation in 2022 (km^2)	Deforestation in 2024 (km^2)	Cumulative 2018-2024 (km^2)
Delmiro Gouveia	AL	4.68	2.21	8.54	15.43
Casado Spring	AL	3.53	1.60	6.45	11.58
Piranhas	AL	2.98	3.23	16.74	22.94
Monte Santo	BA	26.47	37.50	56.33	120.30
Uauá	BA	43.00	27.71	45.13	115.84
Barbalha	CE	3.72	4.42	5.39	13.53
Crato	CE	7.31	10.61	16.28	34.20
Garden	EC	2.92	3.87	11.23	18.02
Santa Luzia	PB	1.83	3.71	1.19	6.73
São Mamede	PB	4.51	4.88	4.98	14.37
Várzea	PB	1.55	2.75	1.80	6.10
Carnaúba dos Dantas	RN	1.19	0.87	1.26	3.33
Ecuador	RN	1.17	1.25	2.64	5.05
Pairs	RN	3.82	5.85	8.95	18.62
Santana do Seridó	RN	1.52	0.71	1.03	3.27
Grand total		**110.19**	**111.16**	**187.94**	**409.29**

Source: MapBiomas Project – Collection 10 of the Annual Series of Land Cover and Land Use Maps of Brazil, accessed on 11/20/2025 via the link: https://brasil.mapbiomas.org/downloads/

44. To strengthen participatory mechanisms and implement sustainable natural resource management practices, the interventions planned by REDESER in the Priority Areas followed a hierarchy in terms of density of studies, research, and budget allocation: 1. Timber Forest Management (regulations, training, and preparation of Management Plans; inventories); 2. Productive recovery of the animal component (improvement of natural pastures, fences, AFSs with forage, soil and water conservation); 3. Non-timber forest products (inventories, extraction of fruit trees, diversified backyards and AFSs, important for women); 4. Non-timber forest products linked to the production of raw materials for pharmaceuticals. Activities in the first group carried out in Bahia are contrary to the local logic of combating the use of timber products in areas of common use (pasture lands), where there are serious land conflicts. In Xingó, rightly so, actions on timber products were not planned or carried out.

COMPONENT 1. Promoting Integrated Natural Resources management (INRM) in Production Landscapes

Finding 7. REDESER implemented INRM actions in Caatinga PAs based on territorial diagnosis, in partnership with local organizations - co-financiers and LoAs and contracts executing institutions, strengthening extractivism, agroecological production, recovery of degraded areas, and mobilization of family farmers and traditional communities.

45. The project exceeded the INRM area target, reaching 1,514,557 ha (167.51%). INRM practices/methodologies were applied in 100% of the target areas and disseminated in training actions. The training of producers exceeded the target by 23.29% (1,932 people), with the prospect of exceeding the target by the end of the course. Gender equality is also noteworthy, with 48.9% of the supported properties managed by women (above the 30% target).

46. In order to expand INRM to the landscape scale, it was essential to carry out a Diagnosis of Priority Areas (PAs) to ensure the territorial basis for the best implementation of REDESER. The diagnosis carried out by APNE proposed a reading of interventions aligned with the territorial and cultural context. In addition, the prioritization of social technologies opened the possibility of adopting practices identified by other executing partners, based on local specificities.

47. In Chapada do Araripe, with ACB, good INRM practices were strengthened in family farming units, with a focus on food security, community marketing, and agroecological fairs. The Araripe Foundation promoted productive planning and chains for the extraction and commercialization of native fruits and *fava d'anta*, including *quilombola* territories and users of the Araripe National Forest (FLONA). The women beneficiaries expressed their gratitude to the project and the Araripe Foundation for their continued support. The equipment provided by REDESER facilitated collection and reduced the workload. Extraction has become part of the communities' identity, which they proudly affirm. The activity is an important source of seasonal income, and despite fluctuations in product prices, there have been improvements in marketing, with recognition from organizations.

48. In Uauá and Monte Santo (BA), with implementation by the Araripe Foundation complemented by a LoA with ACOTERRA/EFASE, actions were implemented to reduce environmental

degradation from livestock farming, with sustainable forage production, incentives for the extraction of Non-Timber Forest Products, and soil and water conservation practices.

49. In Xingó, AGENDHA implemented actions to reduce degradation caused by livestock farming, with the recovery of Legal Reserve areas integrated into sustainable forage production, called Rampas, combined with soil and water conservation practices, called *Barrocais*. Using agroecological methods adapted to the local context and productive diversification, animal production was integrated with food security to reduce the effects of climate change and strengthen the resilience of families and the logic of coexistence with the Semi-Arid region. AGENDHA worked with 30 family farmers from five Agrarian Reform Settlement (PA) projects and one from the National Land Credit Program (PNCF).

50. In partnership with family farmers, the project implemented social mobilization strategies, meetings to present results and exchange experiences, involving beneficiary families and communities, government representatives, and federal and subnational institutes. The Alagoas Network for the Recovery of Degraded Areas (Rede ARADAS) was created. Participatory strategies for the recovery of degraded areas were promoted with a view to ensuring fodder production for cattle, goat, sheep, and poultry farms, valuing traditional knowledge and integrating sustainable practices that regenerate the soil and prevent erosion.

51. The project's technical actions were carried out based on agroecological Technical, Social, and Environmental Advisory Services for Agrarian Reform (ATES) strategies. Management practices were implemented mainly through collective efforts, in the form of field days. For dissemination and learning, a social communication strategy was implemented for internal and external audiences.

52. Monitoring the actions closely with farmers was vital to the success of the project, requiring ongoing technical assistance. In addition, AGENDHA acted as a direct advisor to farmers and their organizations, maintaining partnerships with key research and extension entities involved in the process. AGENDHA saw potential for systematizing technical knowledge and conducting research that could provide scientific support for its work, including in the areas that received intervention. Addressing this demand was the focus of the entity's participation in the Symposium on Combating Desertification, held in late October 2025. AGENDHA's experiences within REDESER were systematized for inclusion in the WOCAT Platform.

53. In Seridó, Rio Grande do Norte, through a contract with Diaconia, the project promoted sustainable management activities by implementing or strengthening AFSs with forage production and promoting beekeeping and meliponiculture. Fifty families were included, including 24 women and two young people, with support from EMATER. It is noteworthy that women showed interest in raising stingless bees, especially because of the economic autonomy, income generation, and food security aspects.

54. As a strategy to expand the project's reach, a solidarity revolving fund for meliponiculture was created, formed from the division of bee boxes among beneficiary families and their neighbors. Considering the gender approach, meliponiculture was strengthened through an activity plan aimed at knowledge, communication among beneficiaries, and guidance for actions after the end of REDESER.

Finding 8. Challenges related to the selection of areas and beneficiaries, deadlines, administrative procedures, land and structural public policy limitations, resistance or caution in adopting new practices, and external impacts (such as energy and mining projects) required strong community mobilization and close technical monitoring to make the actions feasible.

55. In Xingó, given the territorial and social heterogeneity, the selection of beneficiary areas and families was a challenge because AGENDHA did not have detailed knowledge of the territory. This was overcome through consultations and validations with partners from social movements and regional networks, including the Landless Rural Workers Movement (MST), from a sociopolitical and agroecological perspective.

56. In Araripe, beneficiaries pointed out that REDESER brought hope. The greatest legacy was learning technologies to optimize productivity, supporting income generation. Technological components (mulching, water reuse) that were not prioritized in the initial diagnostic phase and identification of sustainable practices appropriate to REDESER were used, which shows the importance of detailed diagnosis and the proposal of technologies relevant to the local scale. The feasibility of expanding the proposed practices to neighboring areas is uncertain. According to LoA executing organizations, there were difficulties in identifying beneficiaries, and some were replaced. Neighbors see AFSs as "crazy," but they visited them, curious about the success of the initiative.

57. To implement AFSs, implementers had to raise awareness among beneficiaries, as some of the practices were unknown. Greater acceptance and success were achieved when the project activities—practices with which they were familiar—were combined with the economic objectives of the production units and the flexibility to compose AFSs with forage, fruit, and bee/melipona species.

58. In the PAs of Uauá and Monte Santo, with the low implementation of structural public policies and slow progress in land titling, the importance of GIAHS was consolidated. According to beneficiaries, REDESER's focus on environmental and human sustainability with income generation, and Food Security and Nutrition was correct and necessary, and helped to raise the profile of the caatinga biome. However, it should be noted that the land issue is still central to consolidating *fundo de pasto* areas. There was also a perception that REDESER directed most of its resources to support activities (general diagnostics and studies on SFM), to the detriment of core activities directly related to the implementation of technological practices with beneficiaries in the territories.

59. For all REDESER PAs, the greatest challenges were related to the short time frame for executing what had been planned and the impact of administrative issues on the field schedule, as well as fundraising to continue the actions. The execution period ended before the planned technical actions were completed, impacting the planting season. The results of the actions were seen immediately. Beyond the project's goals, what remained was the supportive presence of the technical teams in the communities, which also demonstrates the confidence of farmers and enables the continuous improvement of local and regional diagnosis. In addition to learning about technologies, opportunities for technical support and coordination with partners were highlighted, such as access to markets and meliponiculture in Monte Santo. In

addition, in the EFASE area, the results include the trust of farmers in young technicians and women.

60. Farmers demonstrated intention and, in part, the conditions to continue all practices on their own. However, some beneficiaries consider that some training is still insufficient (e.g., in meliponiculture). This situation is in line with the understanding of some actors, such as FA, as cultural resistance to the adoption of new practices. In contrast, other farmers see the maintenance of usual practices as a mechanism for defense and guaranteeing food security and income. In this context, the challenge is to provide education focused on the adoption of technologies, respecting the knowledge of the elderly, while promoting innovation. These issues were addressed through community involvement and collective efforts, the implementation of courses and field days with an educational emphasis, the inclusion of management practices in the curricula of the EFASE Rural Workers' Union and local ATER actions, as well as the search for coordination with city halls and state agencies.

61. In Seridó, it was necessary to rely on the support of leaders from rural workers' unions, public agencies such as EMATER, and rural development councils in the municipalities to present the project and develop activities for family farmers. The same occurred in the Quilombo Boa Vista dos Negros area in Parelhas, so that they could understand the importance of having support in traditional communities. In RN, the company Verde Vida, which began SFM work before Diaconia, supported the organization in identifying potential REDESER beneficiaries.

62. Also, in Seridó (RN), the implementation of fifty AFSs became a challenge for technical monitoring and quality maintenance. The project was fundamental in overcoming gaps in access to information and practices related to production, management, and soil conservation. However, the challenge of technical monitoring on the properties remained.

63. Also, the size of the areas and the time required for management limit the possibility of sustainable firewood production. Thus, a potential source of income, particularly in the area near the mountains on the border between RN and PB (Santa Luzia region, PB), is the income from loan agreements between family units and wind power generation companies and, to a lesser extent, solar power companies. Some of the families in the project are in areas of interference and some have already ceded areas for the installation of towers/generators.

64. As in other PAs, the impacts of renewable energy projects (especially wind power) and mining are also present. Mining causes environmental impacts and social problems such as the invasion of community areas. According to local reports, loan agreements signed by companies with family farmers can restrict land use and hinder access to rural credit (PRONAF), despite the appeal of fixed income with little effort. There are also complaints of continuous noise disturbance from wind turbines near homes and possible effects on animal production, but these impacts could not be validated by the assessment team. Testimonials indicate that some farmers join in the expectation of "easy income" and, upon realizing the disadvantages, find themselves bound by contracts that are difficult to reverse.

COMPONENT 2. Promoting Multiple-use Forest Management

Finding 9. REDESER mapped areas with potential for multiple-use forest management, supported the reactivation and development of SFM plan in areas such as Seridó and Araripe (approximately 16,645 ha of potential), promoted technical training, coordinated the development of CONAMA Resolution 507/2024 and the production of the book "Forest management in the Caatinga: 40 years of experimentation," consolidating technical references for forest management in the biome.

65. The project achieved 28,664.93 ha in sustainable forest management, exceeding the target by 191%. There was consistent progress in the identification, evaluation, and replication of SFM practices, including expansion in Araripe with additional support. The guidelines and protocols were widely disseminated: 158 agents and institutions participated in training and related events, exceeding the target of 100 forest agents. These results strengthen the adoption of SFM by local agencies, technicians, and networks.

66. REDESER mapped the main local challenges and barriers (technical, socioeconomic, and institutional) to sustainable forest management, integrating climate, land use for biomass, production conditions, land tenure structure, such as Settlement Projects, Quilombola Territories, and Conservation Units, in addition to dynamics related to Gross Domestic Product (GDP) and the Human Development Index (HDI).

67. In Seridó (RN), in an activity that was still ongoing during the evaluation, Verde Vida Engenharia executed a contract to strengthen the SFM, aiming to supply forest biomass. PAs interested in reactivating plans received support, totaling 3,076 ha. The idea was to contribute to increasing the local supply of forest products based on SFM Plans. It should be noted that in Araripe, 8,892.57 ha were identified and approximately 4,500 ha in the SFB forest inventory on pastureland.

68. Verde Vida used the 15-year parameter instead of the ideal cutting cycle of 22 to 30 years, as indicated in the technical parameter. The company argues that adopting a cutting cycle considered too long could affect the economic and social viability of the SFM Plan. In Chapada do Araripe, the Araripe Foundation was implementing SFM in settlements. At the end of this report, Appendix 4 (Field Reports) presents a summary of the field mission.

69. To strengthen local capacities in sustainable forest management activities, short courses were held for SFM Plan beneficiaries, covering planning, inventory preparation, and other technical elements, as well as legal procedures for regularizing the Plan and its productive integration.

70. Also noteworthy is the support for the development and consolidation of the book “Forest management in the Caatinga: 40 years of experimentation” (BRAZIL, 2024). This publication consolidates experimental research on forest management in the Caatinga, providing the technical and scientific basis for legislation and practices for the sustainable use of wood in the Semi-Arid region. It enabled the systematization of scattered data from Experimental Units of the Caatinga Forest Management Network (RMFC) as a reference for decisions. Thus, the project contributed to applied knowledge, aiming to guide technicians and managers, governance processes of the Caatinga SFM, and expand the capacity to replicate evidence-based models in the biome.

Finding 10. The knowledge generated is still not widely used by public authorities, and the consolidation of SFM faces restrictions in terms of market conditions, implementation time, technical capacity of beneficiaries, and competition for land use, with only part of the areas remaining as potential.

71. The knowledge produced by APNE was recognized by the executing partners, as well as the public. However, the identification and prioritization of practices to be implemented, marked by the impact of the pandemic, was also a challenge for the diagnosis, based on secondary data. The calculation of indices for prioritization was partially validated by checks with a group of actors, but without reaching the residents of the territories, thus not accurately reflecting the situation in the territories. As a result, practices with low prioritization in the initial study proved to be important in specific territorial contexts. Some territories received more attention than others, which is partly related to the difficulties faced with the effective implementation of REDESER, including changes in the composition of the project's Priority Areas.

72. In RN and PB, the adoption of SFM faced obstacles related to scarce labor, low demand from the ceramics industry for SFM firewood, price variations, and weak regulatory pressure on illegal exploitation, in addition to competition from wind and photovoltaic energy. This scenario hinders the operationalization of the Plans and reduces the incentive for regular management. Even so, the project supported the identification of 26 potential areas, with 8 showing interest. It is also noted that future carbon credit dynamics may influence the supply of biomass in the Caatinga.

73. The implementation of SFM Plan in Agrarian Reform Settlements presented a challenge for beneficiaries to adequately grasp the technical and management aspects of the projects. This required training efforts that REDESER did not have time to carry out. Knowledge of SFM, as per regulations, was poorly developed among representatives of rural associations, rural workers' unions (STTR), and settlements. Therefore, it is important to coordinate support from other actors, including private agents, for the effective implementation of the SFM Plan developed and/or reactivated with the support of REDESER. This situation also indicates the demand for inclusive public policies for the sector.

COMPONENT 3. Forest and Landscape Restoration (FLR)

Finding 11. Based on the APNE diagnosis and the work of AP1MC, REDESER developed and implemented recommendations for the production and management of native seeds and seedlings, mapped seed banks and native species, and supported technical guidelines for landscape restoration and connectivity, creating a common knowledge base for use by managers, organizations, and communities.

74. For restoration with native species, the result was 4,009 ha, corresponding to 13.36% of the target (30,000 ha). Progress was made in improving 12 Community Seed Houses/Banks and implementing 12 nurseries, in addition to training a total of 2,550 people (159.3% of the target) with co-financing. The actions were distributed across different territories, combining restoration, AFSs, and specific strategies such as RAMPAS.

75. Based on the diagnosis carried out by APNE, REDESER observed the recommendations for seedling and seed production, which guided the actions of other implementers. AP1MC

contributed to improving the production of native seeds and seedlings for the restoration of forests and degraded lands in ASDs, based on a survey that identified 38 species and 522 native varieties, generating a public database and interactive map. In addition, existing seed houses were mapped, identifying 875 communities with seed houses/banks in 306 municipalities.

76. In Xingó, AGENDHA implemented practices for the protection and recovery of riparian forest areas, associated with soil and water conservation. Through forage AFSs and the protection of Legal Reserve areas, it promoted restoration and protection.

77. Aiming to standardize approaches and accelerate the adoption of restoration solutions on a territorial scale, the project was developing practical guidelines and recommendations for restoring forests and landscapes during this assessment, considering opportunities for connectivity between ecosystems in all the project's protected areas. This work aimed to consolidate the project's land use analysis, as well as propose a matrix for integrating public policies and good INRM practices and a restoration and connectivity strategy specific to the PAs. The creation of guidelines will bring the challenge of converting them into land agreements, licenses, and productive arrangements, including the recovery of areas in contexts with incomplete registrations and overlaps. Poor governance and local budgets may pose risks to the sustainability of references built into the project.

78. Maintaining up-to-date and socially legitimate data is a challenge in the post-project phase. Connectivity and prioritization change with new pressures (drought, fire, markets). In addition, aligning actors (public, private, communities) and avoiding conflicts require continuous facilitation and clear communication about criteria and opportunity costs (trade-offs).

COMPONENT 4. Knowledge Management, Capacity Development, and Awareness-Raising

Finding 12. REDESER promoted training, exchanges, and knowledge management actions, strengthening communities in *Fundo de Pasto* (for example, generating subsidies for the GIAHS application), based on conservation, management, and local governance practices. However, the project's limited coordination with local and regional networks left open the consolidation of institutional routines and the deepening of monitoring.

3.4.1. Capacity building

79. Capacity building reached 825 trained people. Between networks and knowledge management, initiatives such as the National Network on Desertification and Aridity (RENDA), Coordination for the Recovery of Degraded Areas (ARADAS Network), Network of Guardians of Native Bees of Seridó, and Network of students in the INRM course were created and/or strengthened. In terms of dissemination, 78 materials were produced, including events and audiovisual products, reinforcing the reach among local audiences, relevant content for the repository, and exchange via WOCAT, with the addition of new experiences planned.

80. The project facilitated discussions and exchanges between public technicians from IBAMA, the Chico Mendes Institute for Biodiversity Conservation (ICMBio), INCRA, and state environmental agencies on Conama Resolution 507/2024, aimed at establishing technical parameters

to support the preparation, presentation, evaluation, and execution of the Sustainable Forest Management Plan (SFM Plan) for timber (MMA, 2024). The Resolution facilitates management activities by updating the period, previously defined as 15 years per-cutting cycle, calculated based on local productivity. In the semi-arid region, this is necessary due to shorter periods and to reduce pressure on stocks, potentially reducing overexploitation and improving production sustainability.

81. Regarding capacity building in Seridó (RN), the following training courses were held: a joint training effort on irrigated agroforestry systems, a workshop on stingless bee breeding, involving 30 participants, and a workshop on the processing of products from meliponiculture, involving 45 participants.

82. The participatory actions generated learning, expanded recovered areas, and integrated technical assistance, monitoring, and continuing education. Technical monitoring demonstrated the effectiveness of the methodologies adopted. ATES and monitoring activities expanded families' mastery of agroecological and socio-environmental practices appropriate to the Semi-Arid region, reinforcing protagonism and local autonomy. For example, in Xingó (AL), there were significant advances in the implementation of practices and technologies for the Recovery of Degraded Areas (RDA), in strengthening local capacities, and in the sustainability of family agroecosystems.

83. The creation of the ARADAS Network was a strategic milestone for institutional integration and the continuity of environmental recovery actions. It strengthens cooperation between public agencies, educational and research institutions, and civil society organizations, creating a permanent space for dialogue and planning.

84. Operational challenges were observed related to the time available for monitoring and climatic variations that affected schedules. This was mitigated with continuous support from the executing institution and active participation from families, preserving the consistency of monitoring. The results confirm the relevance of coordination between planning, technical monitoring, social participation, and interinstitutional cooperation for the success of RDA. The practices implemented demonstrate the potential of social technologies adapted to the Semi-Arid region to promote productive restoration.

85. In Xingó, with a view to strengthening local capacities and promoting technical and social sustainability, seminars and training courses were held (AROUCHA, 2025a). The first was dedicated to mobilizing action for the project, strengthening the participation of women and youth. The training courses focused on sustainable forest management plans, involving legislation, multiple use, and identification of areas for management. Together, these training sessions reached 148 people, including 58 women. Field activities were also promoted, involving 54 participants, including 36 women, and there was dialogue with students from the Teaching Department of the Federal Institute of Alagoas (IFAL).

86. In Seridó (RN), training courses on Sustainable Silvopastoral Management in the Caatinga were held for settlements, with a total of 18 participants (FERREIRA, 2025). In Seridó (PB), the project provided for the implementation of 53 AFSs with families, totaling 25 ha with the planting of forage palm and *mandacaru*, including technical monitoring. In addition, there

was training on beekeeping and meliponiculture, with about 50 beneficiaries. It should be noted that these training courses need to be continued to further develop knowledge and practices.

87. In the Uauá territory – municipalities of Uauá and Monte Santo – the Terra Sertaneja Community Association and the Sertão Agricultural Family School (ACOTERRA/EFASE) promoted the participation of young people and women who had graduated from the school in the local technical team. Exchanges were held with technical schools and research institutions, and actions were developed to strengthen the communities of Fundo de Pasto in INRM practices through ATER. In the same territory, the Technical and Scientific Dossier and the Dynamic Conservation Plan were prepared to support the candidacy of the peoples of Fundo de Pasto for the GIAHS Program.

88. The Conama Resolution provides guidelines that may pose challenges for implementation in public agencies, such as inventory and continuous monitoring, i.e., inspection and traceability. It does not appear that public actors have the full capacity to enable the actions necessary for continuity. Added to this is the challenge of better developing the capacities of producers based on the support of civil society organizations that can facilitate access to processes.

89. At the institutional level, REDESER devoted less attention to local partnerships and integration into networks, which form the territorial-based sociopolitical articulation that enabled the project's technical interventions. Most of the entities executing LoA and contracts have a history of networking. However, REDESER was operationalized by addressing actions in its Priority Areas in isolation, despite the relevant promotion of exchanges. This is partly justified by the difficulties in executing the project according to the original schedule, but efforts are needed to ensure the articulation of common interests and the exchange of technical information between the organizations executing the actions in the territories and their strategic partners.

90. During the 11th edition of the Semiárido Show, held in Petrolina (PE) in August 2025, REDESER's actions were publicized and public presentations were made, with the participation of the LoA and contracts executing institutions. The event proved to be an important channel of communication with society. However, REDESER's successful participation in the Semiárido Show could have been reflected in improvements in the flow of information from the perspective of the territories.

91. The work with INRM in the PA territory is based on agroecology. However, the participation of this audience in 2025 in the 13th Brazilian Congress of Agroecology (CBA), the largest event in the field in the country, was not foreseen in REDESER's Annual Work Plan, limiting the project's support. In response to what they perceive as REDESER's inadequacy in relation to exchanges and coordination between LoA executing organizations, Diaconia and AGENDHA proposed a self-managed activity at the CBA held in October, "Experiences in Combating Desertification by the REDESER Project Network of Organizations." The Araripe Foundation, even though it did not observe the existence of a network of REDESER executing organizations, participated in the activity, presenting the history of the project and the actions developed through the implementation of its various LoAs.

92. It is still a challenge to scale up, based on the transformation of successful experiences in pilot areas combined. This can be overcome, at least in part, by applying the inputs from the ongoing studies by the Ekos Institute, aiming to identify relevant areas for action, document methodologies, and point out strategies for the implementation of public policies. However, it is up to FAO and MMA to strengthen monitoring and evaluation in the field, establishing appropriate baselines and adopting better definitions for indicators, with a view to ensuring post-project continuity.

93. There is a repressed demand for studies on local issues that have regional repercussions, such as technical arrangements, composition, and production harvested in diversified agroforestry systems. Most of these are managed by women, which increases the demand for studies and research on gender that support interventions in REDESER Demonstration Areas, including the relationship between AFSs and Food Security and Nutrition, women's autonomy, and family income. Similarly, there is strong demand for studies and research that support interventions in animal production in its various aspects. The set of practices implemented in family production units forms an empirical basis that can support participatory research (with the support of organizations executing LoA / Contracts), generating objective information that helps to expand the areas where the proposed technologies are adopted.

COMPONENT 5. Coordination with other activities, Monitoring and Evaluation

Finding 13. REDESER promoted knowledge and coordination with public agencies and initiatives within the scope of the PNCD and used complementary instruments (Work Plan, PIR, PPR) and mid-term and final external evaluations to monitor implementation and record results.

94. REDESER contributed to the implementation and strengthening of the Policy to Combat Desertification by supporting actions within the scope of COP 16 of the United Nations Convention to Combat Desertification (UNCCD), as well as the systematization of studies and research that made it possible to propose a Resolution to the National Environment Council (CONAMA) regulating the implementation of Timber Forest Management Plans in the Caatinga. The project worked in the field to strengthen participatory mechanisms and implement sustainable natural resource management practices, providing ATER for productive arrangements (backyards, animal production, AFSs, and conservation and efficient use of biodiversity, soils, and water).

95. MMA's strategic participation in COP 16 sought to monitor decisions made to reinforce LDN targets by 2030, expand financing mechanisms, and institutionalize monitoring and evaluation systems, converging with the logic of REDESER. Thus, sustainable management of sociobiodiversity and territorial governance were taken as a reference for raising new funds and developing public policies aligned with those of the UNCCD. Furthermore, the search for replicable models in arid areas positioned REDESER as an experience for Land Degradation Neutrality (LDN) based on the Caatinga and serves as a South-South reference for territories with similar contexts.

96. A document was developed to structure a Program to Combat Desertification within the scope of the National Policy to Combat Desertification, based on a survey of secondary data, policies, and programs related to the theme, guiding possible actions and proposals aligned

with the PNCD (Law nº 13,153/2015). Strategically, the document guides participatory governance involving government, civil society, communities, and international cooperation, articulating the restoration of degraded lands, sustainable development, knowledge management, and research and innovation, aiming at greater environmental resilience and improved quality of life.

97. A matrix was also developed with public policies in the three spheres, regulations, programs, and financing mechanisms to understand the legal framework and opportunities existing within the supported components, mainly forest restoration. It should be noted that this is a robust database, and considering the legal potential in the states, it can be digitized in order to facilitate surveys and the development of regional projects and strategies for the Caatinga, through perspectives of coexistence with the Semi-Arid region, combating desertification, and creating Conservation Units (FERNANDES, 2025).

98. As will be highlighted in the following chapter on monitoring, REDESER did not have a specific monitoring and evaluation system, budget, or staff dedicated entirely to this function. The absence of an explicit monitoring and evaluation system made it necessary to adopt complementary tools capable of fulfilling this function, where annual Work Plans (in conjunction with MMA), field missions, PIR, and PPR enabled adjustments to be made to the expected results. The visits contributed to strengthening coordination with local partners, establishing a process of on-site monitoring and evaluation, ensuring technical alignment, timely corrections, and greater effectiveness in the execution of contractual instruments.

99. At the closing seminar of the LoA with AGENDHA, the participation of social movements active in the PA (ASA, MST, and local and regional organizations), EMATER, the Secretariats of Agriculture and the Environment, the State Delegation of the MDA – AL, SEBRAE, and Banco Nordeste – BNB was coordinated. These actors were present to learn about the rural reality and adjust positions and procedures related to the treatment of relations between the environment, productive activities, and the availability of rural credit.

100. Furthermore, based on governance, the project could have better coordinated LoA executing organizations with other actors. One example was the holding (in October 2025) of the Meeting of Researchers on Desertification and Drought, through the Symposium on Combating Desertification. The event, organized with support from REDESER and the Caatinga Researchers Network, aimed to collaboratively promote the exchange of experiences/academic knowledge and civil society. On that occasion, the creation of the National Network on Desertification and Aridity (ReNDA) was announced. Thus, it would have been a relevant opportunity to articulate the research interests of the territorial bases in the project's PAs with academia. AGENDHA, which had expressed interest in the topic, participated. However, the event report did not clarify how the integration of researchers with grassroots organizations and their advisors would take place.

3.4.2. Additionality and contribution of co-financing to the achievement of results

Finding 14. GEF support generated qualitative additionality with land use and climate assessments, management plans and their (partial) implementation, a technical publication on forest management

in the Caatinga, and training, coordinated with local organizations. GEF supported food security and income generation in the communities. Co-financing was expressed mainly in technical support and events, supporting coordination for better project performance.

101. Considering the GEF proposal, additionality was observed as an incremental contribution to institutional and socioeconomic results and technological innovations. We sought to understand and reflect on the scenario that could occur without REDESER to achieve, based on the project's objectives and results, its quantitative and qualitative contributions to public policies, themes/components of its activities, and return to the target audience (project beneficiaries). The considerations were organized into categories.

Institutional strengthening

102. From the perspective of contributing to the expansion of qualities, the strengthening of the timber forest management agenda through the production and management of knowledge with state public entities, based on Conama Resolution 507/2024, was essentially complementary to the role of the Brazilian State. In addition to being the coordinator and co-financier, MMA was responsible for articulating and updating this instrument. The project was key in promoting discussions on the application of the Resolution, identifying good practices and challenges that are posed to the role of states in the Caatinga. This is a relevant legacy for the continuity of discussions, improvement of the instrument, and its implementation with the potential target audience in the project that developed management plans. Part of the knowledge on management was consolidated in an important publication entitled Forest management in the Caatinga: 40 years of experimentation (PARYEN et al., 2024).

103. In qualitative and quantitative terms, REDESER's co-financing partners contributed to its objective and components through direct action and synergies in combating desertification and promoting sustainable development. Government co-financiers monitored and coordinated the project with partners in the field, agendas for training events, and monitoring at the beginning of the LoA work and contracts with (potential) communities in the PAs. In turn, civil society co-financiers, based on their consolidated or initial activities in these PAs, contributed synergistically to the project's actions. The results obtained through co-financing were added to the results of the project's direct intervention, comprising the monitoring indicators. This situation contributed to the achievement of REDESER's results, including the global environmental benefits anticipated by GEF.

Technical and socioeconomic strengthening

104. Qualitatively, the production of diagnoses on land use and the physical environment can be considered complementary and key content for public decision-makers. In addition, the development of management plans for beneficiary communities (settlers, quilombolas, Fundo de Pasto) gives meaning to the development of regulations by public authorities to better serve this audience.

105. The implementation of the project with local civil society organizations enabled the generation and management of knowledge about production techniques and restoration, which are sometimes far removed from policies that support REDESER beneficiaries. In this context,

there is quantitative additionality, since the project supported beneficiaries in their efforts to ensure Food Security and Nutrition and in learning how to diversify production.

106. In Uauá, the work of young technicians to support the implementation of INRM and management practices was incorporated into daily life. In all REDESER PAs, the technical and economic autonomy of women was promoted. In Araripe, based on the work of ACB, the project worked on regenerative agriculture, contributing strongly to the recovery of areas and the strengthening of food security. In Seridó, interventions focused on animal feed also included actions aimed at human food and income generation. Potential was observed for the resumption of the timber forest management agenda.

107. In summary, additionality was observed in GEF's role in strengthening the implementation of what was expected in Cycle 5, as well as in the guidelines of FAO strategic framework, SDGs, and Brazilian public policies aimed at combating desertification, coupled with the sustainable development of traditional communities and family farmers. At the time of this assessment, it was observed that the additionality of resources ensured key efforts for food security, permanence in the countryside, and sustainable development of ecosystems.[13] The co-financiers stood out for the implementation of public policies, through the approximation of communities and guarantees of access to resources, production, and knowledge, aiming at the conservation of the Caatinga biome.

[13] For more details, see Appendix D. Field reports and project indicators in section 4 of this report.

4. MONITORING AND EVALUATION

Finding 15. The project used instruments from Work Plans with MMA, PIR, and PPR, in addition to adaptive management and quality control of implementation, having carried out 16 technical monitoring missions in the field to identify operational bottlenecks and make strategic adjustments. The project did not have a specific monitoring and evaluation system, with a budget and staff fully dedicated to this function. Historical socio-political and technological accumulations in the territories and organizations involved in the actions in the PAs were disregarded for the Baseline, defined as zero. The outcome (impact) indicators demonstrated the achievements at a global and municipal level for GEF, while the *output* (or results) indicators responded to the expected outcomes and outputs.

108. During the last years of its implementation, the project maintained an adaptive management process for monitoring and follow-up, based on formal instruments (Work Plans, PIR, PPR). There was no specific monitoring and evaluation system, with a budget and staff dedicated to this function. A baseline of zero was established for all actions, even for executing institutions with a long history of operations in protected areas.

4.1. M&E Plan

Rating: Unsatisfactory

109. The REDESER documentation provided did not allow for the identification of the concepts and operationalization of the different levels of indicators adopted: intervention indicators, operational indicators, and global, strategic indicators. For transparency purposes, a demand was identified for better discrimination of the results obtained by specific REDESER actions and those that came from co-financing.

110. Given that the project was developed more than ten years ago, it is understandable that expected outcomes and outputs have been changed or deleted, as shown in the annual Work Plans from 2023 onwards. However, except for targets and indicators linked to deleted outcomes and outputs, and although monitoring was intensified by field missions from 2023 to mid-2025, the REDESER evaluation system had been maintained as expressed in the ProDoc.

4.2. M&E implementation

Rating: Moderately Satisfactory

111. According to interviews, no justification or information was provided by REDESER implementers at FAO and MMA on the reasons that led to the baseline being set at zero, despite the historical socio-political and technological accumulations in the territories and organizations involved in the actions in the PAs. The components of REDESER are cross-cutting in nature, which enhances the implementation of project actions. However, the information made available to the evaluation team did not allow for a full understanding of which goals the outcomes or outputs of each action contributed to.

112. For global indicators of a strategic nature (such as the scope of outcomes on the adoption and integration of INRM), it is necessary to break down and disaggregate the information at the territorial level. For example, it is necessary to distinguish the area of land effectively used

by family farming from the total area of the municipalities involved. The use of geoprocessing tools would play an important role in this process.

113. Based on the Work Plan for October 2025 (Table 6), the table of goals and outcomes shows differences in some goals and indicators of outcomes and outputs, in relation to the work plans for 2023 and 2024. This procedure contributes to transparency in the project statements. However, this approach also suggests an imbalance in relation to other targets and indicators in the record of the project's accumulated progress. If they had been adjusted, these records could have been better informed of the results achieved.

114. Since 2023, the PIR indicated that Result 1.1 "Integration and expansion of Integrated Natural Resource Management (INRM) at the landscape level" had as its indicator "Number of small producers with increasing and diversified production based on INRM" and a target of 1,567 people. For this same action, in the annual Work Plans, product 1.1.3.2 "Conducting an online INRM course for extension workers in the semi-arid region in partnership with public ATER companies and public educational institutions" had the indicator "Number of personnel trained to use the guidelines developed for the identification and evaluation of INRM systems," ensuring that 50% of the training audience would be women and 30% would be young people. In the June 2025 PIR, farmers were also included in the calculation of this target: "1.1.3.3 Conducting an online INRM course for extension workers and farmers in the semi-arid region in partnership with public ATER companies and public educational institutions."

115. In Result 2, "The forest area under multiple-use SFM was expanded," the indicator "Number of hectares providing a sustained flow of services in forest ecosystems in drylands" and the target of 618,062 ha of forest area (85% of forest cover in the project area) were deleted. These were changed to Result 2.1 "Forest areas under sustainable multiple-use forest management (SFM) were increased," initially with the indicator "Sustainable Forest Management (SFM) practices identified, evaluated, and replicated" and the end-of-project target "Demonstration areas with Sustainable Forest Management Plans in the process of being developed, reactivated, or implemented - total 15,000 ha."

116. The cumulative progress report for the period presented data on the number of hectares under forest management but did not specify whether the SFM Plans were being developed, reactivated, or implemented. In all areas visited in the field, SFM IPs were under development and would not be implemented during the project period. Although it specified whether these results were due to direct project intervention or co-financing, in the latter case it did not report where the actions took place.

117. The target and indicators for Outcome 3.1 “Improved capacity for seed and seedling production to support the restoration of degraded forests and lands in ASDs” have also been changed. Outcome 3.2 announces sustainably managed forests with established connectivity points, with carbon stored in forest ecosystems and emissions avoided from deforestation and degradation (direct, over the lifetime). According to the 2025 PIR, the indicators and their respective projected and achieved targets would be: a) Conservation and increase of carbon in forests: +30,000 ha of restored forest, +439,200 tons of CO2eq sequestered, and additional increase of carbon in the forest through SFM (target: 618,062 ha, 2,058,146 t CO2eq - direct

and indirect impact). 4,009 hectares were restored, 893 of which originated from co-financing actions by the Araripe Foundation.

118. The results of the calculations of stored carbon and avoided deforestation and forest degradation (carried out by the NEXT Platform, FAO headquarters) were not yet available at the time of this report's completion.

119. REDESER explained that the objective of developing SFM Plans, including forest inventories, was to expand the supply of plant biomass based on the multiple uses of caatinga forests (timber, non-timber products, beekeeping, silvopastoral systems). Targets and indicators followed this logic. However, information on stored carbon and avoided deforestation and forest degradation opens prospects for the future trading of carbon credits. This option was put forward as a possibility by the company Verde Vida Engenharia for portions of forest theoretically outside the boundaries of the SFM Plan areas. One beneficiary family in RN plans to enter the future carbon credit market instead of offering biomass on the regional market. When questioned about the issue, the Araripe Foundation did not respond.

120. Although the design and implementation of the M&E system presented problems, REDESER was able to monitor and provide inputs for project follow-up.

Table 8. Outcomes, indicators, targets, and consolidated scope, including co-financiers, in REDESER.

Project objective: To halt and reverse environmental degradation in areas susceptible to desertification (ASD), ensuring the flow of ecosystem services, promoting integrated natural resource management, generating environmental benefits, and contributing to poverty reduction.

utcomes	**Outcome indicators**	**Unit**	**Target**	**REDESER results (including co-financing)**	**% in relation to REDESER target**
Outcome 1.1 - Integrated Natural Resource Management (INRM) has been mainstreamed and scaled up at landscape level.	Number of hectares where INRM is adopted and mainstreamed	Hectares (ha)	904,142 ha	**1,514,557.2 ha**	167.51%
	Number of INRM tools and methodologies introduced	Good practices implemented	Three good practices applied in 100% of target areas and disseminated in capacity-building activities	**INRM** practices **applied in 100%** of target areas and disseminated in activities carried out	100%
	Number of smallholders trained in INRM	People	1,567	**1,932 people trained**, including classroom training linked to contracts and LoA (1,130) and specific online course on INRM (802). • **Project + co-financing (Araripe Foundation, AGENDHA, and SEPLAN - RN– RN Sustentável): 1,700 people: 3,632**	REDESER 123.29% With co financing 231.7%
	Non-timber forest products (NTFPs) are incorporated into government programs and projects and in	%	20% increase in products purchased by Government Procurement Programs (PAA/PNAE)	**26% increase** This progress was made possible through co-financing, which helped facilitate the inclusion of new farmers in the PAA and PNAE programs, with emphasis on the actions developed by the Araripe Foundation, COOPERCUC,	With co financing 130%

	local agribusinesses			AGENDHA, and SEPLAN/RN - RN Sustentável. In addition, producers were included in the Minimum Price Guarantee Policy for Socio-biodiversity Products (PGPMBio), with support from the Araripe Foundation, expanding the mechanisms for access to public policies aimed at PFNMs.	
	% of small properties managed by women	%	30% of smallholdings are managed by women	**48.9%** of supported farms are managed by women, with many of them taking on leadership roles in local associations and cooperatives	163%
Outcome 2.1 - Forest area under sustainable multi-purpose sustainable forest management (SFM) has been increased	Sustainable Forest Management (SFM) practices identified, evaluated, and replicated	Hectares (ha)	Demonstration areas with Sustainable Forest Management Plans in the process of being developed, reactivated, or implemented - total 15,000 ha	• **REDESER Project: 28,664.93 ha** • **Project + co-financing** (Araripe Foundation, Brazilian Forest Service, and SEPLAN/RN – RN Sustentável): **67,278.35 ha**	REDESER – 191% REDESER + Co financing: 448.52%
2.1.3. Guidelines developed for SFM practices and monitoring protocols at the local level	Forest agents and agencies using the guidelines	Number	100 Forest agents and agency using the guidelines	**Total: 158 people**	158%
Outcome 3.1 - Seed and seedling production capacity improved to support restoration of degraded forests and lands in ASD	Restoration of forests and landscapes in ASDs with native species	Hectares (ha)	30,000 ha under restoration with native species	**3,016 hectares** recovered by REDESER. Total with **Araripe Foundation co-financing:** + **AGENDHA:** **4,009 hectares** recovered.	**REDESER 10.05%** **REDESER + Co financing: 13.36%**

3.1.1.1. Investment in the restoration chain focused on technical and technical assistance and training in seed collection, processing, seedling cultivation, and facility improvement	Registered nurseries and nursery staff with improved capacity and benefiting from training	Number	35 registered nurseries 1,600 nursery staff with improved technical skills and benefiting from training	**Number of registered nurseries: 12** **Number of nurseries established: 12 seedling nurseries** **348 people trained by REDESER** Added to the co-financing from the Araripe Foundation and AGENDHA, there is a total of 2,550 people trained	34.3% REDESER 21.75% - REDESER REDESER + Co financing: 159.3%
3.1.3. Practical guidelines for FLR in ASD are developed and adopted by stakeholders	Number of guidelines for FLR practices in ASD developed and adopted by stakeholders	Number	Number of guidelines for FLR practices in ASD developed and adopted by stakeholders Publication released	Publication drafted 34 guidelines	100%
Outcome 4.1 - Improvement in capacity of key state and municipal institutions about LD and desertification	a) Number of teams with improved capacity at the local level. b) Number of knowledge management networks in SLM	People	a) Increased capacity for LD and desertification issues for at least 270 people from the 14 municipalities in the 9 states with ASD b) A knowledge exchange network established in SLM	**825 people trained** 4 Networks created: • RENDA – National Network on Desertification and Aridity, • ARADAS Network – Alagoas Network for the Recovery of Degraded Areas, • Seridó Native Bee Guardians Network, and • Network of students from the INRM course.	305.5% 400% With co-financing – 700%

				With co-financing from the Araripe Foundation, a total of **seven networks** has been created: • Low Carbon Agriculture Network in the Caatinga; • ABC Caatinga Network • Network of Students in the Sustainable Rural Program Course	
4.1.1.2 Establish and maintain an online database network to promote the exchange of information, knowledge, and projects related to Land Degradation and Desertification (ASD) issues using the WOCAT platform, as well as prepare, review, and enter relevant information into the WOCAT system to create an up-to-date and accessible repository	Number of experiences in Sustainable Land Management	38 articles written		51 experiences of Sustainable Land Management registered on the global WOCAT platform, covering all states of the Brazilian Semi-Arid region 1 article published in the Brazilian Congress of Agroecology **Total 52**	136.8%
Outcome 4.2 - Policy-makers and farmers, private sector and education stakeholders are better informed about SFM, FLR,	Availability of good quality materials at the local level.	Availability of good quality materials at the local level.	55 informational materials (brochures, videos, radio spots, and 1 event)	78 materials were produced, including technical and educational booklets, practical guides, brochures, management plans, and the book Forest Management in the Caatinga: 40 Years of Experimentation, as well as videos	141.8%

INRM and biodiversity conservation				about the REDESER Project, FAO Transforma, Gender and REDESER, and SFM in the Caatinga	
Outcome 5.1 - Synergy established with complementary initiatives to promote sustainable management and restoration benefits at landscape level	Number of initiatives with established collaborations	Number of initiatives	Most stakeholders and relevant parties are currently interacting. Interaction with key initiatives.	10 initiatives	100%

Source: FAO Brazil document: Targets and outcomes – REDESER, consolidated in January 2026.

5. SUSTAINABILITY

Rating: Likely**.**

Finding 16. The project generated technical knowledge and contributed with approaches from Demonstration Units that serve as a reference for new projects in arid and semi-arid areas. Part of the sustainability of the actions in the PAs was due to partner organizations, involving ATER to support sustainable management based on practices and structures supported by the Project.

121. Evidence of partial appropriation and institutionalization of results, with the generation of technical knowledge, field-validated demonstration units, arrangements with partner organizations for ATER and sustainable management, combined with limitations on access to financial resources and dependence on commitments from financiers, demonstrate the sustainability achieved by the project.

122. Regarding sustainability prospects with signed commitments, it should be noted that a product of the LoA signed with EFASE to enable ATER for beneficiaries in the Uauá territory provides for short-, medium-, and long-term actions. The suggestions made to replicate activities in other semi-arid regions of the country include a description of technical and operational requirements, a budget with necessary inputs, a work plan and schedule, performance indicators, and means of verification. This perspective strengthens the training of young people and their professional integration, in addition to enabling the inclusion of NRM practices in technical training programs and state public policies.

123. Furthermore, at EFASE, the Animal Science Degree program will use the project's DUs in 2026 to train students and farmers, in addition to adding a module on combating desertification to the environmental management course, based on the project's knowledge.

124. In INRM areas supported by the project, the exit strategy identified was the continuation of dialogue between beneficiaries and local co-financiers (LoA and Contracts executing institutions). It should be noted that there are no financial resources secured for this specific purpose. However, in Chapada do Araripe, ongoing initiatives connected to this strategy were observed: 1. support for the Women's March to the productive backyard, including the use by a beneficiary of an Agroecological Notebook to monitor the production of biodiverse AFS, its commercialization, distribution, and consumption; and 2. technical support from the National Rural Learning Service (SENAR) for productive activities (vegetables) of some beneficiaries.

125. REDESER coordinated policies on conservation, food security, markets, tourism, and value chains, Agenda 2030, and SDGs 2, 12, 13, and 15. With government support, the process of applying for GIAHS in Uauá, Monte Santo, and Juazeiro will continue and be consolidated.

126. From the perspective of public policies and programs, it is noted that the project results have the potential for replication and integration into public policies, amplifying the leverage effect of GEF investment. Within the scope of FAO CPF for the period 2024-2027, the lessons learned from the project can: 1. contribute concretely to reflections on community leadership, 2. support the mapping and diagnosis of

ASDs that should be assessed by the National Food Security and Nutrition System (SISAN) and be identified for restoration, and 3. develop sustainable production chains based on the AFSs that were developed in REDESER.

127. Also in INRM, as a possibility for articulation between public co-financiers and civil society, which includes the partnership with the Farmácia Viva/Federal University of Pernambuco (UFPE) project, the prospecting of FUNBIO support for production processing units, the possibility of including communities in the state procurement program "Mercado Alimenta Ceará" and in the federal Food Procurement (PAA) and School Feeding (PNAE) programs. In addition to the implementation of the Caatinga Socio-Bioeconomy Center, an initiative of the National Bioeconomy Secretariat (SBC/MMA) with the definition of a governance structure and the development of an action plan, with the identification of funding sources.

128. Regarding voluntary commitments, the actions of EFASE and Fundação Araripe are noteworthy, along with other projects such as “Sertão + Produtivo” / GEF Terrestre, which is expected to run until 2027. Access to federal government calls for proposals may provide additional resources for the continuity of actions in the Fundo de Pasto territory. One example is the MDA's announcement of the preparation of a Da Terra à Mesa call for proposals specifically for the semi-arid region. However, some territorial leaders criticize the logic of project cycles, which fail to address the lack of public policies that represent farmers' rights.

129. In Xingó, farmers reported that there are neighbors interested in the tested technologies and expressed that they can expand areas with them in family units in the surrounding areas, based on mutual service exchange efforts. AGENDHA has committed to providing technical support for the implementation of these systems in Xingó.

130. AGENDHA is also seeking ways to make REDESER sustainable by expanding its geographical scope of action. The organization is in the process of implementing a project covered by the "Caatinga Viva" (Funbio/BNDES) call for proposals in priority arid municipalities in the state of Bahia for ecological restoration based on technology similar to that applied in REDESER.

131. One challenge to sustainability is linked to the dissemination of the knowledge produced in the project. MMA could develop a digital data platform on the surveys and analyses carried out in REDESER, valuing the technical memory built up during the project, involving, for example, the socioeconomic conditions of PAs and the good practices and lessons learned from the project.

132. Another challenge to sustainability is changes in political governance at the three levels of government, which may alter priorities to strengthen fundamental issues related to land regularization, environmental enforcement, and the maintenance and expansion of access to institutional markets, such as the strengthening of the PAA, PNAE, and PGPMBio in the PAs, among other mechanisms. Risks to the sustainability of the project's actions and responses to them were also identified, based on REDESER's experience.

Table9. Risks to sustainability

Risk	Response to risk based on knowledge gained from the Project to promote sustainability with support from partners
Pressures on land use. Risk to sustainability linked to land use, due to increased pressure from potential land grabbers and agribusiness in areas with recognized management plans. While these areas will be recovered and bring resources to communities, there may also be increased pressure due to the increased value of these areas.	Strengthen security of use, local and institutional governance in recovered/managed areas, aiming at appreciation and sustainable economic use, through: • Supporting land regularization by INCRA of areas that have been supported and are identified by the project; • Formalizing territorial agreements with city halls, municipal councils, and environmental agencies to recognize and support community rules of use (protocols for entry and authorization for exploitation); • With the support of local partners, strengthening social and territorial monitoring: creating/strengthening local networks.
Energy market opportunities. On another front, energy-generating companies in the Araripe territory, such as steel mills and producers of inputs for civil construction, have the potential to attract rural producers with leasing proposals, in addition to the potential for the implementation of solar or wind power plants. This may reduce interest in sustainable management and recovery policies, as it offers gains with less effort, threatening the future impact of REDESER.	Demonstrate, through REDESER, that management and restoration actions are sustainable compared to simple energy exploitation. • State and local governments. Present a medium- and long-term economic comparison, aiming at the maintenance of management and restoration activities, added to the income flow (short, medium, and long term) on possible leasing versus management/restoration, including loss of autonomy and environmental liabilities. • Simplify access to benefits (technical assistance, inputs, microcredit, public procurement, PES/environmental services where available) to make management viable. • Safeguards and licensing: anticipate dialogue with environmental/territorial agencies to demand mitigation/compensation.
Access to markets. Timber SFMP that were still being implemented at the time of this Assessment. The challenge of establishing agreements with buyers/ceramics manufacturers, with a view to consolidating the project's work and making the Plans economically viable, could be fatal to the sustainability of REDESER's results with the beneficiary public.	Strengthen the PMF value chain with: • State governments, aiming at a commercial strategy with identification of buyers, minimum values, and production flow. • Local partners (NGOs), given their knowledge of contracts with price standards, adjustments, and trust. In addition to supporting the mapping of other uses/segments with a view to reducing dependencies. • The federal government should strengthen the traceability and oversight of the timber production chain.

133. It is concluded that the sustainability of REDESER occurs through the strengthening of participatory territorial governance, integrated management of natural resources, and production and restoration practices validated in the field, with the strengthening of local capacities using transferable methodologies with the support of voluntary commitments from project implementers. However, maintaining and expanding the results depends on access to new financial resources and operational arrangements for the continuity of ATER and post-project implementation, in addition to the consolidation of interinstitutional commitments and strategies for governance and knowledge transparency.

134. In terms of public policy implementation, REDESER's legacy to new projects in the Caatinga can be seen in its practical roadmaps for models of social participation and engagement of family farmers and traditional peoples and communities, training models, integration between sustainable use and biodiversity conservation, and lessons learned about restoration and multiple-use forest management. These approaches can be replicated or adapted for the implementation of similar actions, reducing risks and strengthening socio-environmental governance in the areas of intervention.

6. GEF POLICIES AND GUIDELINES

135. The criteria of gender equality, generational equity, and poverty reduction were observed by the evaluation team, although not required by GEF Cycle 5, to which REDESER was submitted and approved. It should be noted that REDESER had already established a target for the group of beneficiaries that at least 30% of family units be managed by women. The project exceeded this target.

136. The risk matrix presented in the ProDoc was focused on the long-term impacts of the project. Given that this final evaluation is focused on results, REDESER's analysis of environmental safeguards was limited to this approach.

Gender equality

137. The implementation of the project actions considered the power relations between different genders, which positively influenced the results achieved with the interventions. This approach was conditioned by the specific nature of each activity. For example, actions related to plant extraction, diversified agroforestry systems, and backyard management had a strong women´s presence.

138. The goal established by REDESER of 30% of supported family farming production units being managed by women was exceeded, reaching around 49%, with territorial variation between 30% and 67%.

139. In some locations, REDESER implementation teams promoted and coordinated women's groups, confirming their central role in decision-making within families and communities. Several local organizations (associations, cooperatives) have women in management positions, in some cases as a majority. In addition, some women participated directly as laborers in the implementation of certain management practices, such as those related to soil and water conservation.

140. Furthermore, women actively participated in training events, forming a majority on many occasions. This demonstrates REDESER's appreciation of women's roles in production processes and in the management of production and community units. The technical teams of the organizations executing LoA and contracts were composed of a balance of gender and generations. The project's actions contributed to women´s empowerment.

Generational equality

141. The involvement of young people and the elderly in REDESER and the dynamics of power relations between different generations, as well as their influence on the results of the interventions, are conditioned by the specific context in which REDESER's actions were implemented.

142. In general, young people have an active voice in technical dialogues and community decision-making. However, in places where options for generating monetary income are very unfavorable, or where educational opportunities are scarce, the tendency is for young people to migrate, with only one or a few family members remaining on the land to support and care for older people.

143. When there are jobs and income generation, many young people remain in the countryside. There are several examples where young people, together with family members, have shown outstanding dedication to the implementation of project actions.

Also noteworthy is the inclusive approach of young students and graduates (with a balance of gender) from the Escola Família Agrícola do Sertão (EFASE), who actively participate in REDESER actions in Uauá and Monte Santo, in Bahia.

Poverty reduction

144. Although the evaluation team did not collect systematic data on this topic, the project contributed to the creation or strengthening of decent work and income alternatives (monetary and non-monetary) in the Caatinga, seeking environmental and social sustainability in REDESER's interventions.

Environmental safeguards

145. The environmental risk linked to the increased frequency of droughts and the drastic reduction in rainfall, and the sequence of events related to climate change affecting the target population, was estimated to have a high probability of occurrence (H). Given the environmental diversity in the different PAs and the frequent monitoring of the implementation of actions in the field, REDESER had the flexibility to make adjustments that enabled the planned results to be achieved. However, it was not possible to avoid delays in the implementation schedule for several activities that were dependent on climatic conditions.

146. The environmental risk associated with increased forest fragmentation in the selected areas and growing water pollution due to unsustainable land and forest management practices was estimated to have a Moderately Low (ML) probability of occurrence. REDESER implemented sustainable forest management and land use practices. However, within the time frame of this results assessment, it was not possible to measure the magnitude of changes in forest fragmentation and water pollution.

147. The environmental risk associated with increasing pressure from agribusiness resulting in increased deforestation in vulnerable transition areas had an estimated probability of occurrence of High (H). REDESER implemented actions to support capacity building, institutional strengthening, and sustainable land use. It would be appropriate to assess agribusiness pressures and deforestation in a period after the end of the project to understand whether REDESER's results continue to strengthen the PAs and target communities.

7. CONCLUSIONS, RECOMMENDATIONS, AND LESSONS LEARNED

7.1. Conclusions

148. **Conclusion 1. REDESER was consolidated with GEF in 2016, but only in 2022 did it begin to be implemented on a continuous basis.** FAO and MMA led the project based on its objectives and components, consolidating clear work plans and engaging in direct dialogue with local actors—states, municipalities, civil society, and beneficiaries—thus ensuring that the project's intended goals were achieved.

149. **Conclusion 2. REDESER demonstrated relevance and coherence by articulating technical interventions in the field with capacity building and knowledge management on a territorial scale in the Caatinga biome**. This approach is in line with recent policies and programs (PAB-Brasil 2025-2045 and PPCaatinga) and dialogues with GEF initiatives such as Conecta Caatinga and ARCA, reinforcing institutional synergies and the logic of integrated land management.

150. **Conclusion 3. The project's effectiveness is reflected in concrete contributions to work and income, with an emphasis on the participation and empowerment of women and young people in actions and training**. Products such as diagnostics, mapping, and SFM Plan in Araripe supported and guided sustainable use, highlighting bottlenecks between demand and legal supply of forest products and paving the way for technical responses.

151. **Conclusion 4. In terms of efficiency, it was observed that the project had fewer co-financing resources, but optimized its execution through LoA, contracts, and co-financing with local partners,** ensuring better execution. REDESER did not have its own M&A system, but used a Work Plan, PIR, and PPR to monitor execution. Methodological challenges remain: the absence of a baseline and a clear distinction between project and co-financing results, as well as risks of subjectivity if analyses are not anchored in explicit, data-based operational procedures. The replanning after the MTR adjusted actions and timelines, maintaining the focus on results until 2025. It is noted that the LoA and the contracts conducted by the project were decisive instruments in ensuring predictability, alignment, and fluidity in implementation. However, while the LoA operated as rigid and standardized models, the contracts proved to be more flexible and adaptable to specificities, allowing for adjustments in scope and deadlines when necessary. Thus, flexibility proved most useful in facilitating the process, while it would be necessary to improve the letter templates by incorporating controlled margins for adaptation without compromising legal certainty.

152. **Conclusion 5. The sustainability of the project relies on exit strategies supported by voluntary commitments and local networks:** ACB, FA, EFASE, AGENDHA, and Diaconia coordinate technical assistance, productive integration, and access to policies (PAA, PNAE, state programs) and new projects (e.g., "Caatinga Viva"). Voluntary commitments were observed in all REDESER PAs. One area for improvement is to expand the scope of diagnostics, focusing on territories, and consolidate a knowledge platform for technical audiences and decision-makers.

153. **Conclusion 6. In a cross-cutting manner, the project adopted a gender approach with measures that led to the empowerment of women** through the implementation of activities and training in territories. This includes women who lead

productive units. Through monitoring data disaggregated by sex and field evidence on the effective participation of women in decision-making spaces, it was possible to understand that the project contributed decisively to women leadership.

7.2. Recommendations

Table10. Recommendations for the REDESER Project.

Recommendations	GEF	FAO	MMA	States	Executing Institutions and Contracts
1. Regarding the preparation of Diagnostics and the M&E system, it is recommended that an ex-ante evaluation be carried out by an independent mission to guide future initiatives. In the execution, the preparation of diagnostics and prioritizations should be based on continuous listening to communities and adaptation to the local context. Project products should feature accessible digital interfaces (*dashboards*, territorial files), allowing consultations and updates on risks and opportunities by decision makers, communities, academics, and communication channels. Conceptually explain the proposed indicators and the operationalization of the M&E system; and clearly inform which results stem specifically from direct project intervention and which come from other sources, such as co-financing. The use of geoprocessing tools can contribute to these processes.	**P**	**L**	**P**	**P**	**P**
2. It is recommended that actions related to coordination, planning, and governance be improved. Based on existing, planned, or proposed public policies, coordinate to avoid overlaps and enhance synergies; formalize opportunities for dialogue between managers and implementers to exchange experiences; include mechanisms for interaction between executing organizations in the initial planning; and promote research in the territories in coordination with executing and local/regional organizations.	**P**	**L**	**L**		**P**
3. Attention should be paid to economic sustainability and strategic issues, involving studies on topics relevant to priority territories, including economic and social aspects of gender approaches and AFSs; and clarification of technological components of animal production. These studies should be coordinated with public policies that promote fair prices for territorial products (such as the PGPM and access to the PAA and PNAE).	**P**	**L**	**L**		**P**
4. For the continuity of initiatives such as REDESER, it is recommended to consider seasonal (climatic) adaptations and training and practical learning actions, maintaining the partnership between public and private entities and local organizations, which proved effective in the	**P**	**L**	**L**		

implementation of the project; institutionalize learning by doing and structure continuous capacity-building processes to strengthen local capacities.					
5. It is recommended that the implementation schedule for activities proposed by the project respect the minimum time of two years for interventions with forestry themes, with the ideal being around four years. It is also necessary to implement mechanisms to guarantee a minimum price for producers of plant biomass products, as well as to articulate dialogue with renewable energy sectors regarding the objectives and actions of projects in overlapping territories.	**P**	**L**	**L**	**P**	**P**
6. Within the scope of GIAHS, there is a need for continuity in technical and political coordination (at all three levels) to ensure the proper conduct of the process and its referrals. Local actions, which do not depend on external funding, can be implemented in parallel with the application process, such as the mobilization of communities and public decision-makers.		**P**	**L**	**L**	
7. Strengthening legal frameworks on land use and monitoring systems in projects is key, as it provides legal certainty, transparency, and continuity of sustainable practices initiatives such as REDESER. It is also essential to involve public authorities in activities that depend on technical assistance and rural extension (ATER) and to strengthen dialogue with strategic local partners.		**P**	**L**	**L**	**P**

L = Leads; P = Participates.

7.3. Lessons learned

Project design, appraisal and planning

154. FAO Project Management Unit (PMU) played a key role in the implementation and monitoring of the project, facilitating dialogue and identifying, prioritizing, and conducting the planned activities with co-financing partners and executing institutions. However, the constant need for dialogue and authorizations through FAO headquarters in Rome can cause delays in processes and reduce the agility of operations.

155. Maintaining programmatic focus based on ProDoc and governance was key to successful implementation. Requests from partners—such as territorial expansion or methodological reorientations—must be analyzed considering feasibility and risks. Limits were communicated to preserve planned results and prevent implementation from drifting into actions outside the scope of the project.

156. The use of LoA instruments and contracts allowed the project to be brought closer to the local context of the PAs. However, LoA proved to be a rigid instrument and allowed little room for updates necessary for seasonal climate variations and the agricultural calendar. Contracts, on the other hand, allowed flexibility for the issues mentioned. In this way, the project remained attentive to the modalities to ensure the success of the interventions and minimize risks.

Implementation risk management

157. Highly complex actions, such as SFM, AFSs, and forest restoration, showed that short deadlines (less than two years) are insufficient, especially in projects with forestry components. Longer deadlines, flexibility for resource reallocation, and governance monitoring with the possibility of support for new partners or co-financiers are relevant for consolidating results.

158. In the territory where REDESER is implemented in the Caatinga, the possibility of water scarcity is constant, which is a limiting factor for interventions and indicates that it is necessary to incorporate strategies for water resource management and use from the outset. The project has shown that initiatives in arid zones and more vulnerable territories must rely on flexible planning approaches that can quickly adapt to conditions, variations, and climate extremes, strengthening the resilience of communities and the effectiveness of deliveries.

Stakeholders engagement

159. Coordination with research institutions proved to be strategic for qualifying methodologies, validating technologies, and strengthening the technical robustness of intervention practices developed in the field with beneficiaries. To ensure adherence to territorial realities, this coordination reached the organizations executing LoA and contracts and their local partners.

160. The actions of public actors in the search for synergies at different levels (federal, state, and municipal), and actions guided by public policies, have the capacity to significantly expand the reach and sustainability of results. Projects associated with long-term national and regional strategies are indispensable for addressing desertification and climate change, avoiding one-off solutions.

161. The involvement of local partners facilitated direct dialogue with communities and the implementation of the strategy and activities. Local or regional institutions with prior knowledge of the territories contributed to common themes related to the sustainable use of resources and food security. Participatory governance arrangements proved to be fundamental in increasing legitimacy, stakeholder commitment, and the effectiveness of actions in the territory.

162. Community engagement is consolidated when the results of technological and accessible interventions are concrete and visible, strengthening environmental awareness and commitment to conservation and preservation. The inclusion of families generates adherence, ownership, and potential sustainability for the results.

163. Integrating production and conservation with forest management associated with animal production reinforces the economic viability of sustainable practices and acceptance by PA communities. In addition, continued and adequate technical assistance is a key condition for the continuity of such practices by families in the field.

Knowledge, collaboration and learning

164. Successful local experiences, such as the implementation of different types of agroforestry systems in REDESER PAs, are models for other arid and semi-arid regions, reinforcing the demonstrative and replicable nature of the interventions.

165. The combination of formal science, traditional knowledge, and agroecological practices is key to long-term sustainable solutions, increasing environmental and social resilience. In training, the combined use of technical support and learning by doing, exchanges, and other educational tools are effective strategies for sharing knowledge, contributing directly to the permanence of families in the countryside. Educational actions are effective strategies for forming replicable references for good socio-environmental practices.

Gender equality

166. Women's participation in natural resource management was relevant to conservation, local governance, and the sustainability of initiatives. In addition, it strengthens Food Security and Nutrition and women's economic autonomy. This shows that training tailored to the local context helps to actively promote women's participation. Women's empowerment is crucial to achieving more equitable gender relations in domestic, community, and productive spaces.

167. Knowledge of issues related to production, participatory governance, and regulations is key to consolidating local leadership and increasing women's involvement in resource management and decision-making processes. Here, women's participation increases when practical barriers such as schedules, locations, and dissemination of actions are removed, creating safe spaces for speech and leadership, facilitating effective participation and voice.

Local community participation

168. REDESER's key to restoration and production processes was the engagement of families (willingness, availability of time, and labor) and the collective cooperation. These were decisive factors in strengthening community organization, reinforcing the

importance of supporting shared learning and sustaining processes of change in the territory.

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APPENDIX 1. EVALUATION MATRIX

Tables on criteria, dimensions, and key issues for evaluation

Table A1. Evaluation issues/focus

Criteria and dimensions evaluated	Dimensions	Key issues or focus of the evaluation
Outcome (to be evaluated)	***Relevance*** (to be evaluated) ***Coherence*** (to be evaluated) ***Efficiency*** (to be evaluated) • ***Implementation*** (to be evaluated) • ***Execution*** (to be evaluated) See Appendix 1 of the Terms of Reference for this evaluation.	➢ Validating MTR findings and implementation of its recommendations ➢ Identifying what changed between the MTR and the end of the intervention and whether these changes affect the relevance and external coherence of the project objectives ➢ Assessing the efficiency criteria, the evaluator should focus on whether the project governance structure facilitated or hampered project execution. It should also focus on the timeliness of project delivery and, when feasible, assess its the cost-effectiveness. ➢ Under efficiency the evaluator will also assess the criteria of implementation and execution that are to be rated, focusing on the functions and how these were carried out rather than the agency per se. See more at appendix 2. ➢ Under implementation the evaluators will assess the implementation process (project identification, concept preparation, appraisal, preparation of detailed proposal, approval and start-up, oversight, supervision, completion, and evaluation), the challenges faced at different stages of implementation and how these were addressed. The report will focus on elements that were controllable from the GEF Agency's perspective. ➢ Under execution the evaluators will assess the execution of day-to-day activities, appropriate use of funds, as well as the procurement and contracting of goods and services following the regulations of the GEF Agency. The report will also discuss the extent to which the executing agency will facilitate follow-up to the project. **Specific evaluation questions on implementation and efficiency** ➢ Aside from sub-questions for implementation: How effective or ineffective was the technical and operational support to the project, including FAO, FAO-GEF coordination unit, LTO and BH support?

Criteria and dimensions evaluated	Dimensions	Key issues or focus of the evaluation
		➢ Has the project shown capacity to effectively adapt to changes in context and therefore generate unexpected results that contribute to the ultimate project objective? ➢ To what extent did implementation and execution arrangements (e.g. use of the right human resources for each function, use of efficient form of procurement that ensured teams/consultants with best possible performance) favor or hinder project activities, and contribute to efficient and results-based management and the achievement of project objectives?
	[14] ***Effectiveness (to be assessed)*** - *Additionality (NOT to be rated)* - *Contribution of co-financing to achieving results (NOT to be rated)* - *Progress towards impact (IF feasible and NOT to be rated)* See Appendix 1 of the Terms of Reference for the evaluation.	1) What results - expected and non, positive or negative - did the REDESER project generate? 2) What is the incremental value the GEF grant has brough about to results achieved (in terms of innovative approaches, technologies, big push on xx, etc.)? 3) To what extent did the materialized co-financing contributed to project results, reflecting national ownership? 4) How has the project contributed to progress towards long-term impact? **Sub-questions** 5) What outputs and outcomes were delivered in relation to the targets set by the REDESER Project? 6) What internal or external factors facilitated or hindered the achievement of results?

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Criteria and dimensions evaluated	Dimensions	Key issues or focus of the evaluation
Sustainability (to be rated)	See Appendix 1 of the Terms of Reference for this evaluation.	7) Will the benefits last after the project ends? How could the likelihood of sustainability be increased and/or ensured? 8) What are the risks to sustainability (financial, institutional, environmental, sociopolitical, others)? 9) How can result be up scaled and replicated?
M&E system and M&E implementation To be rated individually.	See Appendix 1 of the Terms of Reference for this assessment.	Validate mid-term evaluation and implementation of its recommendations. Focus on quality of indicators, means of verifications, M&E system focus and use.
Application of GEF Policies and Guidelines (NOT to be rated)	Environmental and social safeguards, gender, indigenous peoples, stakeholder engagement, communication See Appendix 1 of the Terms of Reference for this evaluation.	10) What examples could best illustrate whether the intervention implemented GEF policies? See suggested format table in the final report template. If good practices are identified, they will be included under "effectiveness" and/or lessons learned.
Lessons learned (NOT to be rated)	See Appendix 1 of the Terms of Reference for this evaluation.	11) What knowledge has been generated from project results and experiences, which have a wider value and potential for broader application, replication and use?

Table A2. Cross-cutting thematic issues

Criteria	Evaluation questions/sub-questions	Methods	Sources

Relevance	▪ To what extent did the project's strategy and actions support the implementation of the policies and programs of CPF Brazil, the UNCCD, and the Strategic Objectives of FAO and GEF? ▪ To what extent is the REDESER project aligned with national and local priorities for combating desertification and conserving biodiversity in the Caatinga biome?	▪ Documentary analysis ▪ Interviews with key stakeholders, including beneficiaries, FAO and GEF staff ▪ Meetings with national counterparts	▪ Project document ▪ Project Implementation/Progress Reports (PIR/PPR) and others ▪ GEF Policies and Strategies (FAO CPF) ▪ FAO Strategy and Programs ▪ National policies and programs ▪ Federal, state, and municipal strategies and plans ▪ Key stakeholders of FAO, GEF, National Counterparts, Beneficiaries.
Coherence	▪ To what extent were project activities and partnerships internally consistent, aligned with institutional mandates and national and regional programming, and harmonized with national strategies, avoiding duplication and promoting synergies? ▪ Were the planned actions and objectives relevant (realistic) to the project timeline, local institutional capacities and coordination, and the political context?	▪ Documentary analysis ▪ Interviews with key stakeholders, including FAO and GEF staff ▪ Meetings with national and local authorities	▪ Project document ▪ Project Implementation/Progress Reports (PIR/PPR) and others ▪ Key stakeholders from FAO, GEF, National Counterparts, Beneficiaries.
Effectiveness	▪ To what extent were the expected objectives and results of the REDESER project achieved? ▪ What outputs and outcomes were delivered in relation to the targets set by the REDESER Project? ▪ What internal or external factors facilitated or hindered the achievement of results?	▪ Documentary analysis ▪ Data analysis ▪ Interviews with key stakeholders/beneficiaries ▪ Qualitative analysis of the opinions and perceptions/experiences of the local team	▪ Project publications (research, technical reports, etc.) ▪ Project Progress/Implementation Reports (PPR/PIR) ▪ Key stakeholders from FAO, GEF, national counterparts, beneficiaries. ▪ Deliverables

	▪ How effective or ineffective was the technical and operational support to the project, including FAO, FAO-GEF coordination unit, LTO and BH support? ▪ To what extent did the implementation and execution arrangements (e.g., use of the right human resources for each function, use of efficient procurement methods to ensure the best possible performance of teams/consultants) favor or hinder project activities and contribute to efficient, results-based management and the achievement of project objectives? ▪ Did the project demonstrate the ability to adapt effectively to changes in context and thus generate unexpected results that contribute to the ultimate project objective?	▪ Field observation	
Efficiency	▪ Were financial, human, and technical resources used efficiently to achieve the intended results? ▪ Was project management and coordination adequate to ensure timely and cost-effective implementation? ▪ Could similar results have been achieved with fewer resources or in less time?	▪ Analysis of financial data and reports ▪ Interviews with PMU staff and REDESER consultants and FAO staff ▪ Qualitative analysis of the opinions and perceptions/experiences of local staff ▪ Field observation	▪ Project Progress/Implementation Reports (PPR/PIR) ▪ Financial reports ▪ Transaction list
Sustainability	▪ Are the results of the REDESER project likely to be sustained after the project ends? ▪ Have institutional, technical, and financial mechanisms been established to ensure the continuity of actions? ▪ Has the project strengthened local capacities, cooperation networks, and public policy structures?	▪ Documentary analysis ▪ Interviews with key stakeholders	▪ Project Progress/Implementation Reports (PPR/PIR) ▪ Key stakeholders from FAO, GEF, national counterparts, beneficiaries ▪ Minutes and reports from key events (seminars, workshops, field visits, etc.)

	▪ How and to what extent has the project supported the long-term process of reversing desertification in susceptible areas of Brazil?		
M&E system and Implementation	▪ Was a Monitoring and Evaluation (M&E) system designed with baseline information, SMART indicators, and a focus on gender/gender-disaggregated indicators? ▪ Did the M&E system track results and support adaptive management? Were reports prepared on time and with high quality?	▪ Documentary analysis ▪ Interviews with FAO staff	▪ Project Progress/Implementation Reports (PPR/PIR)

Table A3. Additional cross-cutting thematic issues.

Criteria	Evaluation questions/sub-questions	Methods	Sources
Gender equality	▪ Did the project promote equal participation of women in all phases of implementation? ▪ To what extent was the gender perspective incorporated into the project's actions? Can the approach be classified as negative, ignored, targeted, gender-sensitive, or transformative? ▪ Did the project strengthen women's leadership in production chains and community decision-making spaces?	▪ Documentary analysis ▪ Interviews with key stakeholders ▪ Interviews with beneficiaries ▪ Qualitative analysis of the views and perceptions of beneficiaries (women) ▪ Qualitative analysis of the opinions and perceptions/experiences of the local team ▪ Field observation	▪ Project Progress Reports (PPR) ▪ Lists of training participants ▪ Minutes and reports of key events (seminars, workshops, field visits, etc.)
Young people	▪ How were young people involved in project activities? ▪ What is the project's strategy for strengthening the capacities of young people?	▪ Documentary analysis ▪ Interviews with key stakeholders ▪ Interviews with beneficiaries	▪ Project Progress Reports (PPR) ▪ Lists of training participants ▪ Minutes and reports of key events (seminars, workshops, field visits, etc.)

APPENDIX 2. LIST OF INTERVIEWEES

Name	Institution	Position
Jorge Meza (FAO Representative in Brazil)	FAO Representative in Brazil	PDE Member
Gustavo Chianca	FAO BR	PDE Member
Manoel Timbó		PDE Member
Tiago Queiroz		PDE Member
Tiago Rocha		Coordinator of the Better Environment Area
Hernán González	FAO	FLO
Jéssica Casaza	FAO	LTO
Alexandre Henrique Bezerra Pires	MMA- National Project Director	Director of the Department to Combat Desertification
Valdineide Santana	MMA	Environmental Analyst
Alencar Garlet	SFB	Representative of the Northeast Regional Office
Frans Pareyn	Northeast Plants Association (APNE)	Coordinator
Nelzilane Oliveira	ACB	Technical Coordinator
Zilvania Nascimento		Administrative Assistant
Claudio Bernardino Vieira	Sítio Gerais, Monte Alverne District, Porteiras, CE. Chapada do Araripe	Family farmer
Tatiana Vieira	Chapada do Araripe	Family farmer
Auzileide Bezzera	Chapada do Araripe	Family farmer
Francisco Henrique Costa	Sítio Correntinho, Porteiras, CE. Chapada do Araripe	Family farmer
Maria Euzébia Pereira	Sítio Correntinho, Porteiras, CE. Chapada do Araripe	Family farmer
Maria Lucia Agostinho de Aquino	Engenho da Serra Farm, Chapada do Araripe	Family farmer
Adão	Engenho da Serra Farm, Chapada do Araripe	Family farmer
Francisco Campello	Araripe Foundation (FA)	Technical Director
Daniele de Carvalho Siebra		Coordinator of the REDESER Project in Uauá, trained in management and sustainable agroforestry systems
Cristiano Cardoso		Technician

Magno Feitosa		Technician; member of the board of directors
João Macedo		Technician
Ricardo Barreto		Technician
Clara		Communicator
Laura		Communicator
Jose Rodrigues	Antônio Neves Association – Baixa Grande Settlement, Jati, CE. Chapada do Araripe	Representative
João Oliveira, Maria Zilda, Adilson, Jose Nascimento (Tizé), Pedro, Cicero Pereira, Antonio da Silva (Xangai), Paulo Ferreira	Baixa Grande Settlement Project	Settlers
Marita (Marizinha)	Manoel José Timóteo Association – Baixa Grande Settlement, Jati, CE. Chapada do Araripe	President
Francisco da Silva	Manoel José Timóteo Association – Baixa Grande Settlement, Jati, CE. Chapada do Araripe	Vice President
Maria Anilda Pereira dos Santos	April 10 Settlement Project, Monte Alverne District, Porteiras, CE. Chapada do Araripe	Family farmer
Antônio	Association of the Quilombola Community of Souza da Chapada do Araripe	Extractivist, project participant
Lenie		Vice-treasurer of the Association of the Quilombola Community of Souza da Chapada do Araripe
Damiana		Representative
Francisca Zuila dos Santos	Pitombeira Quilombo Association, Santa Luzia, PB	President
Joscélio Cássio de Souza Medeiros	Quilombo Pitombeira, Santa Luzia, PB	Farmer and beekeeper
José Cabral de Medeiros (Zé Bala)	São Gonçalo, Santa Luzia, PB	farmer and meliponiculturist
Francisco Assis de Araújo and Rosália Araújo	PA Belmonte, São Mamede, PB	farmers and beekeeper
Iranildo Araújo de Medeiros	São Vicente, São José do Sabugi, PB	farmer and beekeeper
Maciel Souza Santos (Galego) and Maria do Socorro	PA São Vicente, Várzea, PB	farmers
José Bonifácio de Medeiros	PA São Vicente, Várzea, PB	farmers
José Damazio de Medeiros	PA São Vicente, Várzea, PB	farmers

Maria das Graças da Silva	PA São Vicente, Várzea, PB	meliponiculture farmer
Nelson Lopes	Terra Sertaneja Community Association (Acoterra), Monte Santo, BA; Family Agricultural School of the Sertão (EFASE)	Coordinator of the REDESER / EFASE Project
Adilson Ribeiro	Family Agribusiness Cooperative of Canudos, Uauá and Curaçá (COOPERCUC)	President
Alcides Peixinho do Nascimento	Ouricuri Pasture Fund Association, Uauá, BA	Experimental farmer; Vice President of IRPAA
João Bosco Dantas dos Santos	Testa Branca Community and Agricultural Association, Uauá, Bahia	President, experimental farmer
Maciel Da Silva Rodrigues	Community and Agricultural Association of Small Producers of Lages das Aroeiras, Uauá, BA	President; farmer
Rogemario Dias de Andrade	Capivara Community, Monte Santo, BA	Beekeeper
Lucas Souza de Andrade	Moquem Community, Monte Santo, BA	meliponiculturist
Manoel de Andrade Souza		farmer
Admilton da Mota Lima		farmer
João Batista Rocha Dantas (Saulo)		farmer
Luciene Marilac	Consulting and Management in Nature Studies, Human Development, and Agroecology (AGENDHA)	President
Mauricio Lins Aroucha	AGENDHA	Coordinator of the REDESER / AGENDHA Project
Bruna Vieira de Souza	AGENDHA	Field Coordinator for the REDESER Project
Tiago Cipriano de Jesus and Eudes Andrade dos Santos; Rafael (communication)	AGENDHA	REDESER Project technical team
Maria Alessandra Gomes da Silva and João Batista dos Santos	PA Maria Bonita (Km 44), Delmiro Gouveia/AL	farmer, farmer
Francisca Marta Alves de Medeiros Silva and Vandique Nascimento da Silva	PA Nossa Senhora Aparecida II, São Mamede, PB	farmers and meliponiculture practitioner
Damião Pereira Lima and Agailton Gonçalves de Souza	PA Nova Esperança II, Olho D'Água do Casado/AL	farmer, farmer
Everaldo Pereira dos Santos, José Vanildo da Silva Nunes, and Maria José Monteiro	PA Olga Benário (Lagoa Comprida), Piranhas/AL	female farmer, male farmer

Ita Porto	Diaconia - Seridó Territory	Field coordinator for the REDESER Project / Diaconia
Eliane Cecília	Diaconia - Seridó Territory	Technician
Paulo Henrique and Elaine Dantas	Barra Salgada, Carnaúba dos Dantas, RN	farmers
Maria Aparecida	Sítio Esperança, Carnaúba dos Dantas, RN	farmer, meliponiculturist
Segundo and Gorete Lopes	Olho D'Água do Boi, Parelhas, RN	Farmers
Ivaneide Maria	STTR, Parelhas, RN	President
Ginaldo and Marlene	Santana do Seridó, RN	farmers, beekeeper, and honey-bee farmer
Antônio Barbosa	One Million Cisterns Association (AP1MC)	AP1MC Manager
Claudio Almeida	One Million Cisterns Association (AP1MC)	Technician
Raimundo Gonçalves Ferreira	Vida Verde	Technical Director

Table A1. REDESER financing and co-financing, based on ProDoc and PIR in US dollars.

ProDoc forecast		Planned and executed according to PIR		Variation based on PIR
Co-financier/ GEF	**Estimated amount**	**Amount confirmed by co-financier - endorsement/approval + GEF**	**Amount disbursed by the partner - 01/23/2026 + GEF**	
Advisory and Management on Nature Studies, Human Development and Agroecology (AGENDHA)	160,000	160,000	200,400	25.25%
Northeast Plants Association (APNE)	160,000	160,000	152,782	-4.51%
Technological Park Foundation of Paraíba (CEPIS)	533,333	533,333	0	
Araripe Foundation (FA)	160,000	160,000	474,545	196.59%
Food and Agriculture Organization of the United Nations (FAO/UN)	200,000	200,000	300,000	0.00%
Technological and Cultural Education Foundation (Funetec)	800,000	800,000	0	
Brazilian Institute of Development and Sustainability (IABS)	266,666	266,666	0	
World Agroforestry Center (ICRAF)	100,000	100,000	0	
National Semi-arid Institute (INSA)	1,333,333	1,333,333	0	
Ministry of Agrarian Development (MDA)	3,360,000	3,360,000	0	
Ministry of Environment (MMA)	1,866,667	1,866,667	4,057,340	117.36%
Secretariat of Family Farming and Development of the Semi-arid (SEAFDS) (Paraíba)	1,066,667	1,066,667	0	
Support Services for Alternative Community Projects (SEAPAC) (Rio Grande do Norte)	160,000	160,000	0	
State Secretariat of Infra-Structure, Water Resources, Environment and Science	800,000	0	0	

and Technology (SEIHRMACT) (Paraíba)				
Secretariat of Environment (SEMA) (Crato)	533,334	0	110,000	
Secretariat of Environment and Water Resources (SEMARH) (Alagoas)	533,333	0	0	
Rio Grande do Norte Planning Secretariat (SEPLAN) (Rio Grande do Norte)	1,066,666	1,066,666	560,000	-47.50%
Brazilian Forestry Service (SFB)	2,666,667	0	1,750,800	
Family Agribusiness Cooperative of Canudos, Uauá and Curaçá *COOPERCUC		0	266,660	
*EFASE		0	179,900	
Total co-financing	**15,766,666**	**11,233,332**	**8,052,427**	-28.32%
GEF support	**3,930,155**	**3,930,155**	**3,930,155**	0.00%
Total	**19,696,821**	**15,163,487**	**11,982,582**	-20.98%

Field reports. Records on the field assessment mission

Highlight 1. Agroforestry Systems (AFSs) in the Araripe Territory (Crato, CE). Food security and production improvement in family units.

Jointly with ACB, the project developed management capacities and supported the implementation of AFSs on six properties (Demonstration Units). Based on technical knowledge of AFSs and local knowledge, the project continued and greatly strengthened activities that complemented the income and subsistence of these families with lower density. The activity began in late 2022 and continues to yield results for the farmers involved in the project.

In the Araripe territory, the implementation and strengthening of good practices in integrated natural resource management (INRM) was conceived for local populations in the Araripe Territory, the municipality of Crato, and the surrounding area through sustainable food production that promotes landscape recovery, taking as a reference practice in domestic gardens and diversified agroforestry systems (AFS).

Based on relationships built up by the regional social movement and its formal and informal organizations, locations with an available area of up to 0.5 ha were selected where agroecological transition was already underway, with the capacity to produce food without pesticides, prioritizing low-income families in production units managed by women, either directly or through their strong leadership in decision-making and the implementation of technologies related to AFSs.

The actions were carried out through a participatory diagnosis, developed with a process of active listening to producers and identification of six areas for the implementation of Demonstration Units, aiming to develop technical capacities through training focused on INRM, including diversified vegetable production, sustainable extractivism, seed collection and seedling production, commercialization and participatory certification of production. Next, inputs were purchased and collective efforts were made to implement AFSs in the six areas.

The training was seen by partners and beneficiaries as key to promoting theoretical and practical knowledge about sustainable practices, the impacts of actions that can degrade the environment, and biodiversity conservation through seed collection as a preservation strategy. The content covered nowadays is part of the participants' routines, strengthening pesticide-free food and the responsible use of natural resources. This demonstrates a possible impact of REDESER, i.e., the training shows concrete changes in farmers' activities, and its continuity provides sustainability and a possible impact on the expansion of conservation practices and income generation, whether monetary or not.

Through field activities in this assessment, the areas nominated in the project stand out:

- Pedra Branca (Gerais farm) with a young couple and four young daughters. The property had 1.5 acres of extremely rocky land, but with access to a reservoir in its lower portion. Prior to the project, vegetables, beans, cassava, corn, and fava beans were produced, in addition to bananas and sugarcane, as well as a small goat pen. A productive backyard was implemented to produce forage, vegetables, fruit, medicinal, and ornamental plants. To boost production, the project also supported the irrigation of the garden from the reservoir and the use of mulch with algae and other aquatic plants.

- Capim Santo area, managed by a woman. Prior to the project, the area had limited production, cultivated through composting, with chicken and goat farming. There was little knowledge of the technologies proposed by REDESER. With the introduction of AFSs and capacity building, vegetable production was intensified and aroeira seeds began to be produced. The project not only contributes to food security but also continued to strengthen the social situation of the participants, who had experienced domestic violence.
- The Manga Espada area on the Correntinho farm, with about 5 tasks, belongs to a family consisting of a mother and about four young people. Unlike the other areas, productive work in Manga Espada is carried out by a young couple, aged around 30, who demonstrate the capacity for continuity and an intention to expand their production, in line with older people, especially the matriarch of the family.

  Prior to the project, the area was already undergoing agroecological transition, with the production of pesticide-free vegetables and fruits for exchange within the community and for commercial sale. The sale of vegetables was directed, in part, directly to the local cooperative. Currently, the expectation is to use new technologies and incorporate small machines to increase labor productivity. Through REDESER, one of the young people (an agricultural technician) joined the ACB team, providing support for the implementation of the project on other properties.
- Flor de Maracujá, in Engenho da Serra, consists of a couple and two young people (son and niece). The unit has 0.5 hectares where production was strengthened through a biodiverse AFS. Until the start of the project, the family farmer supported her family by growing vegetables, fruit trees, and native species. The owner's practical and theoretical knowledge allowed for the expansion of the planting area with a combination of different species. With support from REDESER, agroecological techniques for yard management were improved, continuing activities with medicinal and culinary herbs, fibers (cotton), fruit trees (acerola, seriguela, banana, lemons, etc.), coffee, and intensified meliponiculture.

In all areas, the beneficiaries reiterated that the project provided knowledge, strengthened the sense of belonging to the land, and increased the productive capacity of family units. It also strengthened solidarity practices involving exchanges between farmers and the commercialization of vegetables and fruits from agroforests, supplying the community and the micro-region with quality products.

Built on well-established local and regional socio-political foundations, including the promotion of agroecology, the results of REDESER have fostered the expectation that people will continue to make a living from the natural resources on their properties and expand production. The scenario immediately prior to the project's intervention was one of maintaining a low production prospects, which, even on reasonably established agroecological bases, faced challenges to its sustainability.

Photo. Vegetables planted on the property of Mr. Henrique and Mrs. Euzébia. Photo. Bernardo Anache. September 2025.

Photo. AFS implemented on Mrs. Maria Lucia's property. Photo. Bernardo Anache. September, 2025.

The continuity and expansion in production for Food Security and Nutrition, local trade, and fairs face challenges related to difficulties in obtaining inputs for production (substrate, seeds, and seedlings), technological contributions to define best practices for management of new species, and a better understanding of the gender relations involved in the implementation, management, and generation of products and monetary and non-monetary income from AFSs led by women. Therefore, there is an understanding that REDESER could benefit—and leave a legacy in this regard—from conducting studies on the dynamics of AFSs and gender, an activity that was not included in FAO project.

In this context, it should be noted that REDESER contributed to the achievement of the results of Component 1. Promotion of Integrated Natural Resource Management (INRM) in productive landscapes in the Caatinga and its objective of promoting, informing, and disseminating sustainable practices for family farming, including support and dialogue aimed at broadening understanding and the exercise of agroecological practices.

Highlight 2. Strengthening of good INRM practices related to plant extraction in the Araripe Territory.

In Chapada do Araripe, the Araripe Foundation strengthened good INRM practices in the area of the Quilombo Souza Association and others in the neighborhood (including users of the Araripe National Forest), focusing on production planning and the improvement of processes related to plant extraction, the processing and marketing of native fruit products (pequi, mangaba, and others) and fava d'anta (raw material for pharmaceuticals) in quilombola and family farming territories.

Exchanges, training, and capacity building provide important technical knowledge to communities. Women make up most of the audience at these events. Young people, despite devoting a substantial part of their time to education, perform various functions in support of extractivism.

The ongoing actions are part of the socio-productive diagnosis of the territory, including the mapping of areas available for planting, with the aim of increasing the density of plants of

species of interest, thus ensuring continuity in production, even if the collection areas, mostly located on private land, are reduced in the future.

The beneficiaries are grateful to the Araripe Foundation for its continued support. Extractivism has become part of the identity of the communities, who affirm it with pride. The activity is an important source of seasonal income. Today, despite fluctuations, product prices have improved, as have marketing conditions. Local organizations have become well known. The equipment provided by REDESER facilitates collection and lightens the workload.

Highlight 3. Agroforestry systems (AFSs) for forage and fruit trees, beekeeping, meliponiculture, and soil and water conservation practices in territories in Uauá and Monte Santo, Bahia.

In Bahia, the Araripe Foundation implemented Agreement Letter 003/2024 (September 2023–December 2024). In Uauá, the partnership with COOPERCUC (including dialogue with the Regional Institute for Appropriate Small-Scale Agriculture and Livestock - IRPAA) and the Sertão Agricultural Family School (EFASE) strengthened agroecology in communities in Fundo de Pasto. Through meetings and technical visits, fifteen communities were mobilized, culminating in the REDESER launch seminar (2023). The ATER team brought together young local professionals, graduates of EFASE, with gender balance.

The fight against deforestation and the sustainable use of the Caatinga were based on regional best practices. The selection of practices supported by REDESER was done through Integrated Natural Resource Management Plans (INRM), developed based on the mapping of the Fundos de Pasto. The prioritized actions were Agroforestry Systems (AFS – Agrocaatinga, whose model was developed by IRPAA, is known by local communities, and was monitored by the Bem Diverso project, by Embrapa Semiárido), Silvopastoral Systems, forage management, Zero Base Dams (BBZ), beekeeping and meliponiculture, with a "learning by doing" methodology and collective efforts.

In Uauá (average rainfall of 600 mm), the communities welcomed the following practices:

- Ouricuri – irrigated Agrocaatinga, forage AFS, meliponiculture, and gully containment structure, also used in the Fundo de Pasto area to resist invasions by a mining company.
- Testa Branca – silvopastoral management, BBZ, and support for beekeeping with equipment and PPE; home to Coopercuc's goat milk dairy.
- Lages das Aroeiras – environmental recovery, irrigated AFS, and beekeeping. Distribution via COOPERCUC and presence of a popsicle factory.
- In Monte Santo (average rainfall of 800 mm), the training of young technicians stood out. The communities implemented:
- Capivara – silvopastoral AFS and consolidated beekeeping, the beekeeper acquired equipment for processing honey and honeycomb wax production with his own resources, before REDESER; he has been manufacturing boxes and monitoring bee flora for 10 years.
- Muquém – meliponary (mandaçaia and manduri), silvopastoral AFS and BBZ. The selection of locations for the implementation of the DUs is strategic, close to roads. The area where a BBZ was built (still partial, with only two dams) received heavy rain shortly after installation. People passed by and observed how the

structure retained the soil and filtered the water. This generated comments in the community.

- Lagoa da Ilha – Silvopastoral AFS with fruit trees and forage management in Fundo de Pasto, using a weir for the implementation of irrigated AFS.

The beneficiaries are community leaders with a long history in the social movement and experience in living in the semi-arid region. Many have expanded the AFS areas beyond those supported by the project. Pasture funds vary in size and intensity of use. Also, more accessible areas are used more intensively and are subject to greater degradation due to overgrazing, which reinforces the importance of INRM plans. A sensitive issue was the inventory of timber potential promoted by FAO. Due to the land tenure context in the region, many communities strongly oppose the extraction of timber products, even for local use. In other areas, the controlled use of these resources is accepted. This suggests the need to adjust the proposed management practices for interventions and to listen more closely to local demands.

Five field days and one course were held, with 132 participants (39% women), addressing soil conservation, beekeeping, meliponiculture, and seedling production. The REDESER Territorial Seminar (2023) brought together more than 150 farmers, with the delivery of INRM Plans and exchange of experiences. Communication was strategic in achieving results and strengthening REDESER's territorial coordination in Bahia, with extensive use of social networks, WhatsApp groups, videos, and graphic materials, in partnership with EFASE, COOPERCUC, and UNIVASF.

In this context, it should be noted that caatingas are different. The main lessons learned relate to adapting proposed management practices to local realities and the importance of community leadership and the role of women and young people. Although women are not heavily involved in the more technological aspects of animal production, they participate even more than men in some areas. REDESER's work has helped to identify productive, land, social, and other potential in the region and has contributed to raising the profile of women's role. Women contribute significantly to Food Security and Nutrition through their activities in their backyards and around the house, and they help as laborers in various activities. In addition, women play a strong leading role, participating in decision-making at both the family and community levels. In general, women outnumber men at local association meetings. In some places, REDESER's actions promote the formation/animation of women's groups.

Some locations have more young people participating, others less, depending on the local context. In addition, there is a perception that interaction with school-age youth involves the inclusion of environmental/technological themes in the curriculum, encouraging debate with parents, who receive information during local association activities. The participation of young people in productive activities is less intense in Uauá, but in Monte Santo it was enhanced by the integration between the agricultural school, local Fundo de Pasto associations, and cooperatives (Coopercuc and CooperSabores), strengthening sustainability. Finally, we highlight the role of communication with the internal audience, which was fundamental to achieving the project's results.

Highlight 4. Agroforestry Systems (AFSs) in the Xingó Territory (AL). Food security and production improvement in family units.

AGENDHA executed the LoA with remarkable technical and methodological rigor. To begin the work, the organization conducted intensive consultations with partners from social

movements and regional networks, including the MST, from a sociopolitical and agroecological perspective. Thirty family farmers were identified from five Agrarian Reform Settlement projects and one from the National Land Credit Program (PNCF), with two settlements on each, except in Delmiro Gouveia, where one settlement and one PNCF were included. In this municipality, REDESER supported the Maria Bonita/Km 44 PA and the Bom Jesus/Serra Negra PNCF in Olho D'água do Casado, the Costa II PA and Nova Esperança PA, and in Piranhas, the Dois Irmãos PA and Lagoa Comprida PA. All family areas were georeferenced and mapped. The area per family ranges from 0.26 ha to 2.14 ha.

In partnership with family farmers, the project implemented social mobilization strategies (e.g., opening and closing meetings for the project in the territory and the proposal to create the Alagoas Network for the Recovery of Degraded Areas - ARADAS Network) and participatory strategies for the recovery of degraded areas aimed at ensuring forage production for cattle, goat, sheep, and poultry farms, valuing traditional knowledge and integrating sustainable practices that regenerate the soil and prevent erosion.

The technical actions of the project were carried out based on agroecological ATES strategies. Management practices were implemented mainly through collective efforts, in the form of field days. For dissemination and learning, a social communication strategy was implemented for internal and external audiences. In addition, in June 2025, the seminar "Cultivating Water in the Caatingas" was held, focusing on the presentation of results and exchange of experiences, with field days involving beneficiary families and communities, government representatives, and federal institutes.

The reinforcement of sustainable management practices involved the adoption of soil conservation and restoration techniques, with agroecological methods adjusted to the local context and productive diversification integrating animal production with food security, contributing to reducing the effects of climate change, increasing the resilience of families, and consolidating the logic of coexistence with the Semi-Arid region. The following technologies, which are already being worked on by AGENDHA in the regional context, were implemented: Ramps. Agroecological reserves of Mandacarus, Palmas, and other socio-ethnobiodiversity forage plants (cacti with high protein content, used between rows to produce corn, beans, and forage), Barrocais. Retention ponds with stepped rock walls for crops in alluvial plains using socio-ethnobiodiversity species (minimum of three ponds per household), Riparian Agroforestry Systems. Riparian Agroforestry Systems with socio-ethnobiodiversity species, and RAD Areas – Recovery of Degraded Areas with socio-ethnobiodiversity species (AGENDHA, 2024).

Under the contract, AGENDHA's implementation of the actions covered the period from June 2024 to April 2025. Due to factors beyond the organization's control, mainly the flow of administrative approval from FAO and the release of funds for the acquisition of materials and services, it was necessary to adjust the implementation schedule. Thus, there were still activities being carried out that depended on rainfall (expected at the end of October), such as the distribution of seedlings and the planting of some species that are components of agroforestry systems.

The approach to the communities and families embraced by AGENDHA allowed for the creation of strong emotional bonds and mutual respect, which enabled the work to be carried out with a high degree of technical rigor, possibly the highest among all REDESER Priority Areas. The involvement of families was key in the planning and execution of management

practices, species diversification, and adaptation to climatic adversities, which, in addition to environmental benefits, increases the socioeconomic sustainability and autonomy of rural communities. However, it was identified that monitoring actions close to farmers is vital for success, requiring the maintenance of technical assistance. Additionally, AGENDHA understands that it is an advisory body to farmers and their organizations. Therefore, as its institutional mission does not include research development, it maintains partnerships with research and extension entities that perform this role. In this sense, AGENDHA sees great potential for the systematization of technical knowledge and the conduct of research that can provide greater scientific support for its work, including in areas that have received intervention from REDESER. For this reason, the institution felt uncomfortable that it had not been invited to participate in the Symposium on Combating Desertification, held at the end of October 2025, which "aimed to promote collaborative and integrated responses, valuing the exchange of academic and popular knowledge, the sharing of experiences, and the construction of sustainable solutions."

This context reinforced the potential for disseminating good practices to scale up ecological restoration and sustainable agriculture. Farmers with whom we interacted reported that their neighbors were interested in the technologies tested and expressed that they could expand the areas where they are used in family units in the surrounding areas, based on mutual aid initiatives. AGENDHA committed to voluntarily providing technical support for the implementation of these systems in the Xingó territory. This institutional commitment is one of the actions that make up the project's exit strategy. In terms of local partnerships, AGENDHA suggests that the planting of AFSs in settlement projects should be coordinated so that they are counted towards the MST's state target for the "National Plant Trees and Produce Healthy Food," launched in 2020.

In this regard, for the project's closing seminar (October 2025), AGENDHA encouraged settlers to call on the MST's state leadership. It was also coordinating the presence of state agencies, such as the State Environmental Institute (IMA) and public banks, to better understand the rural reality and adjust their positions and procedures related to the relationship between the environment and productive activities, and the availability of rural credit.

Furthermore, AGENDHA actively sought other ways to maintain the sustainability of the REDESER proposal in the region. The organization was beginning the implementation phase of an ecological restoration project supported by the Brazilian Biodiversity Fund (FUNBIO) / BNDES, in the “Caatinga Viva” Call for Proposals, in the context of the Floresta Viva initiative. The project is aimed at priority arid municipalities in the state of Bahia and will be executed using a technology similar to that applied in REDESER.

Highlight 5. Timber Forest Management Plans in Agrarian Reform Settlement projects and strengthening of good practices in plant extraction in Territories in Chapada do Araripe, CE.

In effect from 10 April 2025 to 30 November 2025, the contract with the Araripe Foundation for the provision of services for the preparation of Sustainable Forest Management Plans (SFMP) in the caatinga – Araripe Priority Area. A comparative analysis of the supply and demand for forest products in this Priority Area revealed a critical scenario: while demand reaches 4,370,180.04 st per year, legal production reaches only 157,441.00 st per year—equivalent to about 3.6% of local needs. This shows that sustainable forest exploitation is

insufficient and that most consumption continues to be supplied by predatory practices based on deforestation, which accelerate the process of desertification in the region.

The Araripe Foundation mapped and diagnosed areas of interest in the Araripe Bioregion in Ceará and Pernambuco, identifying active and inactive SFMP and potential areas. It conducted an analysis of national, regional, and state actors with local operations, as well as local actors involved in the forest management production chain, and established a Training Plan to be carried out in two modules, each lasting a total of 8 hours, aimed at an audience composed of family farmers, extractivists, rural settlements, technicians, extension workers, agricultural college students, and community leaders. The topics covered were Module 1 - Sustainable Multiple Use Forest Management Plans for the Caatinga, Module 2 - Integration of Management with other productive activities. Originally, training in management of activities by settlers was not planned but was later incorporated into the set of actions to be carried out. The basic regulation for the SFMP is CONAMA Resolution No. 507/2024, discussed in a course on forest management in the Caatinga, with the participation of OEMAs (including SEMACE) and IBAMA, held at the end of September 2025.

In Ceará, the Araripe Foundation, in partnership with INCRA/CE, identified five Agrarian Reform Settlement projects considered strategic for the development of a Multiple and Sustainable Use Management Plan related to the production of firewood and cuttings, silvopastoral activities, beekeeping, and seed production. Of these, the evaluation team visited the Baixa Grande PA, in the municipality of Jati/CE, with a total of 8,485.8 ha and an inactive forest management area of 1,106.81 ha. There are two other PAs in the region, with a combined potential area of 3,500 ha for SFMP.

The Baixa Grande PA is considered an achievement of the families together with the MST, after years of camping. There are two settler associations in the same PA, one in each area. Women play a strong leading role, including in the leadership of the Timóteo community association. In addition to social benefits, the main monetary income comes from small livestock farming and beekeeping. SFM is seen as the only alternative (hope) for a slightly higher income envisioned by the community, to counteract the departure of their children in search of work in the southeast/south of the country.

The settlers have extensive knowledge of the caatinga, but both associations have limited knowledge from both a technical-forestry and SFMP management perspective, relying on external technical support to perform these functions. There is no mature discussion about the division of labor and income to be obtained.

The Forest Management Plan was being developed in the short term, with completion scheduled for December 2025. Training, to be provided by the FA and the Center for Studies and Research, was scheduled to take place soon, including a short training event on commercial enterprise management, with a methodology appropriate to the reality of the PAs. This is clearly insufficient.

The FA has committed to continuing its support for the SFMP after the completion of REDESER but does not have the resources to do so.

Highlight 6. Diversified forage agroforestry systems (AFSs), beekeeping and meliponiculture, and sustainable forest management in the Seridó Territory (Paraíba and Rio Grande do Norte)

Diaconia carried out LoA in Seridó Potiguar. Originating from old pan-ecclesial articulations in the 1960s, in the context of the fight against the dictatorship. It operates throughout the Northeast, in networks, including agroecology and strategies for coexistence with the semi-arid region. It seeks to influence public policies for family farming and Traditional Peoples and Communities Territories (PCT). The Araripe Foundation implemented LoA in the Seridó region of Paraíba. The company Verde Vida Engenharia implemented LoA throughout the Seridó territory covered by REDESER.

There was a significant delay in hiring LoAs executing institutions. The decentralization of implementation in Seridó was made possible by FAO through a review of the originally proposed territorial coverage, which was treated as a single block and resulted in a lack of interested organizations. This led to a subdivision between the Potiguar and Paraiba portions and the separation of INRM and SFM actions.

FAO administrative issues in hiring caused further delays in the implementation of planned activities, with postponement in the release of funds. The deadline, which was already short, was drastically reduced. Diaconia had about eight months to implement the actions and FA less than six months, affecting deliveries and compromising results, which were affected by the loss of the planting season for temporary crops and non-cactus forest species.

Diaconia and the Araripe Foundation had no previous experience in these territories. The identification of locations and beneficiary families was made possible by the formation of a technical team with professionals with local involvement and coordination with family farming representatives and social movements (STTR, FETAERN, MST), complemented by public agencies (City Halls, EMATER RN). Diaconia initially benefited from the prior identification of families during the prospecting phase for MFS beneficiaries in RN, carried out by Verde Vida.

Field mission in Seridó

Diaconia, RN, with the participation of Ita Porto and Eliane Cecília. 21 and 24 October.

Araripe Foundation, PB - with the participation of Magno Feitosa and João Macedo. 22 and 23 October.

Socioeconomic context of family farming production and competing activities

In addition to agricultural production, already limited by labor shortages and the aging of family members who remain in the countryside, there are few options for generating income in rural areas in Seridó. Also, the size of the areas and the length of time they have been used limit the possibility of sustainable firewood production. A potential source of income in the area near the mountains on the border between the states of RN and PB (Santa Luzia region) is the income from loan agreements between family units and wind power companies and, to a lesser extent, solar power companies. However, according to local people, despite the appeal of a fixed income with little effort, such contracts block the use of land by family farmers, preventing access to rural credit via PRONAF. There are reports of the effects of wind power on daily life and animal production: when wind turbine blades are installed close to homes, their constant noise causes intense discomfort to people. Animals are also disturbed, with interference in the heat cycles of cows and goats. Several testimonies pointed out that many people were misled by the prospect of easy income, but when they realized they had made a mistake, they were already bound by a contract that was disadvantageous to them.

Climate emergency in RN and PB

Some of the municipalities in Seridó are experiencing severe drought, with a formal declaration of Climate Emergency by the Ministry of Regional Integration (https://s2id.mi.gov.br/)[1]. In the field, the situation is evident. One farmer said that he had only witnessed drought like this in 2013.

One of the strategies for coping with drought is access to quality water. There are community and individual wells, but many are brackish, with varying concentrations of salts (sodium, magnesium, and others), depending on the location. This requires desalination equipment, which is expensive and not always available. Individually, the opening of wells, which in most cases provide varying volumes of water and degrees of salinity, is limited by the physical condition of the land, the family's financial resources, and the applied technology. There are several cases of wells collapsing after little use, resulting in a loss of investment.

Because of this situation, AFS with forage crops have been allocated whenever possible near lowlands, which are less affected by salinity. However, planting fruit trees in domestic gardens, when dependent on irrigation, becomes practically unfeasible in these environmental conditions, as demonstrated by the failure of several attempts.

Despite the objective difficulties in predicting the occurrence of droughts and their severity, drought is a structural problem in the ASDs, and in the REDESER priority area in Seridó. Regional limitations related to water availability and quality are well known. Therefore, this situation should have been better addressed before the start of REDESER interventions, during the initial diagnosis of the project and the selected PAs.

Networking

In response to what they perceived as REDESER's failure to facilitate exchanges and coordination between the organizations executing LoA, Diaconia and AGENDHA proposed a self-managed activity at the Brazilian Congress of Agroecology (CBA), which took place in October 2025: Experiences of Combating Desertification by the REDESER Project Network of Organizations. FAO reported that this activity was not conducted by REDESER, which did not attend the CBA because the action was not included in the Work Plan. MMA also did not attend the event.

The Araripe Foundation was present at the self-managed activity, where it presented the history of the Project from its perspective and the actions developed during the implementation of REDESER's LoAs. Diaconia and AGENDHA also made presentations.

REDESER actions in Seridó

INRM's actions are linked to improving animal feed (forage AFSs), and Food Security and Nutrition (FSN) and supplementing family income through diversified AFSs (including fruit and honey-producing species), beekeeping, and meliponiculture. Diaconia implements LoA in Seridó Potiguar and Fundação Araripe in Seridó Paraíba. The company Verde Vida, which already worked with wind power companies in Seridó (RN/PB), was selected to work with MFS.

Forage AFSs: Mr. Francisco, PA Belmonte, in Várzea, PB, was not familiar with AFSs. He did not attend the exchange program, but he trusted the technicians. He already had experience planting mandacaru (or *cardeiro*). He believed that it was not necessary to plant xique-xique, as there was plenty of it in the area. He proposed using cacti and other species on the edges

of forage AFSs. He was interested in planting wild beans to increase their presence in the AFS area. In the past, he had had problems with IBAMA agents for cutting mandacaru during the dry season. The situation went to court, with the farmers winning the case. Suspicious at first, he now believes he can continue without the presence of technicians, talking to neighbors and exchanging experiences about the forage AFS.

Diaconia negotiated with FAO for financial support for AFS irrigation. Mr. Ginaldo (Santana do Seridó, RN) coordinated with the municipal government to provide machinery to make it possible to level the area (stony Luvisol soil, with serious physical limitations, notably its impermeability, and shallow effective depth), where he will plant irrigated forage AFS to improve conditions for plant establishment.

Diversified AFSs: AFSs were initially conceived solely as a strategy to expand animal feed sources (forage) and, in part, as bee/melipona flora. Later, mainly due to demand from women, more diversified AFSs were allowed, with fruit trees in domestic backyards (or productive backyards). However, in some places, such as Quilombo Pitombeira, PB, the water available for watering the backyards is brackish, limiting the planting of fruit trees to the rainy season only.

The happiness of women with the implementation of their AFSs in their backyards is evident, as it gives them productive autonomy and supplementary income. Some production units with AFSs already implemented before REDESER direct part of their production to the PNAE.

Beekeeping: A beekeeper from Rio Grande do Norte also received support to expand his business, which already consisted of 65 hives, including the production of honey extractors and hive boxes.

In Paraíba, the Araripe Foundation is supporting the construction of a Honey House, the basic structure of which had already been started by a private producer (Iranildo Araújo, in São José do Sabugi, Paraíba). He works with a group of 12 beekeepers/farmers, providing mutual support, exchanging technical information, and sharing workdays in collective efforts. The farmer is a pioneer, having developed diversified AFSs for 18 years, supported by the Community Promotion and Action Program (PROPAC). In addition, he practices BBZ in his area and produces fruit pulp for the PNAE. He produces seedlings of some forest species (gliricidia, moringa, cajarana), including supplying REDESER. He produces silage but sometimes he sells it because he has enough food for his cattle.

Apiary in São José do Sabugi, PB.

Diversified AFS in a women's productive backyard in Carnaúba dos Dantas, RN.

Photos: Geraldo M. Silva, October 2025.

He has an apiary with 30 hives but wants to reach 60 to become a professional beekeeper. Despite being in the vicinity of the PB PA, he received support to complete the construction of a Honey House and some equipment, to benefit the expanded group. Once REDESER ends, the beekeeper and his group will be responsible for dealing with health surveillance licensing, which would not be completed by the end of the project. The local FA technician (J. Macedo) was coordinating support to address existing technical issues, using another Honey House in the region as a reference. There is no provision for additional resources to adjust, if required, or for the licensing process.

Meliponiculture: In general, each family receives two populated boxes (northeastern model). Women are the main recipients, stating that they have affection and dedication to stingless bees. In Carnaúba dos Dantas, RN, Diaconia created a mechanism similar to a Solidarity Revolving Fund, whereby people who received populated hives (Jandaíras) and empty boxes commit to dividing the melipona families and delivering new hives to another family in the region, expanding the reach of native bee breeding. There is also a meliponiculture farmer

who has maintained 60 Jandaíra hives since before REDESER, from which he received support to expand his breeding.

MFS: A producer visited in Carnaúba dos Dantas, RN, reported that studies to implement the SFM timber plan were still ongoing (end of October). He understands that the objective of SFM is not the production of wood products, but rather the sale of credits on the carbon market, at least for family farmers, but he was unable to provide details on how the system would operate. In contrast, Diaconia reported that they maintain a different perspective, that of Payment for Ecosystem Services. These different options are in dispute in the region. We do not have information about SFM in business areas. The company Verde Vida reported that the future option of trading carbon credit was presented to beneficiaries, as is a current trend.

In PB, we identified a major concern among farmers regarding timber-based SFM in Agrarian Reform settlements. In a PA in the municipality of Várzea, in a remote area where the soil is extremely rocky and the water tends to be saline, plans were being drawn up for SFM on individual plots of land belonging to settlers (of around 40 hectares[2]), with a planned cutting cycle of 15 years and annual cutting areas of 1.5 to 2 hectares. When asked, the farmers replied that they understood that the caatinga might be able to regenerate during this period, despite the environmental limitations, but they were unaware of the technical recommendations for Seridó (IN CONAMA 507/2024 and the content of the book published by MMA in 2024).

They stated that they do not have technical mastery of SFM plans or the management of such enterprises, despite being partially familiar with some technical procedures and legal requirements. They consider that there have not been sufficient training events. When asked directly if they could carry out the work of implementing SFM on their own, they emphatically stated that they could not. In fact, two gentlemen argued that "if there are going to be problems, if there is going to be illegal production," they would prefer to "stop there and do nothing." The technical manager at Verde Vida Engenharia, on the other hand, reported that the possibility of hiring a third party to operate the SFM with the farmers' permission and the company's guidance, sharing the profits and expenses, had been discussed.

[1] Other sources of information in the regional media:

https://www.patosonline.com/noticia/269573/paraiba-tem-120-cidades-em-situacao-de-emergencia-aponta-ministerio-da-integracao, https://g1.globo.com/rn/rio-grande-do-norte/noticia/2025/10/01/governo-rn-emergencia-seca-cidades-lista.ghtml.

[2] According to information from local technicians, the Fiscal Module in the region covers approximately 200 ha. Settled farmers claim that it is better to have little land, with limitations, than to live subjugated by the farmer, as was the case in the past.

Appendix 3. GEF evaluation criteria rating table

The table below should be completed by the evaluation team as part of the terminal evaluation process. See Appendix 4 for guidance on the rating schemes under each area of analysis.

GEF criteria/dimensions	Rating[15]	Summary comments[16]
A. OUTCOMES (relevance, coherence, effectiveness and progress to impact, efficiency)		
A1. Relevance	HS	The project was relevant in addressing the demands of the National Policy to Combat Desertification (PNCD), being a key project for the development of integrated natural resource management (INRM), capacity building in the field, and strengthening public policies.
A2. Coherence	S	From its conception to its implementation, the project was aligned with the United Nations Convention to Combat Desertification (UNCCD), the priorities of GEF cycle 5 – promoting sustainable development and maintaining ecosystem services – and recent policies and programs (PAB-Brazil 2025-2045, PPCaatinga, and other national initiatives). It also dialogues with GEF initiatives such as Conecta Caatinga and ARCA and FAO (GIAHS), reinforcing institutional synergies and the logic of integrated land management.
A3. Efficiency	MS	There was less co-financing than expected in the initial project document, but implementation was optimized through LoA, contracts, and co-financing with local partners, ensuring the expected implementation and delivery

[15] See rating scheme in Appendix 4.

[16] Include reference to the relevant sections in the report.

GEF criteria/dimensions	Rating[15]	Summary comments[16]
		of the project. The PMU dedicated itself to replanning based on the MTR, adjusting actions and schedules while maintaining a focus on results. Interventions in PAs through contracts and LoAs, bringing together delivery elements from more than one project component, enabled cost reductions and execution in less time (taking advantage of the same mobilization process).
A4. Effectiveness	MS	The project achieved or exceeded several targets, contributed to the development of forest management plans in priority areas (PAs), supported INRM-related livelihood activities and capacity development involving women and young people, and generated knowledge and technical inputs potentially relevant to strengthening the PNCD. However, the consolidation, scalability, and long-term sustainability of several interventions remain uncertain, particularly in light of the limited restoration results achieved and continued dependence on technical assistance and institutional support.
B. SUSTAINABILITY (financial, sociopolitical, institutional and governance, environmental dimensions including risks to sustainability)	L	The sustainability of REDESER lies in exit strategies supported by voluntary commitments and local networks: ACB, FA, EFASE, AGENDHA, and Diaconia coordinate technical assistance, productive and social integration, and access to policies (PAA, PNAE, state programs) and new projects (e.g., "Caatinga Viva"). In addition, the content developed as input for public policies, such as the PNCD and

GEF criteria/dimensions	Rating[15]	Summary comments[16]
		the systematization of COP 16 results on desertification, will strengthen the federal government's ability to consolidate new commitments on this agenda. However, there is a risk that the diagnoses developed by the project for interventions in the PAs will not be disseminated and/or used, in addition to the implementation of forest management plans that were only developed in the project.
C. IMPLEMENTATION	MS	FAO was responsible for the implementation and execution of REDESER, coordinated by MMA through the Department to Combat Desertification (DCDE). The project was implemented in line with the project document, despite political and institutional changes affecting the federal context. Through adjustments to the work plan during the 2022-25 period and implementation through LoA and contracts, the project maintained operational continuity and contributed to actions targeting INRM, forest management, and restoration in priority areas, supporting the project's target audience. However, limitations related to partner integration and institutional uptake affected the continuity and consolidation of some actions.
D. EXECUTION	MS	Response included in item C (Implementation) above.
M&E plan	U	Despite indications provided for in the ProDoc structure, REDESER did not have a specific monitoring and evaluation system, with a budget and staff fully dedicated to

GEF criteria/dimensions	Rating[15]	Summary comments[16]
		this function. Historical accumulations of a sociopolitical and technological nature in the territories were disregarded in the calculation of the REDESER Baseline, set at zero for all actions.
M&E implementation	MS	FAO conducted field missions and used instruments such as work plans, PIRs, and PPRs, to support project monitoring and follow-up. However, the evaluation identified persistent weaknesses related to indicator consistency, traceability of results, data disaggregation, and changes in targets and indicators during implementation, which limited the accuracy and transparency of the M&E system.
Overall project rating	**MS**	REDESER was aligned with FAO priorities, GEF Cycle 5, and national public policies to combat desertification, and contributed to restoration-related practices, management plans, and Food Security and Nutrition actions involving family farmers and traditional communities in priority areas. The project also generated technical inputs that may inform future interventions in the Caatinga. However, the Unsatisfactory M&E design, together with Moderately Satisfactory ratings for effectiveness, efficiency, implementation and execution, and M&E implementation, indicate limitations affecting the monitoring and assessment of project results, the quality of implementation, and the timely and cost-effective delivery of

GEF criteria/dimensions	Rating[15]	Summary comments[16]
		results. Taken together, these limitations made the overall Moderately Satisfactory rating more consistent with the evidence presented.

Validation by the FAO Office of Evaluation

The report has been subject to independent quality assurance and validation exercises performed by FAO's Evaluation Office (OED). The performance ratings for the project," Reversing Desertification Process in Susceptible Areas of Brazil: Sustainable Agroforestry Practices and Biodiversity Conservation (REDESER)" set out in the GEF rating scheme, have been adjusted as a result. The overall project performance is validated at the Moderately Satisfactory level. See appendix 8 – OED validation scheme - for details on the validation of individual criteria ratings.

Appendix 4. GEF Rating scheme and descriptors

As mentioned in section 3.1 of the TOR template, the overall rating of the project outcome will be based on the following criteria: relevance, coherence, effectiveness and efficiency.

Appendix Table 2 below presents performance descriptors[17] for each specific rating. In most instances, actual performance may not fully correspond to any of the rating descriptions. Therefore, a rating will be based on the description that provides the best fit based on the evidence. Where available evidence is insufficient to provide rate performance, the performance will be rated as unable to assess. The performance will be rated on a six-point scale.

Appendix Table 1. Outcomes ratings

Ratings	***Description***
Highly satisfactory (HS)	*The outcomes exceed targets, and they are highly relevant and cost effective.*
Satisfactory (S)	*Level of outcomes achieved meets targets. The outcomes are relevant and cost effective.*
Moderately satisfactory (MS)	*Level of outcomes achieved was generally close to the targets. Majority of the targets were met or almost met but some were not. The outcomes are generally relevant and cost effective.*
Moderately unsatisfactory (MU)	*Overall, the level of outcomes achieved is lower than targets, although some outcomes were substantially achieved. The outcomes are generally relevant but not sufficient given the costs or alternatively generally cost-effective but not adequately relevant.*
Unsatisfactory (U)	*The expected outcomes were not achieved, or achievement was substantially lower than expected, and/or the achieved outcomes are not relevant. Alternatively, the outcome was cost ineffective compared to alternatives.*
Highly unsatisfactory (HU)	*Negligible level of outcomes were achieved and/or the project had substantial negative consequences, that outweigh its benefits.*

[17] The 2022 final draft of the GEF Terminal Evaluations Guidelines presents new descriptors here reported.

Unable to assess (UA)	*The available information does not allow an assessment of the level of outcome achievement*

SUSTAINABILITY

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

Appendix Table 2. Sustainability ratings

Rating	***Description***
Highly likely (HL)	*There is negligible risk to continuation of benefits and based on the progress made so far it is expected that the long-term objectives of the project will be achieved.*
Likely (L)	*Either there is negligible risk to continuation of benefits or there are some risks, but the magnitude of their effect is too small and/or the probability that they will materialize is too small. Overall, it is likely that the net benefits of the project will continue.*
Moderately likely (ML)	*There are some risks to sustainability, and they may have some effect on continuation of benefits if they materialize. However, probability of materialization of these risks is low. Net benefits are more likely to continue than abate.*
Moderately unlikely (MU)	*There are significant risks to sustainability. The effect on continuation of benefits would be substantial if these risks materialize and the probability of materialization of these risks is significant. Overall, net benefits of the project are likely to abate.*
Unlikely (U)	*Because of the high risks it is unlikely that net benefits of the project will continue to accrue, and the progress made so far is likely to be lost. It is unlikely that the project will achieve its long-term objectives.*
Highly unlikely (HU)	*It is expected that the project will not achieve its long-term objectives. Major risks have either already materialized and halted accrual of net benefits or have high probability of materializing soon and will halt accrual of net benefits when they materialize.*
Unable to assess (UA)	*Unable to assess the expected incidence and magnitude of risks to sustainability.*

PROJECT IMPLEMENTATION AND EXECUTION

Quality of implementation and of execution will be rated separately. Quality of implementation pertains to the role and responsibilities discharged by the GEF agencies that have direct access to GEF resources. Quality of execution pertains to the roles and responsibilities discharged by the country or regional counterparts that received GEF funds from the GEF agencies and executed the funded activities on ground (this could be the very same FAO with co-executor partners or an executing partner identified by an FAO Operational Agreement). The performance will be rated on a six-point scale.

Appendix Table 3. Implementation and execution ratings

Ratings	Implementation	Execution
Highly satisfactory (HS)	Performance of the GEF Agency was exemplary. Project preparation and implementation were robust. The Agency ensured that relevant GEF policies were applied in project preparation and implementation. Project supervision was strong— the Agency identified and addressed emerging concerns in a timely manner. The Agency ensured that project implementation stayed on track and project activities were completed on time.	Performance of the executing entity was exemplary. Execution of project activities was timely and of high quality. Relevant GEF policies and requirements were adhered to. Guidance from the GEF Agency was followed, and any corrective actions required were taken promptly. Measures were undertaken to mitigate risks to sustainability, and steps were taken to support follow-up to the project. Project activities were completed on time.
Satisfactory (S)	Performance met expectations and did not have any salient weaknesses. Project preparation and implementation were robust, and relevant GEF policies were applied. The GEF Agency supervised the project well—it identified and addressed emerging concerns in a timely manner. The Agency ensured that project implementation was on track.	Performance met expectations and did not have any salient weaknesses. Execution of project activities was timely and of good quality. Relevant GEF policies and requirements were adhered to. Guidance from the GEF Agency was followed. Measures were undertaken to mitigate risks to sustainability of project outcomes.
Moderately satisfactory (MS)	Performance had some weaknesses but met expectations overall. Project preparation and implementation were adequate and relevant GEF policies were applied, although there are some weak areas. Project supervision was adequate—the GEF Agency identified and addressed emerging concerns, although some may have been inadequately addressed. Project implementation had minor delays, and a few activities may have been dropped.	Performance had some weaknesses but met expectations overall. Execution of project activities was generally timely but with some instances of delay. Relevant GEF policies and requirements were adhered to, although some minor slip-ups may have been observed. Guidance from the GEF Agency was followed, and problems were fixed. There were some areas for improvement in execution.
Moderately unsatisfactory (MU)	Performance did not meet expectations, although there were some areas of solid performance. Project preparation and implementation had weaknesses, although these were not too severe. Project supervision was somewhat weak—although the GEF Agency identified most emerging concerns, many remained unaddressed or inadequately addressed.	Performance did not meet expectations, although there were some areas of solid performance. Execution of project activities was delayed and executing entity capabilities observably limited project execution. Several slip-ups in adherence to GEF policies and requirements were observed. Guidance from the GEF Agency was generally followed and problems were

Ratings	Implementation	Execution
	Project implementation was delayed, and a few activities were dropped or reduced in scale because of issues that were largely under Agency control.	fixed, but such actions usually were not timely. There were several areas for improvement in execution.
Unsatisfactory (U)	Performance did not meet expectations. Project preparation and implementation were weak. Project supervision was weak—emerging concerns were not identified in time and remained unaddressed or inadequately addressed. Activities were not implemented in time or were not undertaken. Project implementation was delayed, and several activities were dropped or reduced in scale.	Performance did not meet expectations. Execution of project activities was delayed, and at least some activities were dropped due to factors largely under the control of the executing entity. Many slip-ups were observed in adherence to GEF policies and requirements. Guidance from the GEF Agency was not put into practice, or was applied with considerable delay.
Highly unsatisfactory (HU)	Performance had severe shortcomings. The GEF Agency mismanaged project implementation, and its supervision was poor. Emerging concerns were not identified in time, including those that should have been obvious. Although instances of mismanagement were discovered, corrective actions were not undertaken. Project activities were poorly implemented, and several had to be dropped.	Performance had severe shortcomings. There were several instances of mismanagement by the executing entity. Emerging concerns were not addressed in time, including those that should have been obvious. Most activities were very poorly executed and/or experienced delays, and some activities were dropped. GEF policies and requirements were not applied.
Unable to assess (UA)	The available information is not sufficient to allow rating of performance.	The available information is not sufficient to allow rating of performance.

MONITORING AND EVALUATION

Quality of project M&E will be assessed in terms of: i) quality of design of project M&E plan and ii) quality of project M&E during implementation. The table below presents relevant descriptors for each rating.

Appendix Table 4. Monitoring and evaluation ratings

Ratings	M&E plan	M&E implementation
Highly satisfactory (HS)	The M&E plan is a good practice and does not have any weaknesses. Its alignment with the project theory of change is robust. Complete baseline data have been provided. The specified indicators are appropriate, and arrangements for plan implementation are adequate. Overall, the M&E plan exceeds expectations and is exemplary.	M&E plan implementation was excellent. Weaknesses in the M&E plan, if present, were addressed promptly. M&E activities were conducted in a timely manner, and data from M&E were used to improve project implementation. Overall, M&E implementation exceeds expectations and was exemplary.
Satisfactory (S)	The M&E plan is robust and has no or only minor weaknesses. Its alignment with the project theory of change is robust. Baseline data are provided or their collection is planned at project start. The specified indicators are appropriate,	M&E plan implementation was generally robust. Weaknesses in M&E were addressed in a timely manner. M&E activities were conducted in a timely manner, and data from M&E were used in improving project implementation. Overall, M&E implementation meets expectations.

Ratings	M&E plan	M&E implementation
	and arrangements for M&E plan implementation are adequate. The plan meets expectations.	
Moderately satisfactory (MS)	The M&E plan is solid overall. Its alignment with the project theory of change is solid. The specified indicators are generally appropriate, and arrangements for M&E plan implementation are adequate. There are areas where the M&E plan could be strengthened but, overall, it is adequate.	M&E plan implementation was generally robust, with some weaknesses. Weaknesses in M&E were generally addressed although some remained. Some M&E activities were delayed. M&E data were used for reporting but had little use in improving project implementation. Overall, M&E implementation meets expectations with some areas of low performance.
Moderately unsatisfactory (MU)	The M&E plan is weak overall, although it has strengths in some areas. Its alignment with the project theory of change is somewhat weak. The specified indicators are generally appropriate but additional indicators are required to adequately capture project results, and/or arrangements to gather data on indicators are not adequate. The plan needs several improvements to meet expectations.	M&E plan implementation was weak and/or did not address weaknesses in the original plan. Most M&E activities were completed, with some either dropped or delayed. M&E data were not reported in a timely manner, and there is little evidence to suggest that the data were used to improve project implementation. Overall, M&E implementation does not meet expectations, although there are some areas of adequate performance.
Unsatisfactory (U)	The M&E plan has severe shortcomings. Its alignment with the project theory of change is weak. No baseline data are provided nor is there any indication that these would be collected at project start. Indicators do not adequately address project outcomes and other results; relevant indicators have not been specified for several results. There are gaps in arrangements for M&E plan implementation. Either no budget or an inadequate budget has been provided for M&E.	M&E plan implementation was flawed and/or did not address severe weaknesses in the original plan. Several M&E activities were either dropped or were incomplete. The data collection methodology was not sound. M&E data were not reported in a timely manner, and there is little evidence to suggest that the data were used to improve project implementation. M&E implementation does not meet expectations.
Highly unsatisfactory (HU)	No M&E plan was prepared.	No, or negligible, M&E activity was implemented other than conduct of the project evaluation.
Unable to assess (UA)	Unable to assess because project documents are not available.	Unable to assess as the terminal evaluation does not cover M&E implementation adequately.

Appendix 5. GEF co-financing table

Table 1: GEF Co-financing table

Name of the co-financer	Co-financer type	Type of co-financing	Co-financing at project start (Amount confirmed at GEF CEO endorsement/approval by the project design team) (in USD)			Materialized co-financing at project final evaluation 18 (in USD)		
			In-kind	Cash	Total	In-kind	Cash	Total
Advisory and Management on Nature Studies, Human Development and Agroecology (AGENDHA)	Civil society		160,000		160,000	200,400		200,400
Northeast Plants Association (APNE)	Civil society		160,000		160,000	152,782		152,782
Technological Park Foundation of Paraíba (CEPIS)	State Government		533,333		533,333	0		0
Araripe Foundation (FA)	Civil society		160,000		160,000	474,545		474,545
Food and Agriculture Organization of the United Nations (FAO/UN)	International Organization		200,000		200,000	300,000		300,000

[18] Based on information from Project Implementation report June 2025

Technological and Cultural Education Foundation (Funetec)	State Government		800,000		800,000	0		0
Brazilian Institute of Development and Sustainability (IABS)	Civil society		266,666		266,666	0		0
World Agroforestry Center (ICRAF)	Civil society		100,000		100,000	0		0
National Semi-arid Institute (INSA)	Federal Government		1,333,333		1,333,333	0		0
Ministry of Agrarian Development (MDA)	Federal Government		3,360,000		3,360,000	0		0
Ministry of Environment (MMA)	Federal Government		1,866,667		1,866,667	4,057,340		0
Secretariat of Family Farming and Development of the Semi-arid (SEAFDS) (Paraíba)	State Government		1,066,667		1,066,667	0		0
Support Services for Alternative Community Projects (SEAPAC) (Rio Grande do Norte)	State Government		160,000		160,000	0		0

State Secretariat of Infra-Structure, Water Resources, Environment and Science and Technology (SEIHRMACT) (Paraíba)	State Government		0		0	0		0
Secretariat of Environment (SEMA) (Crato)	Municipality Government		0		0	110,000		110,000
Secretariat of Environment and Water Resources (SEMARH) (Alagoas)	State Government		0		0	0		0
Rio Grande do Norte Planning Secretariat (SEPLAN) (Rio Grande do Norte)	State Government		1,066,666		1,066,666	560,000		560,000
Brazilian Forestry Service (SFB)	Federal Government		0		0	1,750,800		1,750,800
Family Agribusiness Cooperative of Canudos, Uauá and Curaçá *COOPERCUC	Civil society		0		0	266,660		266,660
*EFASE	Civil society		0		0	179,900		179,900
Total co-financing			**11,233,332**		**11,233,332**	**8,052,427**		**8,052,427**
GEF support				**3,930,155**	**3,930,155**		**3,930,155**	**3,930,155**
TOTAL			**11,233,332**	**3,930,155**	**15,163,487**	**8,052,427**	**3,930,155**	**11,982,582**

Appendix 6. OED validation scheme

GEF criteria to be rated	Rating assigned by ET	Rating assigned by OED	OED's comments
A. OUTCOMES			
A1. Relevance	HS	HS	The project is aligned and anchored in national/global agendas, still relevant at closure and addressing an increasing problem. The rating of HS is therefore fully justified.
A2. Coherence	S	S	Based on the current narrative and evidence provided, coherence (internal and external) is correctly rated as S.
A3. Effectiveness	S	MS	While the evaluation presents evidence of substantial achievements in training, knowledge generation, institutional support, and implementation of INRM practices, results across components were uneven. A major shortfall was observed in a core outcome area related to forest and landscape restoration, with 4,009 ha restored against a target of 30,000 ha (13.36%). In addition, the report identifies persistent limitations affecting the consolidation, scalability, uptake, and sustainability of several interventions, including continued dependence on technical assistance, weak institutional appropriation, limited operationalization of SFM plans, and uncertainties regarding post-project continuity. Considering these factors, the Moderately Satisfactory rating was considered more consistent with the evidence presented and with GEF rating descriptors.
A4. Efficiency	MS	MS	The rating of MS is fully consistent with the narrative and evidence presented.
B. SUSTAINABILITY	L	L	Even if the narrative emphasizes “likely” rather than strong sustainability, this still falls within the scope of Satisfactory (S) under GEF descriptors. No rating change is therefore required.
C. IMPLEMENTATION	S	MS	According to GEF descriptors, a Satisfactory rating requires the absence of salient weaknesses in implementation and supervision. While the evaluation highlights FAO’s technical capacity and continued implementation despite contextual challenges, the narrative also identifies limitations related to the absence of a mechanism integrating partners, as well as weak institutional uptake affecting the continuity of actions. Considering these limitations, the Moderately Satisfactory rating was considered more consistent with the evidence presented.

D. EXECUTION	S	**MS**	See comment above.
M&E plan	**U**	**U**	The rating of Unsatisfactory is well supported by the evidence, particularly given the lack of clarity in indicator structure, weak differentiation between project and co-financing results, and absence of a robust results framework.
M&E implementation	S	MS	Given the Unsatisfactory M&E design, a Satisfactory rating for M&E implementation would require clear evidence that design weaknesses were timely and effectively addressed during implementation and that M&E data consistently informed project management and decision-making. However, the narrative identifies persistent weaknesses related to indicator consistency, traceability of results, disaggregation of data, and changes in targets and indicators during implementation. Considering these limitations, the Moderately Satisfactory rating was considered more consistent with the evidence presented.
Overall project rating	**S**	**MS**	The overall Satisfactory rating was not considered fully substantiated by the narrative. Unsatisfactory M&E design, the Moderately Satisfactory ratings for efficiency, effectiveness, implementation and execution, and M&E implementation, indicate constraints affecting the monitoring and assessment of project results, timely and cost-effective delivery, and the quality of implementation. Taken together, these limitations affect overall project performance. Therefore, the overall Moderately Satisfactory rating was considered more coherent with the narrative and better aligned with the evidence presented.

Legend:

All criteria but sustainability

Highly satisfactory (HS)
Satisfactory (S)
Moderately satisfactory (MS)
Moderately unsatisfactory (MU)
Unsatisfactory (U)
Highly unsatisfactory (HU)
Unable to assess (UA)

Sustainability

Highly likely (HL)
Likely (L)
Moderately likely (ML)
Moderately unlikely (MU)
Unlikely (U)
Highly unlikely (HU)
Unable to assess (UA)