Food and Agriculture Organization of the United Nations

Evaluation of the project "Increased climate resilience of rural households and communities through the rehabilitation of production landscapes in selected localities of the Republic of Cuba"

Mid-term report

Project Evaluation Series
04/2025

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Project code: GCP/CUB/021/GCF

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Abstract

This report presents the mid-term evaluation findings, conclusions and recommendations for the project "Increased climate resilience of rural households and communities through the rehabilitation of production landscapes in selected localities of the Republic of Cuba" (hereinafter referred to as IRES). The project seeks to increase the climate resilience of agricultural production and ensure food security through improved ecosystem services from agroforestry, silvopastoral systems, reforestation and assisted natural forest regeneration in seven climate vulnerable municipalities. The Government of Cuba, represented by the Ministry of Agriculture, acts as the Executing Entity of the project. The Food and Agriculture Organization of the United Nations (FAO) serves as the accredited entity and the co-Executing Entity.

The mid-term evaluation is one part of the independent project evaluation. The evaluation objective at project mid-term is to develop an evidence-based understanding of the likelihood that the project is on track to achieve the expected results and contribute to the envisaged paradigm shift. As such, the evaluation has a strong formative focus and serves both accountability and learning purposes. The FAO Office of Evaluation led the evaluation with a team of independent external consultants.

Overall, the evaluation found that the project is on track to achieve its expected results. The project remains highly relevant to national priorities, and its activities address the localized climate resilience needs of agricultural producers. High levels of stakeholder coordination, engagement and ownership at all levels helped to advance implementation in a complex and dynamic environment. However, a confluence of largely external factors led to implementation delays and impeded progress towards mid-term targets in some areas. Early results demonstrate that the productive landscape restoration activities are triggering an environmental recovery process at the farm and landscape levels. The project is on track to achieve the projected greenhouse gas (GHG) emissions reductions and removals. However, there are opportunities to reinforce technical training on climate change mitigation issues and strengthen capacities to monitor and report on emissions reductions and removals. Activities to strengthen governance, legal and regulatory frameworks met or surpassed the mid-term targets. The project has a strong gender focus at the national and territorial levels, but its performance measurement system does not capture short- or long-term gender-related results. There are signs of a paradigm shift occurring at the institutional level in organizations and territorial governments and at the individual producer level.

The evaluation provides five areas of recommendation: extend the project time frame; reinforce technical capacities in areas of climate change mitigation; strengthen capacity building and mechanisms to support women's leadership and economic empowerment; strengthen the project's monitoring tools to better capture strategic results; and reinforce the project's sustainability and paradigm shift potential.

Contents

Boxes, figures and tables

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The evaluation also benefited from the participation of a range of local stakeholders. The evaluation is particularly grateful to IRES municipal and provincial coordinating committees, collaborating institutions and project beneficiaries. Their contributions and participation in the evaluation have been crucial to the team's work and are greatly appreciated. A special thanks goes to the generosity of the agricultural producers who welcomed the evaluators to their farms and ranches.

The evaluation was led by a team from the FAO Office of Evaluation with support from external experts. The team included: Nicole Fuhr (Team Leader, FAO Office of Evaluation); Adriana Jaramillo (Evaluation Manager, FAO Office of Evaluation); Doris Cordero (International Evaluation Consultant, Expert on Climate Change and Ecosystem Services); Catherine Gander (International Evaluation Consultant, Expert on Gender and Governance); and Lazaro Maqueira (National Consultant, Expert on Climate-resilient Agricultural Systems). Special acknowledgements go to the following individuals from the FAO Office of Evaluation: Luisa Belli and Jorge Castro Puello for conducting quality assurance reviews of the evaluation deliverables; and Eder Sandoval for providing administrative and logistical support.

Abbreviations

ACPA	Cuban Association of Animal Production, by its Spanish acronym
ACTAF	Cuban Association of Agricultural and Forestry Technicians, by its Spanish acronym
ANAP	National Association of Small Producers, by its Spanish acronym
CEDPLA	agroforestry systems with cedar, bananas and plantains, by its Spanish abbreviation
Ce-GESTA	Centre for the Study of Management, Local Development, Tourism and Cooperativism of the University of Pinar del Río, by its Spanish abbreviation
EX-ACT	Ex-Ante Carbon-balance Tool
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
FONADEF	National Forestry Development Fund, by its Spanish abbreviation
FRUAGR	agroforestry system with fruit trees, agricultural crops and living fences, by its Spanish abbreviation
GCF	Green Climate Fund
GHG	greenhouse gas
MARFOM	multipurpose forest plantations in areas invaded by marabou, by its Spanish abbreviation
MARREG	establishment of forests through assisted natural regeneration in areas affected by marabou, by its Spanish abbreviation
NDC	nationally determined contributions
SILLEC	silvopastoral system with arbustive leguminous plants, by its Spanish abbreviation
SILSOM	silvopastoral system for grazing with shade trees, living fences, and protein and banks, by its Spanish abbreviation
UEBIST	Comprehensive Base Business Unit of Technical Services, by its Spanish acronym

Executive summary

1. As a small island developing state, Cuba is particularly vulnerable to the effects of climate change. The project "Increased climate resilience of rural households and communities through the rehabilitation of production landscapes in selected localities of the Republic of Cuba" (hereinafter referred to as IRES), is the second phase of a three-phase programme to ensure climate resilience in Cuba's agricultural sector. The third phase – a programme of countrywide scaling up – will be designed based on the experience and lessons learned from the implementation of this project.

2. The project seeks to increase the climate resilience of agricultural production and ensure food security through improved ecosystem services from agroforestry, silvopastoral systems, reforestation and assisted natural forest regeneration in seven climate vulnerable municipalities. The project is expected to contribute to three Green Climate Fund (GCF) impact areas: reduce emissions from forestry and land use; increase the resilience of the most vulnerable people, communities and regions; and increase the resilience of ecosystems and ecosystem services.

3. The Government of Cuba, represented by the Ministry of Agriculture, acts as the Executing Entity of the project. The Food and Agriculture Organization of the United Nations (FAO) serves as the accredited entity and the co-Executing Entity. It is responsible for the project's financial and operational implementation. The project has a planned duration of seven years, from June 2020 to June 2027, with a total budget of USD 119 900 000. Of this amount, USD 38 200 000 corresponds to grant financing from the GCF, while the remaining USD 81 700 000 comes from national co-financing from the Ministry of Agriculture.

4. The mid-term evaluation is one part of the independent project evaluation. In line with the GCF evaluation guidelines, the evaluation objective at project mid-term is to develop an evidence-based understanding of the likelihood that the project is on track to achieve the expected results and contribute to the envisaged paradigm shift. As such, the evaluation has a strong formative focus and serves both accountability and learning purposes.

5. The FAO Office of Evaluation led the evaluation with a team of independent external consultants. Key evaluation questions, framed around five broad criteria, guided the evaluation. The criteria covered project design, implementation, expected results, gender equality and safeguards, and a paradigm shift. A mixed methods design followed, which was informed by both theory-based and utilization-focused approaches. Data from different lines of inquiry were triangulated to validate findings and draw conclusions. The Evaluation Team conducted the study between January and June 2024.

6. Overall, the evaluation found that the project is on track to achieve its expected results. The project remains highly relevant given renewed government commitments to combat climate change and growing needs to address food security. Project activities respond to the localized climate resilience and livelihood needs of agricultural producers in highly vulnerable municipalities. Project targets are ambitious yet feasible, provided that an extended project time frame is considered to compensate for implementation delays.

7. A confluence of factors, including the COVID-19 pandemic restrictions, procurement challenges and fuel shortages, impacted progress towards mid-term targets. The implementation of the promoted climate-resilient agroforestry, silvopastoral and forestry modules is significantly behind schedule. More progress has been made in strengthening institutional and farmer capacities. Activities to strengthen governance, legal and regulatory frameworks met or surpassed the mid-term targets. Evaluators observed a high level of stakeholder coordination, engagement and

ownership at all levels. Adaptive management and the identification of local solutions helped to advance project implementation in a complex and dynamic environment.

8. The project monitoring and reporting system, including the recent use of a geospatial data infrastructure platform, provides detailed and timely data to inform decision-making – especially the optimal allocation of project resources. New information and knowledge are being used to reinforce project implementation and inform local planning. The use of both formal and informal knowledge dissemination channels is expanding the reach and impact of project activities beyond the direct beneficiaries. Synergies across climate finance initiatives and other international and local projects are creating a more comprehensive and systemic approach to climate resilience at the national, provincial and municipal levels.

9. There is high demand among agricultural producers to participate in the project, despite the total number of direct beneficiaries reached by the project is below the mid-term target. Early results demonstrate that the productive landscape restoration activities are triggering an environmental recovery process at the farm and landscape levels. The project is on track to achieve the projected emissions reductions and removals. However, there are opportunities to reinforce technical training on climate change mitigation issues and strengthen capacities to monitor and report on emissions reductions, particularly in relation to the country's nationally determined contributions (NDC).

10. Through the project, partners have contributed to the development or update of national laws related to climate resilience and agriculture while gaining capacity and tools to implement and disseminate those laws at the territorial level. The project has improved producers' access to existing funding mechanisms and made good progress towards establishing the new national Landscape Resilience Fund to consolidate, increase the impact and ensure the sustainability of financing.

11. The project has a strong gender focus in its design, implementation and governance structures at the national and territorial levels. Although IRES gathers a lot of gender-disaggregated data, its performance measurement and reporting system do not fully capture short- or long-term gender-related results. The project has not reached its mid-term gender targets, but it has contributed to the increased technical capacity and participation of women producers, greater awareness about gender and climate resilience, and improved stakeholder coordination and participation.

12. While productive components have only been operational for two years, the project has put in place elements that support prospects for the sustainability, replication, and scalability of project actions and results. These elements should be consolidated into a sustainability plan. There are signs of a paradigm shift occurring at the institutional level in organizations, including the Ministry of Agriculture and territorial governments, as well as at the individual producer level. However, IRES could take a more intentional and strategic approach to foster this paradigm shift.

13. Based on the evaluation findings and observations, five areas of recommendation are presented. These recommendations target: extending the project time frame; strengthening technical capacities in areas of climate change mitigation; strengthening capacity building and mechanisms to support women's leadership and economic empowerment; strengthening the projects monitoring tools and systems to better capture the project's strategic results; and reinforcing the project's sustainability and paradigm shift potential.

1. Introduction

1.1 Evaluation overview

1. This report presents the findings, conclusions and recommendations of the mid-term evaluation of the project "Increased climate resilience of rural households and communities through the rehabilitation of production landscapes in selected localities of the Republic of Cuba" (hereinafter referred to as IRES). Consistent with the GCF evaluation guidelines (GCF, 2023b),1 the purpose of the mid-term evaluation is to develop an evidence-based understanding of the likelihood that the project is on track to achieve its intended results and contribute to the envisaged paradigm shift. As such, the mid-term evaluation has a strong formative focus, serving both accountability and learning aims.

2. The evaluation was led by the Food and Agriculture Organization of the United Nation (FAO) Office of Evaluation, which operates independently according to its charter (FAO, 2017, Vol. II. pp. 147–154). The Evaluation Team members included three independent external consultants with combined methodological and subject matter expertise in climate change adaptation and mitigation, greenhouse gas (GHG) accounting, climate-resilient agriculture, gender and social inclusion, and governance. The Evaluation Team included international and national consultants. These team members had no prior direct involvement in project design, execution or support, as documented in the FAO Office of Evaluation Declaration of Interest form. Additionally, all evaluators were required to sign the United Nations Evaluation Group's Pledge of Ethical Conduct in Evaluation (UNEG, 2020). The evaluation scope covered the time frame from project launch in June 2020 to the completion of evaluation data collection in March 2024. The mid-term evaluation is expected to complement and inform planned impact and final evaluation activities as part of the overall independent evaluation of the project.

3. The evaluation process followed a consultative and transparent approach. The planning phase included the development of the terms of reference and methodology design. As part of this phase, the evaluators conducted an inception mission to Cuba to consult with key project stakeholders and to review and validate the project's theory of change. This helped the evaluators to better understand the project's intervention logic and implementation status, identify evaluation needs, and define priority areas of interest. The data collection and analysis phase included a field mission to Cuba, covering all project regions. The Evaluation Team then systematized and triangulated the collected data and held a workshop to discuss and validate key findings with the project stakeholders. The reporting phase included preparation of the final report and subsequent learning products.

4. The main evaluation users include:

    i. the project implementation team (FAO, Ministry of Agriculture) and governance committees (national Project Steering Committee, Project Coordination Committee);

    ii. partner institutions such as the Cuban Association of Animal Production (ACPA, by its Spanish acronym), the Cuban Association of Agricultural and Forestry Technicians (ACTAF, by its Spanish acronym), the National Association of Small Producers (ANAP, by its Spanish acronym), and academic and scientific entities, local stakeholders and project

[1] The GCF evaluation guidelines were used as overarching guidance to the extent possible, recognizing that the IRES project pre-dates the GCF Evaluation Policy (effective May 2022) and that there is no retroactive application to funding proposals approved prior to the 32nd GCF board meeting.

beneficiaries, including producers, extension and agricultural technicians, and cooperative leaders;

iii. the GCF, the FAO Regional Office for Latin America and the Caribbean, and FAO headquarters; and

iv. other donors and organizations interested in supporting projects on climate change adaptation and mitigation in Cuba.

1.2 Country context

5. Cuba, an archipelago with a total area of 109 884 km^2, is made up of more than 1 600 islands, islets and cays – of which, the largest is the island of Cuba. The 2020 estimated population is just over 11 million people, of which 49.7 percent are male and 50.3 percent are female, and 77.1 percent are urban and 22.9 percent are rural residents (ONEI, 2021). From a political and administrative standpoint, Cuba is divided into 15 provinces and 168 municipalities.

Box 1. The Cuban Constitution

Cuba adopted a new constitution on 10 April 2019. The changes introduced include the decentralization of the State, through the election of provincial governors by the respective Municipal Assemblies of People's Power, along with amendments directing Cuba to "promote the conservation of the environment and the fight against climate change, which threatens the survival of the human species" (National Assembly of People's Power, 2019).

The new constitution entails the adoption of 39 laws and 31 decree-laws between 2019 and 2023, and 24 laws and 13 decree-laws between 2023 and 2028. The COVID-19 pandemic has delayed the regulatory development of Cuba's new institutional architecture. From 2020 to 2023, the government focused on the fight against the pandemic and updating the economic model. Legal frameworks, norms and policies approved in recent years demonstrate increased priorities for climate-resilient sustainable development and food security.

Sources: Directorate General of Communication, Public Diplomacy and Networks. 2024. *Ficha país de la Oficina de Información Diplomatica: Cuba. República de Cuba [Country information sheet from the Office of Diplomatic Information: Cuba. Republic of Cuba]*. Madrid. https://www.exteriores.gob.es/Documents/FichasPais/CUBA_FICHA%20PAIS.pdf; Mega, E.R. 2019. Cuba acknowledges climate change threats in its constitution. *Nature*, 567(7747): 155. 14 March. DOI:10.1038/d41586-019-00760-3; National Assembly of People's Power. 2019. Constitución de la República, proclamada el 10 de abril de 2019 (GOC-2019-406-EX5) [Constitution of the Republic, proclaimed on 10 April 2019]. *Gaceta Oficial de la República de Cuba*, No. 5 extraordinaria, 10 April. Havana. https://www.gacetaoficial.gob.cu/es/gaceta-oficial-no-5-extraordinaria-de-2019.

6. Cuba's gross domestic product was USD 26 393 million in 2022, with an increase of 1.8 percent compared to the previous year. The gross domestic product composition by sector shows a clear predominance of services at 80 percent (mainly social services, commerce, restaurants and hotels), followed by industry at 18 percent, and agriculture and fisheries at 2 percent (Directorate General of Communication, Public Diplomacy and Networks, 2024). Of note, according to the Economic Commission for Latin America and the Caribbean, production in the agricultural sector did not reach the volumes planned for 2022 (ECLAC, 2023, section on Cuba). This result was affected by shortages of fertilizers, pesticides and fuels, as well as machinery parts and spare parts.

7. The Cuban economy has not yet recovered to the levels prior to the COVID-19 pandemic. Tourism was hit hard in 2020 and 2021. This was largely due to the pandemic restrictions on international travel. Additionally, the economic and trade embargo from the United States of America against Cuba, alongside Cuba's return to the United States Department of State's list of state sponsors of terrorism in 2021, have contributed to the slowdown in economic recovery. Since then, Cuba has suffered from foreign currency shortages and high inflation, and has been plunged into a severe economic crisis. Even though Cuba is not a market economy, it is highly dependent on foreign trade. The country's tourism revenues and exports of medical services traditionally finance basic imports for the country's economic activity, such as food, machinery and fuels, to compensate for

gaps in domestic production (Directorate General of Communication, Public Diplomacy and Networks, 2024).

8. Despite a slight economic acceleration, 2022 was an exceptionally complex year. Cuba was simultaneously affected by a Category 4 tropical cyclone, Hurricane Ian and a severe drought (Fonseca Rivera *et al*., 2024). In addition, the conflict between the Russian Federation and Ukraine, the persistence of sanctions imposed by the United States of America and structural challenges to the prevailing economic model, prevented greater gross domestic product dynamism (ECLAC, 2023, section on Cuba).

9. As a small island developing state, Cuba is particularly vulnerable to the effects of climate change. These include rising average temperatures and increasing rainfall variability, as well as more frequent hurricanes and rising sea levels. This has led to: a diminished availability of water for agricultural production and prolonged periods of drought; accelerated land degradation; decreased productivity; a growing infestation of agricultural lands by an invasive non-native species; and greater saltwater intrusion. These impacts increasingly affect rural livelihoods and food security.

10. In recent years, significant changes have been observed in Cuba's climate. These include increased annual average temperatures, decreased cloud cover, more intense and prolonged droughts, an increased precipitation of more than 50 mm and greater anti-cyclonic influence (Republic of Cuba, 2020). In 2023, Cuba had experienced its warmest year since 1959. Average annual temperatures exceeded the historical average for the period from 1961 to 1990 (25.6 ºC) by 1.38 ºC (Fonseca Rivera *et al.*, 2024). Additionally, extreme weather events continue to be one of the main causes of significant damage and losses to the economy. In 2022, 14 tropical cyclones (six tropical storms and eight hurricanes) originated in the north portion of the Atlantic basin. Of the eight hurricanes, two became major – Fiona and Ian. In fact, Ian was the most intense tropical cyclone with maximum sustained winds of 250 km/h (Fonseca Rivera *et al*., 2024). In terms of forest cover, from 2002 to 2023, the total area of humid primary forest in Cuba decreased by 11 percent (Global Forest Watch, 2024).

1.3 Project description

11. The project is in the second phase of a three-phase programme to ensure climate resilience in Cuba's agricultural sector. It builds on the lessons and best practices identified by the Ministry of Agriculture from research and analysis on the performance of a variety of agroforestry systems that had been piloted and tested in the field during the first phase. The third phase – a programme of countrywide scaling up – will be designed based on the experience and lessons learned from this project.

12. Project objective: the project seeks to increase the climate resilience of agricultural production and ensure food security. It aims to do so through improved ecosystem services from agroforestry, silvopastoral systems, reforestation and assisted natural forest regeneration in seven municipalities that are vulnerable to climate change.

13. Direct and indirect adaptation beneficiaries: the project is expected to directly benefit approximately 51 713 people, of which 23 788 are women, throughout seven target municipalities. An additional 240 117 inhabitants of the target areas are expected to benefit indirectly from better food security through enhanced and more stable production, improved hydrological regulation, and increased opportunities for employment in the agricultural sector.

14. Project duration and budget: the project has a duration of seven years, from June 2020 to June 2027. The total project budget is USD 119 900 000. Of this amount, USD 38 200 000 corresponds to grant financing from the GCF, while the remaining USD 81 700 000 comes from national co-financing from the Cuban Ministry of Agriculture.

15. Project execution: the Government of Cuba, represented by the Ministry of Agriculture, acts as the Executing Entity of the project. FAO serves as the accredited entity and the co-Executing Entity. The Organization is responsible for the project's financial and operational implementation.

Expected results

16. This cross-cutting project is expected to contribute to the GCF adaptation and mitigation results areas (see Table 1). Details on project indicators, targets and assumptions can be found in the project's logical framework (see Appendix 1).

Table 1. Expected results

Project-level expected results	Fund-level outcome areas	Fund-level impact areas
Output 1 Increased climate change resilient production landscapes through investment in innovative agroforestry and silvopastoral systems, reforestation with close-to-nature planted forests and assisted natural forest regeneration **Output 2** Strengthened institutional and farmer capacities to improve ecosystem services through agroforestry and forestry systems and enhance the climate resilience of production landscapes **Output 3** Effective governance to support climate resilience-enhancing production systems and ecosystem services	**Adaptation** A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development A7.0 Strengthened adaptive capacity and reduced exposure to climate risks **Mitigation** M9.0 Improved management of land or forest areas contributing to emissions reductions	**Adaptation** A1.0 Increased resilience and enhanced livelihoods of the most vulnerable peoples, communities and regions A4.0 Improved resilience of ecosystems and ecosystem services **Mitigation** M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks

Source: GCF. 2020a. Funding Proposal. FP126: Increased climate resilience of rural households and communities through the rehabilitation of production landscapes in selected localities of the Republic of Cuba (IRES). Cuba | Food and Agriculture Organization of the United Nations (FAO) | Decision B.25/04. https://www.greenclimate.fund/document/increased-climate-resilience-rural-households-and-communities-through-rehabilitation.

Project components

17. The project is structured around three mutually reinforcing and interdependent components.

i. Component 1 climate-resilient agricultural systems: this utilizes investments in resilience-enhancing technologies to rehabilitate production landscapes through agroforestry, silvopastoral systems, reforestation and assisted natural regeneration. Activities are directed at restoring 15 544 ha of farmland and 20 189 ha of rangeland.

ii. Component 2 strengthened institutional and technical capacities to improve ecosystem services and enhance the climate resilience of production landscapes: these activities include capacity building for farmers' and producers' organizations and training agricultural producers.

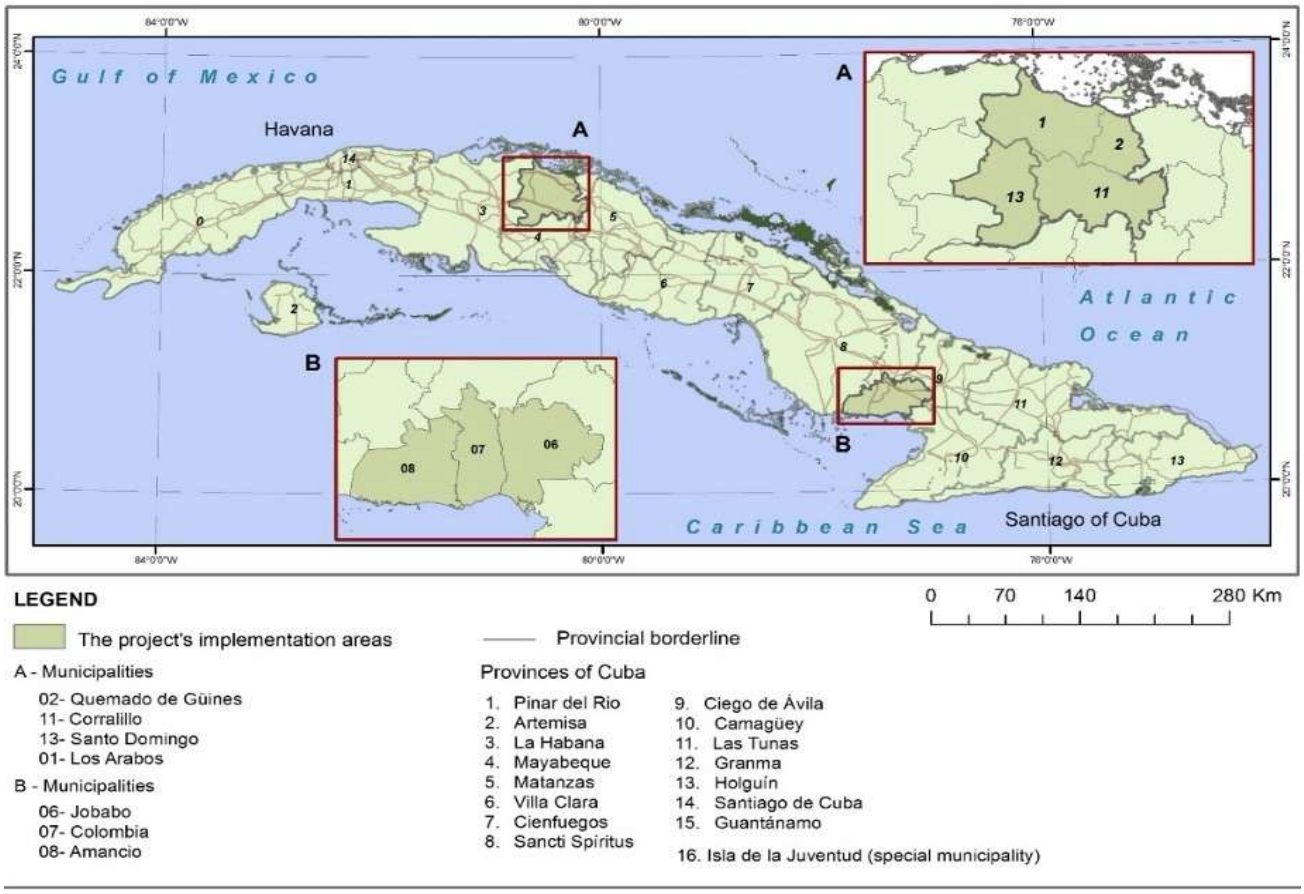
iii. Component 3 strengthened governance and legal and regulatory frameworks to support climate-resilient agricultural ecosystems and productive landscapes: these activities are directed at transforming policy and financial mechanisms to motivate the adoption and

implementation of climate-resilient agroforestry, silvopastoral and forestry systems, and to strengthen planning, governance and coordination.

Target regions and beneficiaries

18. The Government of Cuba identified two target areas for the project. The areas encompass four municipalities in the central region (Corralillo, Quemado de Güines and Santo Domingo in the province of Las Villas, and Los Arabos in the province of Matanzas) and three municipalities in the eastern region (Amancio Rodríguez, Colombia and Jobabo in the province of Las Tunas). These regions are among the most affected by agricultural drought and periodic flooding, which are worsened by climate-driven meteorological events. Additionally, only a tenth of the area in the two target regions is forested – three times less than the overall national forest cover (GCF, 2020a).

Figure 1. Project intervention areas



Note: Refer to the disclaimer on copyright page for the names and boundaries used in this map.

Source: GCF. 2020a. Funding Proposal. FP126: Increased climate resilience of rural households and communities through the rehabilitation of production landscapes in selected localities of the Republic of Cuba (IRES). Cuba | Food and Agriculture Organization of the United Nations (FAO) | Decision B.25/04. https://www.greenclimate.fund/document/increased-climate-resilience-rural-households-and-communities-through-rehabilitation.

1.4 Theory of change

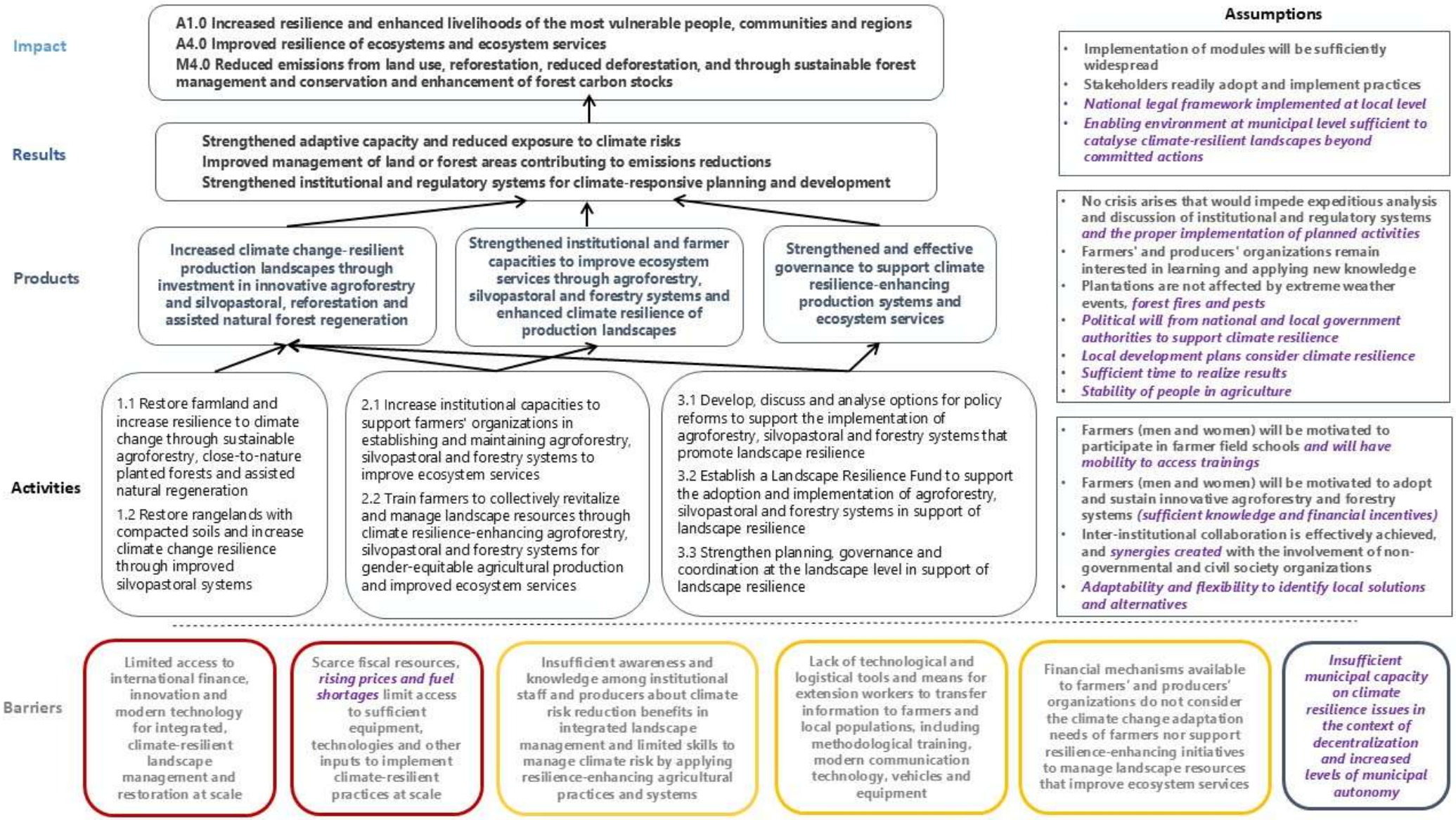
19. The project aims to shift the current paradigm of production maximization to one of climate-resilient production landscapes. As presented in the project's theory of change, if policies and regulatory frameworks are enhanced and investment opportunities created, this – together with capacity building and technical support for the implementation of innovative agroforestry, silvopastoral and forestry systems – will result in strengthened institutional and regulatory systems that support climate-responsive planning and the improved management of land and forest areas. The paradigm shift is expected to reduce emissions, improve ecosystem services, strengthen adaptive capacity and reduce exposure to climate risks.

20. Evaluators held a workshop with key project stakeholders to validate the theory of change and update the barriers and assumptions identified at the time of project design (see Figure 2). Participants included representatives from FAO Cuba, the Ministry of Agriculture, the Ministry of Science, Technology and Environment, the AZCUBA Sugar Group, and the University of Pinar del Río. The workshop aimed to contribute to a common understanding of the project's intervention logic and to inform the evaluation methodology and priority areas of analysis.

21. Overall, participants agreed that the five originally identified barriers still exist. In some cases, the barriers have become more critical (marked in red) due to an ever challenging international context compounded with a growing domestic economic crisis. Barriers related to insufficient awareness and knowledge of climate risks, a lack of technology and tools, and access to financial mechanisms (marked in yellow) remain, but the contribution of project activities to lowering these barriers was noted. In addition, participants identified a new barrier that relates to municipal capacities to manage climate resilience in productive landscapes in the context of ongoing decentralization processes.

22. In terms of assumptions, modifications were suggested, and new assumptions were identified (marked in purple). The most significant assumptions included sufficient motivation and the capacity of farmers to implement and sustain new climate-resilient practices, as well as political will and capacity at national and local levels to support climate-resilient measures.

Figure 2. The project's adjusted theory of change



Source: Authors' own elaboration.

2. Evaluation approach and methodology

2.1 Evaluation design, process and key questions

23. The evaluation design was informed by the following evaluation approaches.

    i. Theory-based approach: the evaluation included a focus on examining and testing the underlying assumptions and causal mechanisms identified in the adjusted theory of change. For example, key assumptions that producers will be motivated and have sufficient capacity to implement and sustain new climate-resilient practices, and the presence of an enabling environment at the municipal level, were explored during field visits.

    ii. Utilization-focused approach: the goal of a utilization-focused evaluation is to increase the likelihood that an evaluation will be used by identifying and involving key stakeholders who have a principal role in decision-making and, in turn, are in a position to utilize the results (Patton, 1997). By using a consultative and transparent approach throughout the evaluation process, evaluators were able to define and prioritize key stakeholder's evaluation needs and areas of interest. For example, following initial consultations, greater priority was placed on: examining areas of gender equality; governance and an enabling environment; management and use of information; and coherence and synergies. Some areas identified, such as a comparative analysis of the results achieved by different types of producers and cooperatives and key causal factors, were not feasible to include as part of the mid-term evaluation scope and will be considered in future evaluation activities.

24. The design and conduct of the evaluation were guided by the GCF evaluation standards (GCF, 2022b). These are consistent with guidance provided by the United Nations Evaluation Group, including their Norms and Standards for Evaluation (UNEG, 2016) and Ethical Guidelines for Evaluation (UNEG, 2020). All standards were followed, but the Evaluation Team emphasized the following aspects.

    i. Cultural and gender sensitivity: the evaluators adjusted data collection instruments for different types of stakeholder groups. For example, for focus group discussions with larger multistakeholder coordinating committees, a reflexive dialogue approach was used to encourage participation and foster collective learning around high-level themes. Opportunities were then identified to explore specific evaluation questions in greater depth through individual interviews with key committee members or small groups focused on thematic areas, such as gender equality. Evaluators conducted interviews with agricultural producers[2] on farm sites to minimize burden and allow farmers to demonstrate project activities. Where possible and appropriate, separate spaces were identified for women producers.

    ii. Methodological rigour and narrative fluency: the FAO Office of Evaluation assigned a quality assurance reviewer to assess the main evaluation deliverables. This included ensuring that the evaluation was conducted in an objective and neutral manner and assessing the design and application of the evaluation methodology, analysis and triangulation of data, as well as the quality and logical flow of the findings, conclusions and recommendations.

    iii. Confidentiality and anonymity of primary sources: the evaluators introduced the evaluation. They also explained the process and how the information would be used and

[2] The terms "farmer" and "agricultural producer" are used interchangeably in this evaluation report.

protected as part of the informed consent process prior to conducting the interviews. Care was taken to ensure anonymity and the non-attributability of statements. In cases where individual stories were identified for inclusion in the evaluation report, the text was shared in advance and permission to publish was obtained.

25. Key evaluation questions, framed around five overarching criteria, guided the evaluation. Subquestions, aligned with the key evaluation questions, were defined to ensure specific GCF evaluation criteria were addressed and to prioritize areas of interest. Specific GCF evaluation criteria include relevance, effectiveness, efficiency, impact and sustainability (as defined by the Organisation for Economic Co-operation and Development's Development Assistance Committee), along with criteria to assess coherence, gender equity, country ownership, innovation, replication and scalability, and unexpected results. An evaluation matrix served as the guiding evaluation tool (see Appendix 2). The matrix includes evaluation questions and subquestions with corresponding evaluation indicators, methods and data sources.

Table 2. Key evaluation questions

Overarching evaluation criteria	GCF evaluation criteria	Key evaluation question
Continued relevance and quality of project design	Relevance and country ownership	To what extent is the project design still relevant and responsive to the climate needs and priorities of key stakeholders and project beneficiaries?
Level and quality of implementation	Efficiency, effectiveness, country ownership and coherence	To what extent and how has the project delivered activities and outputs as expected by the project's mid-term?
Progress towards expected results	Effectiveness, impact and unexpected results	To what extent and how are the activities and outputs achieved contributing to the expected results? (fund-level outcomes and impact areas)
Gender equality, social inclusion and safeguards	Gender equality and effectiveness	Has the project adequately addressed gender equality and social inclusion considerations? To what extent have environmental and social safeguards been effectively implemented and monitored?
Paradigm shift	Sustainability, innovation, replication and scalability, and impact	What are the prospects for the project to contribute to the proposed paradigm shift?

Source: Elaborated by the Evaluation Team.

2.2 Data collection and analysis

26. A primarily qualitative approach to data collection was followed given the formative nature of the evaluation and the early implementation stage. Data collection methods included the following:

i. A desk and bibliographic review covered project documents, relevant norms, laws, and public policies linked to the project context and partner institutions. This also involved specialized literature on the challenges of climate resilience in the Cuban agricultural sector.

ii. Semi-structured individual or group interviews were conducted with key actors. This represented the project's implementing agencies and collaborating institutions, municipal and provincial coordinating committees, gender committees, productive associations and other entities considered relevant. The interviews were carried out in a semi-structured manner. This allowed for structured conversations around key evaluation criteria, but also

left room for going deeper into specific issues or questions relevant to the category of interviewee.

iii. Focus group discussions engaged with representatives from municipal- and provincial-level coordination committees, gender committees and groups of beneficiaries. Discussions were structured around higher-level themes using a reflexive dialogue approach to encourage participation and collective learning.

iv. Field visits focused on producer experiences, motivation and capacities. This also involved evaluator observations on the quality and implementation of farm plans and the monitoring of environmental and social safeguards.

v. Estimates of GHG emissions reductions and removals and a reporting analysis included a review of the 2022 updated GHG emissions and removals estimates. This involved progress estimates presented in the 2023 Annual Performance Report (GCF, 2024a). The review included a comparative quantitative analysis using the Ex-Ante Carbon-balance Tool (EX-ACT) tool (Versions 7 and 9) (FAO, 2022b) and information gathered during field visits and interviews with producers, technical specialists and extensionists.

27. Data collection included visits to all seven project municipalities (see Appendix 3 and Appendix 4). Pre-designed guides and formats for collecting information during interviews, focus group discussions and field visits allowed for data collected by different members of the Evaluation Team to be homogenized. This facilitated the systematization and analysis of information at a later stage, as well as the traceability of data. The data collection mission included the following elements:

i. Group or individual interviews with:

- FAO and the Ministry of Agriculture's national Project Management Units, along with all three provincial Project Management Units and all seven municipal Project Management Units (total of 39 individuals, of which 17 were female and 22 were male); and
- officials and technical representatives from all national partners, collaborating institutions and governing bodies at national, provincial and municipal levels (total of 42 individuals, of which 18 were female and 24 were male).

ii. The focus group discussions involved all multistakeholder provincial (three) and municipal (seven) coordinating committees (total of 97 individuals, of which 51 were female and 46 were male).

iii. There were site visits to 15 agricultural production sites. A purposeful sample was selected for site visits to achieve maximum diversity (see Appendix 3). The criteria included: type of agroforestry, silvopastoral or forestry module implemented; type of producer (gender, age); type of productive association; size of the intervention site; level of advancement; and level of success. Site visits included individual or group interviews with a total of 109 producers and productive or service association members (of which, 30 were female and 79 were male), along with observations on the progress and quality of module implementation.

iv. There were informal exchanges with children and youth interest circles, and one circle of grandmothers (total of eight interest circles).

28. To increase the reliability of data collected at the beneficiary level, evaluators validated and further explored themes arising from the project's adaptation and resilience survey and focus group

discussion findings.[3] For example, survey findings regarding farmer's perceptions of the project's promoted climate-resilient methods and practices, and factors facilitating and hindering their implementation, were explored more in-depth during site visits and interviews with them. This helped to compare and validate responses and to better understand farmer motivations. Additionally, focus group discussion findings on the perceptions of ecosystem services were compared and validated against interview and focus group discussion data collected during the evaluation mission.

29. The evaluators systematized the information and data collected through different sources and methods using Microsoft Excel spreadsheets aligned to each evaluation criteria. Both inductive and deductive coding techniques were used to identify trends and findings. Next, evaluators triangulated the data to compare evidence across different methods and data sources. Gaps and areas for further verification were identified, and the level of accuracy and validity of the findings were gauged.

30. As part of the evaluation's learning and dissemination strategy, the FAO Office of Evaluation, in collaboration with the FAO Office of Climate Change, Biodiversity and Environment, and FAO Cuba will develop learning and dissemination products. Initially defined products include an evaluation learning product that is accessible for evaluation stakeholders and beneficiaries at the local level, infographics, and key messages that that can be disseminated online and through social media channels. This also involves GCF evaluation learning events that target interested FAO personnel.

2.3 Evaluation limitations and mitigation measures

31. The evaluation limitations and mitigation measures are described in Table 3.

Table 3. Evaluation limitations and mitigation measures

Limitation	Mitigation measures
Duration of data collection mission The planned data collection mission was shortened due to restrictions on internal movements in the context of the current economic crisis, fuel shortages and power cuts. This limited the breadth and depth of data collection activities that could be conducted with beneficiaries.	• Separate the Evaluation Team into two subteams to ensure all project regions are covered • Validate and build upon project monitoring data collected from a wider sample of beneficiaries to increase the reliability of primary evaluation data collected from a limited number of direct beneficiaries
Low levels of implementation progress Implementation delays made it difficult to assess early results for some components.	• Use a differentiated approach to assess early results Given low implementation levels for Component 1 (climate-resilient agricultural systems), greater attention was placed on identifying factors that affect implementation and the perceptions of emerging results and social and economic benefits. Given the more advanced implementation of Component 3 (strengthened governance, legal and regulatory frameworks), a more detailed analysis and assessment of the achieved results was conducted.

Source: Authors' own elaboration.

[3] As part of the project's Methodology for Assessing and Monitoring Adaptation and Resilience (2022), the Centre for the Study of Management, Local Development, Tourism and Cooperativism of the University of Pinar del Río (Ce-GESTA, by its Spanish abbreviation) implemented a survey and focus group discussions in December 2023. Survey respondents included a random sample of 484 farmers from all seven project municipalities. Additionally, a total of 82 people participated in seven focus group discussions. Participants included farmers directly involved in the project, as well as farmers not directly involved but located in areas surrounding the participating farms.

3. Findings

3.1 Relevance and quality of design

Evaluation question 1: To what extent is the project design still relevant and responsive to the climate needs and priorities of key project stakeholders and beneficiaries?

Alignment with the GCF and FAO strategic framework and country priorities at the national and local levels

Finding 1. The project is increasingly relevant to country priorities at both a local and national level. This is due to renewed national and international commitments to combat climate change and growing needs to address food security. Stakeholders noted the project's integrated and strategic vision as a key design strength.

32. At a national level, the project is viewed as a high-profile, strategic initiative to advance the implementation of *Tarea Vida* (Life Task), the Cuban State Plan to confront climate change (Ministry of Science, Technology and Environment, 2019). *Tarea Vida* presents a comprehensive and ambitious programme to respond to national goals and international commitments to address climate change, including Cuba's NDC. Cuba's updated NDC, submitted in September 2020, has a ten-year time frame from 2020 to 2030 and outlines the country's strengthened climate change adaptation and mitigation policies and actions. The NDC prioritizes the sectors of energy and agriculture, forestry and other land use. In fact, the project is the first in Cuba to invest directly in actions that promote GHG emissions reductions and removals from improved land use and forest activities.

33. The project directly contributes to *Tarea Vida*'s priorities for climate change adaptation and mitigation measures in the agriculture and forestry sector. This includes priority actions that target land use planning, soil restoration, crop diversification, and the introduction and development of seed varieties adapted to changing climate conditions. These measures were included in the design of the project's agroforestry, forestry and silvopastoral modules.

34. The 2021–2025 projections for *Tarea Vida* reinforce the need for a renewed, integrated and strategic approach to combat climate change so that a green recovery following the COVID-19 pandemic can be achieved. Priority actions include strengthening climate governance and institutionality, consolidating local and inclusive models for managing natural resources and addressing climate change, and developing economic and financial instruments. These measures were included in the design of the project activities to support effective governance.

35. Legal frameworks, norms and policies approved in recent years signal growing national priorities that relate to food security and climate-resilient sustainable development.

    i. The Food Sovereignty, Food Security and Nutrition Law (National Assembly of People's Power, 2022) defines the local food system as the central axis to achieve food sovereignty and food security. It includes priorities aimed at strengthening national, provincial, and municipal capacities for sustainable and nutrition-sensitive food strategies. It also strengthens territorial autonomy and decentralization.

    ii. The National Environmental Strategy (Ministry of Justice, 2023), approved in 2023, aims to improve the conservation, protection and rational use of natural resources in confronting climate change with an ecosystem approach. This ensures the constitutional right of Cubans to live in a healthy and balanced environment.

iii. The Natural Resources and Environment Systems Law (National Assembly of People's Power, 2023a) regulates the actions of the state, citizens and society in general to guarantee the implementation and operation of the Natural Resources and Environment System in Cuba. This involves promoting the protection and sustainable use of natural resources and the environment, and ensuring the right of all people to enjoy a healthy environment. In addition, the law seeks to integrate environmental considerations into economic and social development plans.

iv. The Payment for Environmental Services for Forest Carbon Removal norm, approved in 2024, incentivizes the rational use of goods and services provided by forests ecosystems, pollution reduction, and climate change mitigation. The norm constitutes a precedent for the participation of an Antillean country in the carbon market.

36. Municipal and provincial project coordination committee members viewed the project's integrated and strategic vision as a key design strength. For example, stakeholders noted that the project is the first initiative in their region to link climate change and food production together. Further, local stakeholders valued the overall project vision for rural renewal and opportunities for local development and employment.[4]

Adaptation and resilience needs of the beneficiary populations

Finding 2. The design of project activities for climate-resilient production systems remains highly relevant to the localized climate resilience and livelihood needs of agricultural producers.

37. During the evaluation farm visits, all producers noted the increased severity of local climate conditions: rising temperatures; prolonged droughts; water scarcity; and more frequent extreme climate events.[5] This is consistent with recent studies and future projections indicating that the climates of the eastern and central zones of Cuba are becoming drier and hotter, with more frequent and intense droughts, low levels of water reservoirs and saline intrusion.

38. Training modules respond to agricultural producer needs by linking the social, economic, institutional and ecological dimensions of agricultural systems with information on how the promoted measures increase climate resilience. For example, some producers explained how they have learned that planting trees helps to capture carbon and protect against high winds, rotating crops helps to restore and conserve soil quality, and improving pasture fodder helps to reduce methane emissions from cattle.

39. Local stakeholders identified several features in the project's agroforestry and silvopastoral modules that respond to their livelihood needs.[6] The most common features include:

i. attention to rehabilitating unproductive land by removing and controlling the expansion of the invasive species of marabou (*Dichrostachys cinerea*);

i. opportunities for increased food production for self-consumption and local food security by integrating important dietary crops such as sweet potato (*Ipomoea batatas*), cassava (*Manihot esculenta*) and English plantain (*Plantago lanceolata*) into agroforestry modules, and including measures to improve milk production in silvopastoral modules; and

[4] The data was collected from focus group with IRES project partners of municipal and provincial level coordination committee. For further information on specific data collection methods see section 2.2.

[5] The data was collected from individual or groups interviews with consulted producers during 15 production sites. For further information on specific data collection methods see section 2.2.

[6] The data was collected from focus group with IRES project partners of municipal and provincial level coordination committee, and producers. For further information on specific data collection methods see section 2.2.

ii. crop diversification strategies that allow for short- and long-term returns on investment. For example, agroforestry modules intersperse short cycle crops like vegetables and fruit with long-term investments in tree planting.

Finding 3. The identification of target municipalities and the subsequent selection of beneficiaries reflects rigorous vulnerability assessments and strategic considerations. However, evaluators and project stakeholders noted challenges in disaggregating data for different types of beneficiaries.

40. As part of the project design process, the Government of Cuba selected seven target municipalities identified as the most vulnerable to the impacts of climate change. The criteria included key biophysical characteristics, such as drought conditions and periodic flooding, along with socioeconomic considerations, such as municipalities with lower average economic incomes linked to the impacts of climate change.

41. Consistent with criteria defined in the project design phase, project coordinating committees first assess the willingness of producers and their families to participate in the project. Key characteristics include leadership capacity and the ability to pass on learnings to others – either to other members in their producer organizations or to other farmers not participating in project. This was perceived as a strategy to increase awareness of the project's benefits in the early stages of implementation, as well as to improve the potential for sustainability. Next, technical experts from collaboration institutions assess the requirements of the desired module against the productive potential and suitability of the beneficiaries' land. For example, technical assessments for the implementation suitability of the agroforestry systems with cedar, bananas and plantains (CEDPLA, by its Spanish abbreviation) module considers that the cultivation of cedar and banana requires well-drained and deep soils, with pH between 6.8 and 7.2. This also requires a proximity to water sources. In fact, this module needs access to water 12 months of the year.

42. In terms of reporting, each municipality maintains detailed records for each production entity that participates in the project, along with diagnostics on the family units. Productive entities include credit and service cooperatives, agricultural production cooperatives, base units of cooperative production and state farms. However, project-level data aggregates different types of direct beneficiaries, such as producers, machinery operators and cooperative personnel. This makes it difficult to disaggregate by gender, age, type of productive entity and type of participation.

43. Additionally, the distinction between direct and indirect beneficiaries[7] has not always been clear among project stakeholders. As indicated in the project's 2023 Annual Performance Report, a methodology is being developed to allow for a more accurate estimation of indirect beneficiaries. This includes indicators to reflect indirect benefits more clearly.

Project indicators and the targets feasibility

Finding 4. The project-level objectives and indicators are well-aligned with the GCF core adaptation and mitigation outcome and impact areas, and FAO's strategic objectives. However, the defined indicators do not fully capture the project's contributions to strategic results, such as food security, and other social

[7] The 2020 project proposal defines direct beneficiaries as households benefiting from project activities. This includes farmers and their families, machinery operators, extension service technicians, agricultural technicians, cooperative leaders and administrators, and local producer organizations. Indirect beneficiaries are defined as additional inhabitants of the target areas that will benefit indirectly from increased food security and opportunities for employment in agricultural tasks and value addition. Indirect beneficiaries correspond to the total population of the seven municipalities targeted by the project.

and economic co-benefits. Project targets are ambitious yet feasible, provided an adequate project time frame is maintained.

44. The project's monitoring and evaluation strategy includes an appropriate mix of quantitative indicators, such as the number of producers trained or the area of land under improved and effective management, and qualitative indicators, such as the perceptions of farmers or municipal actors. The indicators are well aligned with the GCF core adaptation and mitigation indicators and FAO's strategic objectives for a better environment and a better life. All indicators are clearly mapped against the project's logical framework.

45. While the original project indicators remain valid, the Evaluation Team and project stakeholders noted several areas where the project's contribution to broader results are not being captured through identified indicators.[8] For example, logic model indicators do not reflect the project's contributions to increased food production, local food security, and other social and economic co-benefits. Additionally, governance indicators for Component 3 miss the project's overall contribution to municipal strategic planning and decentralization.

46. The project targets are ambitious yet feasible, if considered against the country context at the time of project design. The project's seven-year time frame and concentration of financial and technical resources in a limited number of the most vulnerable communities is viewed as a key design strength, both in terms of achieving the expected results and creating and reinforcing the conditions for the replication and scaling up of actions. The adjustment of the project's time frame, given implementation delays and changes in the national and international context (see Finding 8), will be an important consideration in ensuring that the final targets for all components are reached.

3.2 Level and quality of implementation

Evaluation question 2: To what extent and how has the project delivered planned activities and outputs as expected by the project's mid-term?

Quality and timeliness of activities delivered in relation to the planned outputs and mid-term

Component 1: climate-resilient agricultural systems

Finding 5. The implementation of Component 1, climate-resilient agricultural systems, is significantly behind schedule. While the project has made solid advances in implementing agroforestry and silvopastoral modules, less progress has been made in implementing forestry modules. The project modules reflect the use of good practices and sound technological approaches, which are backed by rigorous studies and evidence-based data.

47. As of December 2023, the project implemented climate-resilient modules on a total of 6 451 ha of land, representing a 37 percent advance towards the mid-term target of 17 867 ha. Different levels of progress were made for the implementation of each module.[9]

[8] The data was collected from semi-structured interviews with project management units and triangulated with other sources.

[9] A module is a specific agroforestry, silvopastoral or forestry system comprised of the structure of the system (for example, trees, bushes, row crops), the species involved (for example, mango, plantain, cassava), the inputs and land preparation needs (for example, marabou clearance, subsoiling, no-tillage), crop production methods (for example, transplanting, pruning) and other elements.

Table 4. Description of climate-resilient modules and levels of progress towards mid-term targets

Activity	Module	Description	Mid-term target (ha)	% of progress*
1.1 Agroforestry systems, plantations and natural regeneration management	CEDPLA	Agroforestry system with Cuban cedar (*Cedrela odorata*) interspersed among agricultural crops with live perimeter fences	1 214	49%
	FRUAGR	Agroforestry system with fruit trees, agricultural crops and living fences	1 397	44%
	MARFOM	Establishment and management of multipurpose forest plantations in marabou-infested zones (close-to-nature planted forest)	2 719	2%
	MARREG	Establishment of forests through assisted natural regeneration in areas invaded by marabou	1 788	15%
1.2 Silvopastoral systems	SILLEC	Silvopastoral system with arbustive leguminous plants	4 117	47%
	SILSOM	Silvopastoral system for grazing with shade trees, living fences, and protein and banks	6 451	47%

Note: Progress as of December 2023
Source: Authors' own elaboration.

48. The implementation of CEDPLA and the agroforestry system with fruit trees, agricultural crops and living fences (FRUAGR, by its Spanish abbreviation) modules reached close to 50 percent of the mid-term target, with a total of 1 206 ha under new practices. Both modules include food production, which provides social and economic co-benefits that are highly valued by the farmers and their families.

49. The project conducted a water balance study in 2022 based on recommendations from the GCF Independent Technical Advisory Panel (FAO, n.d.a; n.d.b). The study builds on previous research, conducted at the regional level during the project design phase, and provides an updated and more detailed assessment of the water balance at the municipal level. Study results confirmed that project activities would not have a negative impact on water supply for other uses. It also confirmed the need to invest in water reservoirs and efficient irrigation systems, and identified species of crops and trees that require smaller amounts of water. The detailed results are being used as a planning tool to support the implementation of project interventions, including the programming of irrigation activities and the planning of investment in water infrastructure.

50. Several producers noted the need for water reservoirs and irrigation systems to improve production and fully implement the planned actions. Following the approval of the 2022 water balance study, technical specifications for 452 water reservoirs, to be included as part of the CEDPLA and FRUAGR modules, are expected to be finalized in 2024. Additionally, importation delays are impeding the progress of the planned installation of the 440 drip irrigation systems. The systems are expected to arrive in the country in the second half of 2024.

51. Specialized research institutes and cooperatives are collaborating with the project to provide high quality genetic material needed for the implementation of the planned modules. For example, the Research Institute of Tropical Root and Tuber Crops is implementing the CEDPLA and FRUAGR modules and conducting trials to identify which varieties of sweet potato, cassava and other tubers grow best in the project areas. They produce quality seed and clones that are drought resistant, tolerant to pests and diseases, and have good anchorage (roots). They are supplying genetic material for the implementation of the CEDPLA and FRUAGR modules in all project regions.

52. For the silvopastoral modules – both the silvopastoral system for grazing with shade trees, living fences, and protein and banks (SILSOM, by its Spanish abbreviation) and the silvopastoral system with arbustive leguminous plants (SILLEC, by its Spanish abbreviation) – showed an advance of close to 50 percent of the mid-term target. A total of 5 035 ha is under the new practices as of December 2023.

53. Ranchers expressed a high degree of interest in improving their livestock and grazing areas. However, they also noted the need for the planned water reservoirs. The project is finalizing the technical specifications for the construction and refurbishment of 700 small water reservoirs for livestock as part of the SILSOM and SILLEC modules. Studies are expected to be completed in the second half of 2024, with reservoir construction and refurbishment planned for early 2025.

54. The implementation of the forestry modules showed the least progress, with 42 ha reached by the multipurpose forest plantations in areas invaded by marabou (MARFOM, by its Spanish abbreviation) module, the close-to-nature planted forest module, and 260 ha reached by the establishment of forests through assisted natural regeneration in areas affected by marabou (MARREG, by its Spanish abbreviation) module. The project faced delays in implementing the forestry modules due to the time needed to remove the marabou shrubs[10] from infested land. This was compounded by limited access to machinery and fuel. The International Model Forest Network estimated that in 2016, marabou covered 1 700 000 ha of once productive land (IMFN, 2016). Additionally, the process for the importation of infrastructure and equipment for three nurseries is underway, with operations expected to begin in 2024. This will help to increase the supply of tree seedlings.

55. As part of the actions carried out for the implementation of the six modules, 5 113 ha of marabou were eradicated. Capacity building and training materials were prepared and 102 machinery operators, of whom 19 percent were women, were trained to support land preparation activities.

56. The project is generating new knowledge and implementing good practices to remove marabou shrubs. The land is worked for three-month crop rotations with tillage to avoid the use of herbicides and prevent regrowth. The use of cassava has proven to be effective in preventing the regrowth of marabou, while providing the added co-benefit of food production. The implementation of this good practice takes about one year. During this period, the project simultaneously advances supporting activities such as fencing and fire prevention measures.

57. During the farm visits, evaluators observed the effective application of soil and water management technologies and practices, along with the use of living fences to protect the crops and trees. Planning and design specifications included the selection of drought-resistant tree, crop and grass species, along with varieties that have pivotal deep-root systems that provide more tolerance to the heavy winds that accompany tropical storms (GCF, 2020a).

58. To implement the project modules, farmers need to invest in land preparation and the provision of some inputs. For example, in most cases, land preparation involves the removal of marabou. This requires the use of specialized machinery provided by the project or through manual labour. Manual work is performed by family members in some cases, while, in other cases, farmers hire local workers. Other required inputs include basic tools, fertilizers and fences, as well as forest fire

[10] Marabou is a shrub of the Mimosaceae family, native to South Africa and introduced at the end of the 19th century for ornamental purposes. It is a very aggressive species, growing in all soils, altitudes and microclimates, and is found in almost all types of vegetation on the island. It is necessary to cut the plant from the root mechanically in order to remove it. This can also be done manually, but it is extremely hard and time-consuming due to its density and abundance of thorns.

prevention measures for the forestry modules. The project provides farmers with seeds or vegetative material, some tools and technical assistance.

59. The project facilitates farmers' access to economic resources so that they can finance their investments in the project's climate-resilient agricultural systems (see Finding 17). The National Forestry Development Fund (FONADEF, by its Spanish abbreviation) is a government mechanism that provides credit to farmers to cover the cost of implementing IRES modules (Republic of Cuba, 2012). The financing provided by FONADEF mainly covers the labour costs for module implementation (of the farmer, the farmer's family and hired labourers). Institutional staff prepared 104 applications to FONADEF by the end of 2023. Once the module implementation is completed and deemed to be carried out in compliance with technical standards, the farmers are provided with a 30 percent bonus as an economic incentive. If farmers do not fully comply with all technical and quality standards set out in the norm, then they may receive a lower bonus or no bonus at all.

60. Accessing credit is a new concept for many farmers, and those interviewed during the evaluation recounted differing experiences. Some farmers had learned and successfully accessed credit, while others did not fully understand the process and were still reluctant to take out loans. A third group of farmers did not need credit to finance the implementation of their planned IRES modules because they had enough income from other sources, such as the production and sale of marabou charcoal.[11]

Component 2: strengthened institutional and farmer capacities

Finding 6. The project has made significant advances in training at an institutional level, while less progress has been made in training agricultural producers. New knowledge and capacities are beginning to be applied to the implementation of the project's promoted climate-resilient practices. Some concepts, such as climate change mitigation, are more complex and difficult for stakeholders to understand.

Table 5. Strengthened institutional and farmer capacities progress towards mid-term targets

Indicator	Mid-term target	Mid-term results Cumulative Value	% of progress
Numbers of institutional staff trained	300	282	94%
Numbers of farmers trained	9 228	4 509	49%
Percentage of trained farmers who, indicate they have acquired new knowledge on Climate resilience of production landscape	90%	87%*	
Number of trained institutional personnel who indicated having used or applied the information received	100	103*	103%
Percentage of farmers trained who indicate they use at least one of the practices learned in Farmer Friel Schoold (FFS) on their own farms	30%	23%*	

Note: Progress as of December 2023 (APR 2023).

Source: FAO. 2023. *Methodology for Assessing and Monitoring Adaptation and Resilience.* Rome.

[11] The branches and trunks produced by clearing marabou are used by local farmers for charcoal production. This product has a high economic value in local and export markets, making this activity very attractive for farmers as a revenue stream that covers module implementation costs. Despite its positive economic impact, charcoal production causes GHG emissions that could affect the project's carbon balance.

61. A total of 282 institutional staff participated in the training, reaching 94 percent of the mid-term target. The institutional staff included extension workers and professionals from municipalities, state companies, professional associations, and other institutions linked to the project. The training included good practices to address climate resilience and restore productive landscapes. This covered topics on agroecological practices, farm planning, environmental and social safeguards, and gender issues, among others. The results of the project's adaptation and resilience survey[12] indicate that over 100 of the institutional staff trained are already using or applying the information received, exceeding the mid-term target.

62. The project established 17 field schools distributed across the seven project communities. A total of 4 509 farmers participated in trainings, reaching close to 50 percent of the mid-term target. Delays in starting field-level activities due to the COVID-19 pandemic, along with the need to first train extension workers and professional associations, contributed to slow progress in the first two years of project implementation. Regardless, implementation progress advanced significantly in 2023, with an accelerated pace expected to continue in 2024 and 2025.

63. Farmer trainings are designed using a practical, learning-by-doing approach that seeks to improve the knowledge and skills of producers with a climate resilience perspective. For example, at one of the visited field schools, the capacity building plan[13] included four modules covering:

    iii. collective perceptions of climate change and extreme weather events, agroecology as an alternative for farm transformation, and gender, innovation and resilience;

    iv. vulnerability at the farm level and details on how to estimate a farm vulnerability index;

    v. transformation of the farms, validation of the resilience functions, and selection of the appropriate practices and transformation plans for specific conditions; and

    vi. effective articulation of local entities and local networks organization, and an evaluation of the training process and recommendations.

64. During the evaluation, field mission farmers, extension agents and other professionals accompanying producers expressed their satisfaction with the training received and noted several areas where they have acquired new knowledge. For example, when reflecting on the trainings, one rancher noted: "I've learned what I never thought I would've learned. We didn't know what livestock farming was, what soil conditions are needed for planting. And we saw, when everything was presented to us that trees must be left for the cattle." The evaluation field observations and farmer interviews are consistent with the project's adaptation and resilience survey results, which indicate that 87 percent of trained farmers[14] have acquired new knowledge on climate resilience of production landscapes. This closely meets the mid-term target of 90 percent of farmers with new knowledge.

65. Training materials that target agricultural producers include practical information on the project's promoted climate-resilient production practices. Producers noted the usefulness of the learning guides that describe the conditions and characteristics of each project module. There is a high demand for accessible and printed learning materials, particularly in areas where connectivity is

[12] The survey was administered in 2023 by Ce-GESTA as part of the project's Methodology for Assessing and Monitoring Adaptation and Resilience. The survey included questions to gain insights into beneficiary and municipal stakeholder perceptions on the benefit of applying methods, practices and technologies to enhance climate adaptation and resilience, as well as the importance of integrating climate change adaptation and resilience into governance instruments, systems and incentive mechanisms.

[13] Information taken from the *El Alba* field school workplan during site visits.

[14] The survey sample included 406 trained farmers.

limited. The project's use of good agricultural practices, such as soil conservation practices and specific methodologies for the reproduction, planting and management of different species presents a range of opportunities for the generation of future knowledge management products. In one case, a participating farmer leader took the initiative to produce additional learning materials, such as brochures and pamphlets, for the use of Farmer Field School (FFS) participants.

66. The implementation of the project modules allows farmers to apply the knowledge acquired in field schools according to their farm plans.[15] Farmers receive technical support and are accompanied by institutional staff and extensionists on a regular basis. The results of the project's adaptation and resilience survey indicate that 23 percent of farmers are already implementing at least one of the practices learned at the field schools on their own farms. While these results are slightly below the expected mid-term target of 30 percent, they present early signals of the project's success given the recent implementation of the field school trainings and the time needed to prepare the land for production before the practices can be implemented.

67. Some farmers and municipal stakeholders noted that concepts such as climate resilience and climate mitigation are new to them and can be difficult to understand. Others noted specific technical areas such as soil conservation where they could benefit from additional technical support and materials.

68. The Evaluation Team observed varying levels of understanding climate change mitigation concepts. At a producer level, technical concepts like photosynthesis and its relationship with tree growth and GHG emissions removals, or how sustainable livestock practices and the use of organic fertilizers contribute to emissions reductions, are beginning to be understood by some producers but need more reinforcing for others. At the project team and partner institution level, how GHG emissions reductions and removals can be measured at the field level (module and farm), and how this field data can contribute to monitoring and reporting on Cuba's international climate commitments, remain challenging concepts for some.

Component 3: strengthened governance, legal and regulatory frameworks

Finding 7. The delivery of planned activities and outputs for Component 3 has met or surpassed mid-term targets. This is partly because implementing partners had more direct control over governance activities, while productive activities were impacted by external limitations.

[15] Farm plans are developed between the project extension specialist and the farmer. The plan contains general farm information like total area, agricultural land, marabou presence, existing crops, trees and cultivated areas, and existing livestock. Each farm plan details which modules will be implemented, the areas for each module, and other needs to be provided by the project like tools, water reservoirs and fences.

Table 6. Effective governance progress towards mid-term targets

Indicator	Mid-term target	Mid-term results cumulative value	% of progress
Proposals for formally approved policies, plans and financial incentives to motivate and support smallholder adaptation to climate change.	1	1	
Representatives of key organizations in seven target municipalities that indicate they have improved capacity to participate effectively and collaboratively in local, regional and national planning and decision-making processes related to management of the target landscapes	10	59	590%
Women and youth organizations targeted and involved in trainings	2	3	150%

Note: Progress as of December 2023 (APR 2023).

Source: FAO. 2023. *Methodology for Assessing and Monitoring Adaptation and Resilience*. Rome.

69. For Component 3, the project has met or surpassed its mid-term targets in terms of: i) establishing new plans and financial mechanisms for climate change adaptation; ii) improving municipal capacity to participate in decision-making and planning related to landscape management; and iii) increasing participation of women and youth in training.

70. The design of the new Landscape Resilience Fund started in 2022 with a feasibility study and an assessment of international good practices in establishing environmental and resource funds. The fund proposal was prepared by the Centre for the Study of Management, Local Development, Tourism and Cooperativism of the University of Pinar del Río (Ce-GESTA, by its Spanish abbreviation) with a team of experts from the project, the Ministry of Agriculture, the Ministry of Science, Technology and Environment, the Ministry of Finance and Prices, and the National Bank of Cuba. In fact, Ce-GESTA led a series of consultative, validation and training workshops in different regions of the country in 2023. The proposal was approved by the Ministry of Agriculture for official ministerial consultation in 2024 – on track for the fund to be legally established and operational by project closure. This progress has exceeded the target, which expected the analysis and discussions on proposal development to be ongoing at the project's mid-term.

71. The project has provided training to strengthen the focus of local development projects, which are the municipal government's main planning mechanism. Four hundred fifty (274 men, 176 women) stakeholders (senior government managers, members of producer associations, producers, university staff) had received training related to local development projects, planning and decision-making on landscape resilience and territorial development by the end of 2023. Participating organizations included three different youth and women's organizations,[16] with representation in all seven project communities. Additionally, the project's adaptation and resilience survey covered 59 representatives of key entities who indicated that they have improved their capacity to participate effectively and collaboratively in local, regional and national planning and decision-making processes related to landscape management. Both metrics exceed the mid-term targets.

[16] Participating organizations included the young agroecologists committee from ACTAF, the Cuban Women's Federation and municipal gender committees.

72. The project has made more progress in governance outputs than the other two components during the first few years of implementation. This is partly because the implementing partners had more direct control over governance activities, while productive activities were impacted by external limitations such as procurement delays or the fuel shortage.

Finding 8. A confluence of factors, largely beyond the project's control, is affecting the project's progress towards mid-term and final targets. Although notable progress was made, it is unlikely that all the targets will be met within the original project timelines due to implementation delays and changes in the national and international context since the time of project design.

73. The project was launched in June 2020. This coincided with the start of the COVID-19 pandemic restrictions. Although significant progress was made during the first two years in areas such as technical studies, communication strategies, governance and the establishment of partnerships and alliances, activities on the ground did not begin until April 2022 with the easing of the pandemic restrictions.

74. The project faced distinct procurement challenges that led to importation delays. Project implementation depends heavily on the importation of equipment (tractors, irrigation systems, nursery structures) and inputs (fuel, lubricants) that are not available in Cuba. There is a limited supply of national providers, and conditions related to economic sanctions create unfavourable conditions for international suppliers. These conditions, compounded by global supply chain disruptions, led to lengthy processes and delays in receiving the needed equipment and machinery.[17] Additionally, increased import costs due to rising freight rates and the elevated prices of goods in general placed the project in the unfavourable position of meeting the rising cost of project import commitments with a static project budget.

75. Evaluators observed a high level of stakeholder engagement and participation at all levels to find solutions and adaptations to advance implementation. For example, the project began implementing productive modules in areas less infested with marabou that could be cleared by hand. It accelerated work with state enterprises, such as the AZCUBA Sugar Group,[18] which had access to fuel, technical capacity and large tracts of unused land.

76. Fuel shortages have presented a significant challenge since the end of 2023. This is due to the country's complex energy context. The project identified adaptive strategies, such advancing implementation in areas where productive organizations could prioritize both centrally allocated fuel (AZCUBA) and modules that guarantee food production. This aligns with local government priorities and approvals.

77. All of the project's consulted stakeholders noted the impact that the COVID-19 pandemic and the late arrival of needed equipment and machinery are having on project implementation.[19] They

[17] For example, acquisition of the RT 400 tractors, needed for the removal of marabou, took eight months. The procurement took longer than planned as the manufacturer's representative in Cuba could not comply with bank commitments. This required a change in the direct provider. In the case of the 25 horsepower tractors, negotiations were completed with a supplier from the United States of America who met the required quality and had a licence from the Office of Foreign Assets Control from the United States Department of the Treasury. However, the supplier was not able to deliver due to the licence being revoked.

[18] The AZCUBA Sugar Group is the Cuban state enterprise in charge of directing and controlling the entities that make up the sugar agroindustry for the development and production of sugar, sugarcane derivatives and food for human consumption.

[19] The data was collected from semi-structured interviews and focus groups with members of the provincial and municipal coordinating committees. Further information on specific data collection methods see section 2.2.

highlighted the need to extend the project timelines to reach targets, particularly the project's targets for the amount of land and forest under improved and effective management.

Project's information management, monitoring and reporting systems in decision making and adaptive management

Finding 9. The project's monitoring and reporting system provides detailed and timely data to a wide range of stakeholders at local and national levels. Information is being used to inform decision-making, particularly on the optimal allocation of project resources. Data collection and monitoring tools include well-designed methodological protocols. These, however, could benefit from a more strategic approach with a greater attention to data analysis.

78. The project's monitoring and reporting system is fed by data generated at the local level. Each productive unit is guided by a comprehensive and customized farm management plan that includes technical characteristics of the land and preparation needs, specifications for planned activities, details of financial resources and inputs needed, and the identification of environmental and social safeguards to be followed. Producers play an active role in monitoring the implementation of their individual farm management plans with the accompaniment and support of technical specialists and project coordinators. During farm visits, producers demonstrated a high level of commitment and accountability to report against criteria included in their farm plans.

79. Field-level information is complemented and validated with georeferenced data, collected using new technologies. In 2022, the maps and records of 100 percent of the implementation areas at the farm level were updated using drone technology. In 2023, the project began using a new geospatial data infrastructure platform. The platform, developed in collaboration with the University "Marta Abreu" of Las Villa and the company, GEOCUBA, allows for the collection of real-time data on land use that can be accessed through web technologies at both a local and national level by a wide range of stakeholders.

80. The use of real-time geospatial data is innovative in the project regions. The platform is meant to facilitate the monitoring and follow-up of the implementation of project modules. Municipal officials and project coordinators were trained in the use of the platform and now regularly access information to monitor and report on project progress and inform municipal planning. In a few cases, farmers and ranchers with larger productive areas demonstrated how they access the geospatial data via their cell phones and use this information to further develop their farm plans. For example, the information is helping them to identify optimal locations for tree planting or paddocks. In other cases, producers and project coordinators noted connectivity issues as a barrier to full access and the need for additional training to increase access and use by a greater range of stakeholders, including government officials and women.

81. Project coordinators have overall responsibility for timely data collection, analysis and reporting. This includes coordinating regular site visits, ensuring information flows to municipal and provincial coordinating committees, and providing monthly updates to the national project management teams. Collaborating institutions such as technical organizations and universities also track and report data on areas related to capacity building and training. Data are integrated with national information systems,[20] allowing for easy access by national government officials in several ministries.

[20] The National Statistics Office is responsible for managing the National Statistical System and consolidates data at a country level.

82. Monitoring data are systematically analysed and used by the municipal and provincial project coordinating committees. Committees meet bi-monthly to monitor project progress and make collective decisions on the allocation of resources based on identified capacities, needs and challenges. For example, committees direct the use of tractors to productive units that have access to fuel, improve access to chainsaws in areas where marabou removal is delayed, and identify specialized technical expertise for producers facing specific production issues. Coordinating committees also noted that project data and analysis are useful in advocating to central government officials for access to scarce resources, such as fuel.

83. The use of multisectoral checks was identified as a good practice for regular monitoring. For example, in the municipality of Colombia, the political delegate convenes weekly meetings to review project progress in collaboration with project coordinators, municipal representatives and technical experts from various sectors. In addition to providing insight on project progress and the quality of actions, the multisectoral checks help to elevate the profile of the project, demonstrate political will, provide transparency and reinforce local ownership.

84. Additional oversight is provided by the national Project Management Unit and FAO project officials and technical advisors. Joint monitoring visits are conducted to assess overall progress as well as review the implementation of gender action plans, complaint mechanisms, and environmental and social safeguards.

85. The design of the project's data collection and monitoring tools include well-designed methodological protocols. These, however, could benefit from a more strategic focus and differentiated data analysis. For example, the project's methodology for assessing and monitoring adaptation and resilience (FAO, n.d.c.) includes a robust framework and clear data collection protocols, but the structured questions do not capture training and capacity building in areas not related to the production modules. Additionally, gender considerations were not fully integrated into the methodological design of project monitoring and reporting. Although survey participants were disaggregated by gender, age and institution, there was no differentiated analysis of the survey results.

86. Ongoing challenges include the high administrative burden and complexity of responding to and aligning with multiple frameworks and reporting requirements from the GCF, FAO and the Government of Cuba. For example, monitoring and reporting on the project's Gender Action Plan and Environmental and Social Safeguards Framework is distinct from reporting against the performance indicators in the project's logical framework. Additionally, national statistical systems aggregate information at different units of production than the project. These challenges cause difficulties in ensuring the consistent collection and reporting of disaggregated data in some areas (see Finding 3 and Finding 20) and is shifting scarce time and resources away from more robust analyses and the use of information.

Finding 10. The project's knowledge generation and dissemination activities are strengthening a science-based culture among project beneficiaries and municipal stakeholders. New Information and knowledge are being used to reinforce project implementation and inform local planning. The use of both formal and informal knowledge dissemination channels is expanding the reach and impact of project activities beyond the direct beneficiaries.

87. The project applies a strong science-based approach to knowledge generation. Research institutes, universities and international experts collaborate to conduct technical studies in areas such as water availability, soil conditions and microclimates. New knowledge is being used to improve project implementation. For example, research on the use of substrates and microorganisms is being applied to the production of seedlings in project nurseries. Additionally,

project-generated data is informing municipal decision-making. For example, the municipality of Jobabo used the project's hydrological study to develop its municipal water management plan.

88. At a producer level, the use of WhatsApp networks provides a valuable space for farmers to share learnings and information and to post questions. Many producers, particularly early adopters and farmer leaders, are highly active in leading and managing the networks. Others identified connectivity issues as a barrier. Anyone interested can join the networks, and many members are not project participants. This is expanding the reach of the project beyond direct beneficiaries. Farmer-to-farmer exchanges are also highly valued by producers, with some participating in national events. At the project level, learnings and experiences are being shared internationally. For example, in 2023, project representatives from FAO and the Ministry of Agriculture jointly participated in the United Nations Framework Convention on Climate Change, COP 28, in Dubai and the XII International Congress of Silvopastoral Systems in Uruguay.

89. The project's communication activities are disseminating information about the project to the public and raising awareness on climate resilience and the importance of the agriculture sector. Materials are disseminated through various means, including social media (YouTube, X), television campaigns, promotional materials and printed stories in local and national press. While the effectiveness of these materials and their reach was not assessed in the evaluation, some beneficiaries noted that they first became interested in participating in the project when they viewed information about it on television and in the press. Others expressed a sense of pride in seeing themselves represented in these materials and perceived that these efforts are helping to raise the profile of the rural sector.

Project governance structure in efficient and effective project implementation

Finding 11. The project has an effective governance model, with strong ownership and ongoing collaboration among implementing partners at all levels. It has built capacity and mechanisms for diverse stakeholders to take part in decision-making, implementation, monitoring and knowledge sharing.

90. The Government of Cuba, represented by the Ministry of Agriculture, is the project's Executing Entity, with FAO as the accredited entity and the co-Executing Entity responsible for financial and operational implementation. There is strong collaboration between these two entities.

91. Project governance is led by two national committees. The national Project Steering Committee is headed by the Ministry of Agriculture and comprised of ministers from the Ministry of Agriculture, the Ministry of Foreign Trade and Foreign Investment, and the Ministry of Science, Technology and Environment, as well as the FAO Representative in Cuba. The Project Steering Committee provides strategic guidance for project implementation and ensures interinstitutional coordination and the delivery of planned government co-financing. The national Project Coordination Committee is composed of the national project director (Ministry of Agriculture), the national project coordinator (FAO) and technical representatives from both the Ministry of Agriculture and FAO, as well as the accompaniment of national technical institutions and provincial project coordinators.

92. To implement the project, the Ministry of Agriculture set up a national Project Management Unit with staff designated to work full-time on one project for the first time. That time allocation and focus improved project implementation. The Ministry of Agriculture also has small, full-time Project Management Units at the provincial and municipal levels that provide clear direction and support for the implementing partners.

93. The project units work closely with three provincial and seven municipal coordinating committees that represent each of the project's areas of intervention. Each committee has ten to 15 representatives from technical divisions of the Ministry of Agriculture and the Ministry of Science, Technology and Environment, administration councils, food security councils, state enterprises, ANAP (producers), ACTAF (technicians), academic and scientific institutions, and the gender committee (municipal level).

94. The coordinating committees play an active role in project governance and implementation. They take part in strategic planning, coordination and monitoring, while also contributing technical resources to project implementation. Committee members who have been involved since the beginning of the project reported that they participated in the project design, as well as the selection of intervention areas, beneficiaries and productive modules to implement there.

95. Committee members interviewed from all organizations (government, producer associations, universities) have a high level of engagement, knowledge and appropriation of the project. Several provincial and municipal members said that they were fully part of the IRES team, or that the project was theirs. One member stated: "The IRES team listens to us and respects us. They've responded to our needs in the municipality." Another committee member noted: "This group is very active. If the project has a problem, we all go out to that farm and work together as a team to solve it. We all meet once a month, but most of us see each other every week to talk about issues that come up."

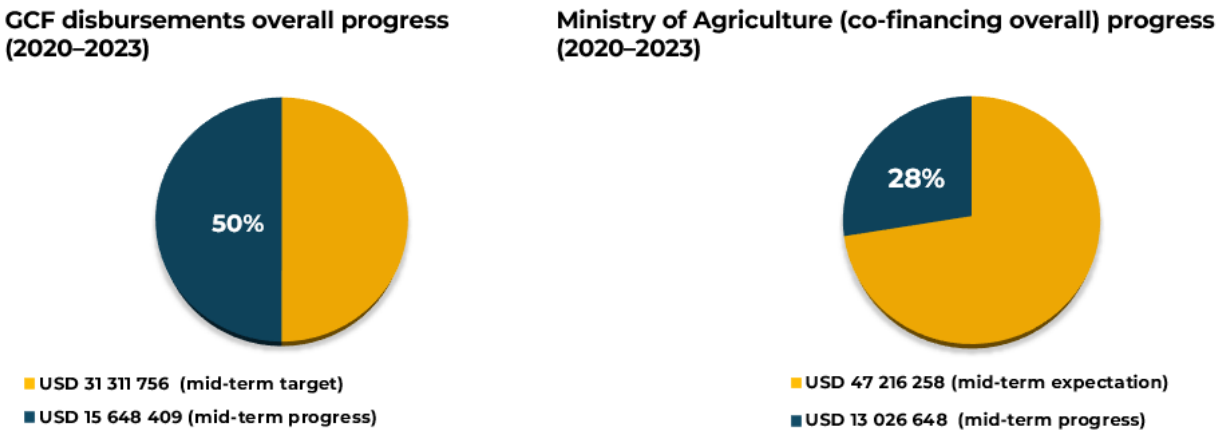
96. Despite the number and diversity of stakeholders, there is dynamic vertical and horizontal integration among them. The coordinating committees and project management units work closely together to ensure effective and ongoing coordination and communication from the municipal to the national level. Municipalities share their experiences and learning at joint training events or through their active social media platforms.

97. The project's adaptive management approach has enabled it to respond effectively to diverse or changing conditions at different levels. For example, the project worked with individual farmers to adapt productive activities to their conditions and added new training as needs were identified or evolved. Based on municipal assessments, the project assessed and tailored activities to meet the distinct needs and capacities of each region. When external limitations such as fuel shortages or import restrictions delayed work on some components, the project pivoted to focus on results it could deliver or land areas where equipment was not needed to progress on productive activities. As government priorities such as food security and decentralization gained momentum, the project found ways to contribute more to policymaking, capacity building and programme implementation in those emerging areas.

Co-financing delivery

Finding 12. Disbursements of the GCF grant financing and the Ministry of Agriculture co-financing are shown as the amounts expected at the project's mid-term. This is largely due to implementation delays and currency rate adjustments of the Cuban peso. Planning and adaptive management by the national Project Management Unit helped ensure that co-financing disbursements are providing the technical, logistical and financial capacity needed to advance implementation.

Figure 3. Disbursements of the GCF grant financing and the Ministry of Agriculture co-financing



Source: Authors' own elaboration based on Annex 3 Funding Proposal, Schedule 2: Budget and Disbursement Plan and the APR 2020–2023.

98. The Ministry of Agriculture's financial proposal as the project's co-executing agency includes co-financing commitments of the Cuban peso equivalent of USD 81 700 000, which corresponds to 68 percent of the total project budget. Agreed yearly amounts include costs associated with areas such as technical and logistical support to implement land management modules, training support for farmers and institutional staff, and financial support to secure farmers' access to credit. Co-financing disbursements reported up to the end of 2023 amounted to just over USD 13 million, equivalent to 28 percent of the midterm co-financing commitment.[21]

99. In 2022 currency exchange rate re-alignment of the Cuban peso seemed to present a challenge for the Ministry of Agriculture to meet the agreed upon co-financing in United States dollar equivalent amounts given the current economic and fiscal crisis facing the Cuban state. At the time of project approval in 2020, the currency exchange rate of the Cuban peso matched the United States dollar at a 1 USD to 1 CUP ratio. The Government of Cuba's 2022 currency exchange rate re-alignment resulted in a new exchange rate at a 1 USD to 24 CUP ratio.

100. Despite these challenges, the Government of Cuba has maintained its commitment to ensure the continued flow of resources and to deliver the agreed upon co-financing amounts. Projected disbursements are included in the National Economic Plan, with the support of key ministries such as the Ministry of Finance and Prices, the Ministry of Economy and Planning, and the Ministry of Agriculture. In 2024, approximately USD 12 million is budgeted for project co-financing. As of the first semester of 2024, the government reported co-financing of 8.6 million dollars (73 percent of 2024 commitment).

101. The national Project Management Unit developed adaptive strategies to ensure the effective use of co-financing to advance project implementation. In the initial years, when field activities were not possible, resources were allocated to strengthen the technical capacities at local levels with the active participation of collaborating institutions such as ACTAF, ACPA and ANAP. Additionally, to help address fiscal challenges and increase the prospects for financial sustainability, the project

[21] Amount calculated based on Schedule 2. Budget and Disbursement Plan of the Funding Proposal.

worked with Ce-GESTA to identify areas of resource complementarity across projects and local initiatives, as well as diversify local financing sources and support for local development projects.

102. The GCF grant financing has been largely allocated to the procurement of machinery and equipment needed to implement the project's land management modules. As of December 2023, the GCF made disbursements totalling USD 15 600 000, reaching 50 percent of the planned mid-term amount. Early implementation delays, along with the time needed to complete and receive approvals for the required technical studies,[22] contributed to the lags in GCF disbursements.

Project coherence and complementarity with other climate finance initiatives

Finding 13. Synergies across climate finance initiatives and other international and local projects are helping to create a more comprehensive and systemic approach to climate resilience at a national, provincial and municipal level. Strategies include sharing resources and tools, and collaborating on knowledge exchange and dissemination initiatives. Enabling factors include active coordination efforts of municipal and provincial officials, and the use of multistakeholder governance platforms.

103. Climate finance initiatives in Cuba are largely funded through the GCF and the Global Environment Facility. In the project regions, there are also a small number of international cooperation initiatives in the agriculture sector that are funded through agencies such as the Swiss Agency for Development and Cooperation. Additionally, at the municipal level, there are several local development projects aligned with municipal strategic priorities like food sovereignty and security, natural resources management, and sociocultural and community development. The project, alongside municipal and provincial Ministry of Foreign Trade and Foreign Investment officials,[23] actively fosters connections and identifies areas of collaboration between projects. A few key examples of complementarity and coherence are highlighted below.

104. The GCF-funded project, Coastal Resilience to Climate Change in Cuba through Ecosystem-based Adaptation, known as MI COSTA (GCF, 2024b) and implemented by the United Nations Development Programme, focuses on restoring mangroves, swamp forests and grass swamps. The aim is to protect ecosystems and enhance climate adaptation. Both IRES and MI COSTA work in the same intervention communities in the province of Las Tunas, but in complementary areas. The two projects actively collaborate and share resources. For example, they share spaces, such as field schools, and conduct joint training sessions on transversal areas like gender equality and environmental and social safeguards. Additionally, they collaborate on knowledge dissemination and awareness-raising activities and materials. These efforts help both projects to expand their reach, achieve their expected results and reinforce concepts of climate resilience at a local level.

105. The Global Environment Facility-financed projects such as ECOVALOR (Ecovalor, 2024) and OP 15 (GEF, 2003), implemented by the United Nations Development Programme, focus on the economic valuation of ecosystems and financing mechanisms for sustainable land management. These two projects and IRES create synergies by sharing experiences and knowledge in areas of green finance and integrated land management. For example, tools and studies generated by

[22] The completion and GCF approval of the two technical studies – a water balance study and a carbon balance study – was a condition for the release of the second disbursement. In addition to the time needed to conduct the studies, the process was slowed by lengthy FAO review processes at the central level to confirm the studies' compliance with technical specifications. The second disbursement was requested in November 2022 and released in August 2023 once these conditions were lifted.

[23] As part of the decentralization process, the Ministry of Foreign Trade and Foreign Investment officials at the territorial level are playing a greater role in coordinating and monitoring development projects. A few officials noted that they need more capacity development to better handle their increased responsibilities.

these projects are being used by IRES and representatives from both ECOVALOR and OP 15 who participated in the IRES-led workshops on developing the Landscape Resilience Fund. These efforts create linkages with IRES in areas beyond the project's scope, that is, green finance, as well as create a broader territorial vision of landscape management.

106. At the territorial level, the Support for Cooperative Management in the Agricultural Sector in Cuba project, known as APOCOOP, is funded by the Swiss Agency for Development and Cooperation. It focuses on cooperative management for increased productivity and sustainability in the agricultural sector. In fact, APOCOOP and IRES collaborated through the training of cooperatives in their respective areas of expertise. Sharing knowledge and inputs helped both projects reach more cooperatives and cover a more comprehensive range of issues. For example, IRES was recognized for helping APOCOOP incorporate environmental and social dimensions of cooperative management into their training activities.

107. Local development projects, financed through municipal funds, favour initiatives that promote productive and service linkages, as well as co-financing actions with other local and international projects. Most projects include multistakeholder governance structures that involve a high degree of commonality among members. Additionally, all projects are monitored by municipal development groups. This helps to maximize synergies across projects. Appendix 5 provides a more detailed project mapping to illustrate how initiatives at various levels are creating synergies in one municipality.

108. The project provided technical assistance to municipal officials in order to strengthen the planning and implementation of local development projects. This includes integrating climate resilience and gender considerations. The project gave producers training and technical advice to prepare funding proposals for local projects. Many of the local projects are designed to build upon or complement IRES activities. For example, municipal seedling nursery projects will use equipment provided by IRES, and farmers' projects to process milk or honey are based on increased production and technical capacity from IRES training and inputs.

109. Looking ahead, the Evaluation Team identified opportunities to strengthen strategic collaborations across the FAO Cuba project portfolio in areas of measuring and reporting on GHG emissions reductions and removals. For example, the Global Environment Facility-financed project, Enhancing Cuba's Capacities for Enhanced Transparency under the Paris Agreement, includes technical assistance towards developing Cuba's measuring, reporting and verification system. Activities target priority NDC emissions reductions actions in the agriculture, forestry and other land use sector. Additionally, the GCF-financed Reducing Emissions from Deforestation and Forest Degradation in Developing Countries initiative, known as the REDD+ Readiness Preparation in Cuba project, supports the preparation of a National Forest Monitoring System with institutional frameworks for data generation, reporting and the calculation of GHG emissions factors. Leveraging capacity building activities and fostering knowledge sharing across these areas could strengthen the IRES contribution to Cuba's NDC mitigation objectives and open future financing possibilities under the Reducing Emissions from Deforestation and Forest Degradation in Developing Countries framework.[24]

[24] Reducing Emissions from Deforestation and Forest Degradation in Developing Countries is one of the mechanisms that aims to protect forests as part of the Paris Agreement. Its abbreviation of REDD+ with the plus sign stands for additional forest-related activities that protect the climate, namely sustainable forest management and the conservation and enhancement of forest carbon stocks. Under the frameworks, developing countries can receive results-based payments for emissions reductions when they reduce deforestation.

3.3 Progress towards expected results

Evaluation question 3: To what extent and how are the outputs achieved contributing to the expected results?

Mitigation results

GCF mitigation outcome area M9.0: improved management of land or forest areas contributing to emissions reductions

GCF mitigation impact area M4.0: reduced emission from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks

Finding 14. The effective implementation of the project's agroforestry, forestry and silvopastoral modules leads to GHG emissions reductions and removals. However, there are opportunities to strengthen capacities to monitor and report on emissions reductions, particularly in relation to the country's NDC.

110. The project's carbon balance was initially estimated in the design phase, using FAO's EX-ACT (FAO, 2022b).[25] In 2022, at the request of the GCF, the emissions reductions calculations were updated for the project's two silvopastoral modules (SILLEC and SILSOM). This was due to the establishment of protein and energy banks to produce supplementary feed for animals. The data and sources used in both projections include data taken from scientific research carried out in Cuba and information from the Intergovernmental Panel on Climate Change Tier 1 level data.

111. The updated GHG emissions reductions and removals values calculated for the silvopastoral modules, together with the original values calculated for the other modules, has an estimated value of −1 066 055 tCO_2e for the seven-year project implementation period, with a net balance of −3 040 000 tCO_2e over a 20-year period. These projections are based on a comparison with the no-project scenario (FAO, 2022a).

112. Table 7 details the total area planned for the implementation of each module. It corresponds to the 20-year emissions reductions projections, the actual planted area and the cumulative emissions reductions reported.

113. The estimated emissions removals and reductions as of December 2023 (−327 589 tCO_2e) reaches 61 percent of the (updated) mitigation mid-term target (−533 027 tCO_2e). When analysing the emissions reductions and removals reported as of December 2023, an overestimation is observed. This arises from inconsistencies in the implementation areas (hectares) detailed in the EX-ACT files for the SILLEC and SILSOM modules with those reported in the 2023 IRES Carbon Balance Monitoring Report.[26] Furthermore, the EX-ACT files that quantify the mitigation potential of the six modules, included as part of the 2023 Annual Performance Report, consider an implementation period of four years. However, the modules' field implementation effectively started in 2022. Therefore, the implementation period should be two years (see Appendix 6).

[25] FAO's EX-ACT assesses the impacts of interventions in the agriculture, forestry and other land use sector on GHG emissions. It provides estimates on the mitigation potential of projects at the national level, allowing decision-makers to understand whether the planned interventions contribute to achieving the proposed climate change mitigation targets. The tool consists of ten worksheets, distributed in three modules (description, activities, results), with which users interact. At the same time, the bulk of the calculations are done in spreadsheets that are not available to users. This ensures that they cannot modify the content by accident, which could lead to incorrect results.

[26] The 2023 IRES Carbon Balance Monitoring Report provides a value of 1 974.50 ha for the SILLEC module, while the EX-ACT file reports 2 353.00 ha. For the SILSOM module, the 2023 IRES Carbon Balance Monitoring Report states 3 059.00 ha, and the EX-ACT file reports 3 708.00 ha.

Table 7. Cumulative emissions reductions by module type as of December 2023

EX-ACT	Module	Projections		Mid-term results	
		Total area (ha) to be implemented in seven years (final target)	Projected 20-year emissions reductions and removals[1] (tCO_2e)	Planted area (ha) as of December 2023	Emission reductions and removals (tCO_2e)
Version 7	**CEDPLA**	1 754	−15 081	597.32	−45 902
	FRUAGR	2 529	−15 687	608.30	−6 079
	MARFOM	8 167	−812 138	42.00	−4 861
	MARREG	3 095	−604 359	260.40	−55 952
Version 9	**SILLEC**	10 499	−788 541	1 974.50	−110 114
	SILSOM	9 691	−671 067	3 059.00	−104 681
TOTAL		**35 735**	**−3 045 873**	**6 541.52**	**−327 589**

Note: [1] The SILLEC and SILSOM modules were updated in 2022. The remaining data corresponds to estimations made in 2019.
Source: Authors' own elaboration.

114. With the effective implementation of the project's agroforestry, forestry and silvopastoral modules, the project is on track to achieve emissions reductions and removals targets. Revising the EX-ACT files estimations, to be consistent with the December 2023 carbon balance report estimates, will help to more accurately monitor and report on progress. Additionally, conducting field sampling to determine emissions reductions and removals could further improve the monitoring of the project's targets.

115. Efforts to strengthen GHG emissions reductions monitoring and reporting could also be linked to the country's ongoing process of developing a national measuring, reporting and verification system. The implementation of 11 262 ha of forestry modules, including plantations and regenerated forest and their corresponding emissions removals, will contribute to Cuba's NDC. One of the main targets of Cuba's NDC is the increase of forest cover by 165 000 ha between 2019 and 2030, linked to the corresponding GHG emissions removals (Republic of Cuba, 2020).

116. In 2023, FAO provided a specialized workshop on the EX-ACT tool and carbon balance led by an international specialized consultant. The training targeted high-level professionals from the Ministry of Agriculture, FAO Cuba and the IRES national project teams. Participants learned how to use the tool to assess the impacts of interventions and to estimate the mitigation potential of new activities. The complexities of linkages between forest and land use activities and GHG mitigation mean that it will also be important to strengthen knowledge and capacities at the farmer, institutional staff and project team levels.

Adaptation results

GCF adaptation impact area A1.0: increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions

GCF adaptation outcome area A1.0: improved resilience of ecosystems and ecosystem services

GCF adaptation outcome area A7.0: strengthened adaptive capacity and reduced exposure to climate risks

Finding 15. There is high demand among agricultural producers to participate in the project, even though the total number of direct beneficiaries reached by the project is below the mid-term target. Early results demonstrate that the productive landscape restoration activities are triggering an environmental recovery

process at the farm and landscape levels. This is contributing to improved climate resilience and the livelihoods of agricultural producers and their families, as well as enhanced ecosystem services for the municipalities and the surrounding areas.

117. The project reached a total of 15 674 direct beneficiaries, which represents a 63 percent progress against the mid-term target of 25 549 direct beneficiaries.[27] The percentage of female beneficiaries, at 38 percent, is also below the mid-term target of 46 percent. Delays in initiating field-level activities affected the number of beneficiaries reached by mid-term. As implementation progressed and resources arrived, demand for participating in the project exceeded capacity in 2023. In fact, all municipalities keep a waiting list of interested producers to be incorporated in future years.

118. All municipalities reported a small number of producers, less than 10 percent, who have left the land that is under project management – either due to internal or external migration or death. A list of producers waiting to enter the project is being maintained and efforts are being taken to ensure that the usufruct or other land rights are passed on to new producers to maintain the integrity of the already initiated activities.

119. Climate-friendly agroecological practices were unknown to most of the farmers prior to attending the FFS initiatives. The project's adaptation and resilience survey results found that 86 percent of the surveyed farmer beneficiaries now have a positive perception about the advantage of including new production methods and practices to improve climate resilience. This is close to the mid-term target of 90 percent of farmers with positive perceptions.

120. The implementation of the project modules allows farmers to diversify their food production, improve their livelihoods and enhance ecosystem services. This contributes to a strengthened adaptive capacity. At the family level, beneficiaries are also increasing their climate resilience and reducing exposure to climate risks. For some farmers, the possibility to link their food production with value chains and develop microenterprise start-ups is emerging as an opportunity to generate additional sources of income. Further, the implementation of forestry modules aligns with Cuba's NDC adaptation activity priorities. These efforts target reforestation linked to the protection of soil and water, the recovery of mangroves, water reservoirs, channels and watersheds (Republic of Cuba, 2020).

121. Regarding their production, 40 percent of the surveyed farmer beneficiaries consider that their production is already more resilient – close to the mid-term target of 50 percent (medium level). These results are perceptions that are not backed by quantifiable data. However, they provide early indications of the project's potential success, especially since most respondents had received training and began implementing their modules less than one year prior to completing the survey.

[27] Direct beneficiary data include producers and their families, and other direct beneficiaries such as machinery operators, extension workers, personnel from the Comprehensive Base Business Unit of Technical Services (UEBIST, by its Spanish acronym), cooperatives and businesses, and laboratories and science centres that have received resources. The project did not report on indirect beneficiaries reached. As noted in the project's 2023 Annual Performance Report, a methodology is being developed to allow for a more accurate estimation of indirect beneficiaries, including indicators that can reflect indirect benefits more clearly.

122. Focus group discussions[28] were carried out by the project to assess beneficiaries' perceptions about ecosystem services enhancement in their municipalities and the surrounding areas. These identified the ecosystem services that show the most improvement as increased shelter and shade for animals, improved fauna (especially for bees, birds and snakes), improved air quality, and better landscapes. The services rated with the lowest level of improvement included: improved and enhanced recreational services, followed by erosion reduction; better water supply (quality and quantity); reduced exposure to heat; and improved wildlife habitats (GCV, 2023a).

123. Evaluators validated the survey and focus group discussion results through direct observations during farm visits and interviews with farmers and municipal stakeholders. Respondents identified several areas where ecosystem services are being improved, such as: soil erosion control; provision of shade for cattle and other animals; increased water infiltration; provision of firewood; pollination; biodiversity conservation; and carbon removals. While farmers and local stakeholder do not always refer to these areas as ecosystem services, they distinguish them well and consider them as environmental benefits related to the implementation of the modules. Further, all of the visited agricultural producers identified tangible production results attributed to the implementation of the project's modules.

Governance results

GCF adaptation outcome area A5.0: strengthened institutional and regulatory systems for climate-responsive planning and development

124. Under this higher-level GCF outcome, the project's logical framework presents three expected results related to governance: improved national policies and ecosystem services for landscape resilience; a new national Landscape Resilience Fund; and strengthened planning, governance and coordination at the territorial level.

National policy reform

Finding 16. Through the project, partners contribute to the development, update and implementation of national laws related to climate resilience and agriculture. At the same time, these partners gain capacity and tools to implement and disseminate these laws at the territorial level.

125. Several territorial government representatives highlighted the project's notable contribution to formulating new laws or updating existing legislation and implementation. This has shifted the focus from maximizing agricultural production to climate-resilient systems.

[28] Focus group discussions were conducted in December 2023 as part of the project's Methodology for Assessing and Monitoring Adaptation and Resilience. The purpose of the focus group discussions was to learn respondents' perception on ecosystem services and the observed changes in their municipalities following project implementation. One focus group discussion was conducted in each municipality for a total of seven focus group discussions. The focus group discussions involved a non-statistical sample of 82 participants, including both direct and indirect project beneficiaries.

Table 8. Project contribution to the development, reform and implementation of national laws

Law	Project contribution
Food Sovereignty and Food and Nutritional Security Law (National Assembly of People's Power, 2022)	• Promoted reforms to strengthen climate-resilient agroforestry, silvopastoral and livestock • Validated draft law with diverse stakeholders • Incorporated representatives of provincial/municipal food security commissions into project coordination • Disseminated and raised awareness about the law; developed capacity of project stakeholders to implement it • Coordinated project actions with national food security programmes; contributed to local food security
Livestock Promotion and Development Law (National Assembly of People's Power, 2023b)	• Facilitated development of the law by holding four national and regional workshops and promoting climate change adaptation/mitigation as a main principle of sustainable livestock production and silvopastoral systems • Produced and disseminated postcards for public education
Land Law (2023)	• Provided technical assistance: approaches for climate change adaptation and mitigation of agroecosystems • Held workshops with relevant stakeholders (government, producers, enterprises, universities) as inputs to drafting the law
Natural Resources and Environment System Law (National Assembly of People's Power, 2023a)	• Provided technical input for sections related to climate-resilient agriculture
Forestry Law (to be updated in 2024) (National Assembly of People's Power, 1998)	• Provided support for 19 measures to strengthen the National Forestry Directorate and Forestry Services • Provided technical support: reports on forest management and payment for ecosystem services; analysis of proposed amendment • Held workshops with relevant territorial stakeholders
Strategic Management of Territorial Development Decree (being updated) (Council of Ministers, 2021)	• Provided technical assistance

Source: Authors' own elaboration

126. According to a Ministry of Science, Technology and Environment analyst, "IRES gave us the training and tools to influence the formulation of new laws, and the technical capacity and means to implement those laws through our work." For example, IRES provided support for AZCUBA to implement the law to diversify sugar production land.

127. The project created a virtuous cycle by strengthening national legislation and building territorial capacity to implement new laws and policies related to climate-resilient agriculture and food security. This, in turn, aligned the project even more closely with national laws and priorities.

Landscape Resilience Fund and other financial mechanisms

Finding 17. The project has improved producers' access to existing funding mechanisms and made good progress towards establishing the new national Landscape Resilience Fund to consolidate, increase the impact and ensure the sustainability of financing.

128. Indeed, FONADEF has been the main financial mechanism for producers during the first half of project implementation. The project has worked with the Ministry of Agriculture's specialists to broaden the fund's lending criteria to include thousands of agroforestry and silvopastoral producers who had previously been excluded for not being "agricultural." The project also provided technical support for and training to technicians and extension services so that they could prepare funding proposals on behalf of the project beneficiaries. Several producers

consulted during the evaluation have received fund credit to implement project modules and expand production. A few have been able to repay the loan and meet follow-up technical criteria to earn a 30 percent financial incentive from the fund (additional to the loan). Despite that progress, however, some farmers reported that they need further assistance to understand and access the fund.

129. The project has also increased farmers' access to financing through state banks. Bank officials have done outreach to farmers through the FFS initiatives and other project trainings. According to one bank official, "IRES helped us to better understand the agroforestry sector and producers' needs, which brought us closer to them. And IRES helped farmers overcome their distrust of banks and understand how credit can help them improve and expand production. Now the bank has more clients and profit, a new type of client in small farmers and new kinds of credit lines." A related shift occurred with the insurance company: "IRES helped us reach out to farmers and explain why they should get insurance each year to cover the whole productive cycle. That changed their culture of not getting insurance, and now many more farmers are insured thanks to the project." In some project areas, however, farmers are still reluctant to borrow money from the bank.

130. The main financial mechanism that IRES has worked to establish is a new Landscape Resilience Fund. This targeted funding mechanism provides resources and incentives for producers to adopt and maintain climate-resilient agroforestry, silvopastoral and forestry systems. The fund combines financing from existing funds for forestry development and soil conservation. According to a governance analyst, "there were several separate funds in the agricultural sector that often duplicated efforts or atomized resources, causing a fragmented approach. By unifying these various funds into a single mechanism, the Landscape Resilience Fund will enable us to scale up, promote an integrated approach to climate resilience and have greater impact across all ecosystems." Other expected benefits of the fund are streamlined management mechanisms, increased access to credit and financial incentives for all types of agroforestry activities, reduced risk, and improved investment opportunities (FAO, 2023a).

131. The Landscape Resilience Fund will be financed through annual allocations from the Government of Cuba's budget, payments for land use and state ecosystems services, and grants from international cooperation. The fund is expected to increase the overall level of financing available for climate-resilient production and serve as a key mechanism to scale up IRES lessons and results. The project will help to identify financial instruments that are needed to capitalize the fund on a continual basis.

Strengthen planning, governance and coordination at the landscape level

Finding 18. The project has strengthened capacity, coordination, planning and governance related to climate resilience at the territorial level. According to several partners, IRES has made a significant contribution to the decentralization process in a relatively short time of project implementation.

Strengthened coordination and cooperation

132. The project brings together unprecedented diversity and a high number of participants at all levels from many types of organizations: multiple departments and divisions of municipal, provincial and central governments; three national producers' associations; national and local women's organizations; individual farmers, cooperatives and state enterprises; banks; universities and research centres; and primary and secondary schools.

133. Several stakeholders reported that IRES built bridges between different types of organizations that had not worked together before.[29] For example, producers receive training from university professors and students apply their learning in practice by working with farmers. Also, FONADEF and banks adjusted their lending criteria to include hundreds of farmers who had been excluded before IRES. Ranchers, farmers and foresters exchange knowledge and practices, and producers' associations collaborate with more government departments in different sectors.

134. According to a provincial official, "IRES is the first project where environmental experts have collaborated with technicians from all the productive sectors – agriculture, livestock, and forestry – on promoting climate resilience. The project showed us the need to integrate. It helped break barriers between our institutions, and between producers working separately in each productive sector." The project has developed the capacity of each institution and producer involved, while also building cooperation and networks between them at all levels. By working together, they are able to contribute more effectively to climate-resilient agroforestry, in particular, and decentralized governance, in general.

Strengthened territorial planning and administration

135. The Cuban State has taken several steps towards decentralization over the last five years. The 2019 constitution highlighted the model of decentralized administration with municipal autonomy. Territorial planning and decentralization were key priorities of the 2019 National Economic and Social Development Plan until 2030 (Ministry of Economy and Planning, 2019). In 2021, the government approved a decree on the Strategic Management of Territorial Development (Council of Ministers, 2021) that identified the Municipal Development Strategy as a guiding plan and created the Local Development Fund to finance local development projects.

136. The project started during this transition to territorial administration. This provided it with an opportunity to benefit from the momentum towards decentralization. At the same time, this process could reinforce local structures and capacities so that policies and projects could be planned for landscape resilience. Promoting decentralization was not identified as an explicit result in the project design, however, the project has made a notable contribution in that area.

137. The project provided technical support to each target territory to create a new municipal development committee, headed by a local development director and the mayor. As part of the municipal assembly, the local development director has direct influence on decision-making and can facilitate project implementation. Through training and technical assistance, the project worked with municipal committees to strengthen their development strategies, and integrate climate resilience and food security into agroforestry planning. The project's activities are part of the municipal government's reforestation and environmental goals and plans. Tools and studies developed by IRES have also contributed to other municipal plans.

138. A municipal official noted: "By improving the way we do agriculture, the project strengthens the municipal government, and our results are going to be better and more sustainable. By increasing the number of trees planted here, IRES helps us meet our municipal targets, the national government's reforestation objectives and our international commitments. The project has changed our way of thinking. We've learned how to integrate all the components of local development, and we can now become a catalyst for change."

[29] The data was collected from semi-structured interviews with local implementing agencies and collaborating institutions, municipal and provincial coordinating committees, and focus groups with beneficiaries. For further information on specific data collection methods see section 2.2.

139. The project has built capacity and developed methodologies and tools for municipal development committees to monitor and provide follow-up support to local and international projects. In many cases, municipal officials had not been involved in project design and monitoring. They now recognize the importance of participating in project monitoring – both for the accountability of government funds and to strengthen decentralized management capacity. The monitoring tools created by IRES include the geospatial data system that stakeholders (farmers, producers' associations, all levels of government) can use to plan and track the real-time progress of productive activities. Some municipalities are interested in developing a similar type of interactive tool to plan and improve other types of services.

140. The project has strengthened the focus and impact of local development projects, which are the main mechanism administered by the municipal government. It works with Ce-GESTA, the centre leading Cuba's decentralization process, to design and deliver training on development projects for all territorial stakeholders. Given the participants' lack of experience with decentralized administration, the training started with basic concepts of local development and project management. Further, the project prepared a toolkit to provide practical guidance for municipal stakeholders to identify and formulate agroforestry projects that incorporate a climate-resilience approach. The IRES advisers continued to provide technical support to municipalities in order to ensure that their proposals would be technically solid and feasible.

141. Additionally, Ce-GESTA helped municipalities to develop criteria to evaluate local development project proposals. According to a governance analyst, "many municipalities have learned about managing local development through IRES. After officials received IRES training, we saw a significant improvement in the quality of project proposals. They changed from working solely on increased production to having a more integrated, sustainable approach with a focus on resilience. Many municipal officials, enterprises and producers now have the capacity to develop their own local development projects linked to landscape resilience."

Economic decentralization

142. In addition to advancing local development planning, IRES contributes to economic decentralization in its seven target municipalities. It strengthens the local economic base by diversifying and increasing agroforestry and silvopastoral production, which increases the municipality's level of food self-sufficiency. The project also builds local capacity to design initiatives that could become microenterprises administered directly by the municipal government. For example, the municipality of Jobabo has a local project to produce, process and market goat milk and cheese. Each municipality administers the seedling nursery established through the project, and IRES plans to convert the Comprehensive Base Business Unit of Technical Services (UEBIST, by its Spanish acronym) in Las Tunas, which is currently controlled at the provincial level, into an autonomous municipal enterprise.

143. A governance analyst stated: "In order to implement their municipal development strategies and achieve their objectives, local governments need economic structures that they own and control directly. IRES has given the enterprises and governments involved in the project a new vision and business model to develop a municipal structure or business. Creating autonomous municipal enterprises will contribute to decentralization and to the project's sustainability."

144. The project's documents identify the need to create municipal microenterprises and establish value chains integrated with the local and national economies. However, several stakeholders said

that the project could do more to "close the productive cycle."[30] According to a provincial stakeholder, "the project provides training and infrastructure to increase milk production and store it, but it ends there. To complete the productive cycle, the project should help producers set up a mini-industry to make cheese that could create jobs for seven or eight women. It should also create value chains in cattle and forestry products." The IRES team indicated that they intend to work more on value chains over the next years, which would contribute to project sustainability, municipal food security and decentralization.

Strengthened governance

145. Through the project, Ce-GESTA is leading a participatory process to develop a Governance Platform for Landscape Resilience at the Municipal Level to complement the municipal development strategy. The platform aims to give all stakeholders (government structures, enterprises, producers) the capacity and mechanism to integrate landscape resilience into local plans, programmes and services. It promotes decentralization by enabling more stakeholders to participate in decision-making, contribute to public policy, identify opportunities, mobilize funding for landscape resilience, evaluate and monitor initiatives, and exchange experiences among municipalities.

146. This type of governance platform is unprecedented in project municipalities. Once the platform is validated by the seven IRES municipalities in 2024 and starts to demonstrate results, the Ministry of Agriculture plans to roll it out to as many other municipalities as possible. There are 129 municipalities (including the IRES ones) spread across every province of Cuba where the local economy is based mainly on agroforestry. Replicating this innovative governance platform would create a national network of municipalities that integrate landscape resilience into local development and enhance the sustainability of the project's model.

3.4 Gender equality, social inclusion and safeguards

Evaluation question 4: Did the project design and implementation sufficiently address gender equality and social inclusion considerations and environmental and social safeguards? To what extent and in what ways is the approach contributing to the expected results?

Gender equality and social inclusion considerations in project design, implementation, monitoring and reporting

Finding 19. The project has a strong gender focus in its design, implementation and governance structures at the national and territorial levels. The project engages children and youth through interest circles and university programmes. Young farmers are among the beneficiaries who receive training and support.

147. Women hold almost half (15) of the 33 positions currently filled at different levels on the Ministry of Agriculture's project management teams, many women are in support roles while men occupy most of the coordinator (top) jobs. FAO and the Ministry of Agriculture did not have gender specialists at the time of the evaluation mission. However, the Ministry of Agriculture did hire a gender and communication specialist in April 2024.

148. The 2020 Gender Assessment identified gender inequalities that the project would work to reduce, while the Gender Action Plan provided indicators and targets to address some of those gaps. Each

[30] The data was collected from semi-structured interviews with municipal and provincial coordinating committees. For further information on specific data collection methods see section 2.2.

municipality prepared its own gender analysis then developed a Gender Action Plan for IRES that aims to better incorporate rural women into agroforestry. The project's national and municipal gender plans are informed by and aligned with national frameworks such as the gender equality programme, *Adelanto Mujer*, and the Ministry of Agriculture's Gender Strategy. The project monitors each gender plan annually at the corresponding level.

149. Each municipal and provincial level has a project gender committee that plays an active part in training and outreach. Some partners such as schools or cooperatives also have their own gender committees. In fact, each municipality has dozens of gender committees that are not related to IRES, plus ones to implement the Ministry of Agriculture's Gender Strategy. For example, the municipality of Colombia has 123 gender committees. There is good coordination between the gender committees and the project management teams. The project has a gender coordinator on its national and provincial management teams, and a project representative participates in each of the seven municipal gender committees. The project has a gender-responsive communications strategy and produces publications and broadcasts that highlight women's participation in agroforestry.

150. The project design includes the participation of youth (under 30 years old) in activities and benefits, however, it does not have age-disaggregated data for many key indicators. It only tracks the number of girls and boys in interest circles, and the number of youth organizations involved in training. The project does not monitor the number of young producers who benefit directly through access to training, credit and other support, or their role and contribution to achieving results. The evaluation, however, did not look specifically at the participation of older people (over 60 years old) in IRES. There were several people in that age bracket working on the farms visited and involved in the project. One analyst noted that the aging working population in agriculture is a problem for the sector.

151. The socioeconomic analyses done during project design did not consider people with disabilities as a separate group in the target municipalities.

Finding 20. Although IRES gathers a lot of gender-disaggregated data, its performance measurement and reporting system do not fully capture short- or long-term gender-related results.

152. The project collects and reports gender-disaggregated data about women's participation in activities and access to some inputs. For the Gender Action Plan, IRES monitors 22 mainly quantitative indicators to track benefits to women. However, it does not fully capture gender results. The main limitations in gender monitoring and reporting include:

i. The project logic model does not include gender targets or results and only has one gender-disaggregated indicator: the number of female or male beneficiaries. The logic model has no gender-focused outputs or targets. Also, the logic model is monitored and reported on separately from the Gender Action Plan on a parallel track without intersection.

ii. Based on current indicators and reporting, it is unclear as to how many women benefit in what way from the project. For example, current data do not capture how many women are trained in different areas (productive modules, climate resilience, gender, resilience), if they are the same beneficiaries for each type of training, the training duration (Do they attend a one-hour session or a week-long FFS course?), or how they apply that training.

iii. Some of the activities tracked in the gender plan are a high-level GCF outcome, while others are immediate outcomes or outputs. Mixing different levels gives a fragmented view and makes it hard to roll up data to tell the project's overall gender story.

iv. Quantitative data is inconsistent within the Gender Action Plan and among project documents (for example, the number of beneficiaries). This makes it harder to determine what is being achieved in gender.

v. Some project indicators and targets for women to play an equal role as men as equipment operators or clearing marabou may not be realistic in the current context. For example, women are expected to constitute 46 percent of equipment operators, but none of the women trained (20 percent) took that job. It would be better to track women's economic participation in areas that interest them more, such as fruit production and processing, or develop a strategy to increase women's access to higher-paying, non-traditional jobs in agroforestry.

vi. The project collects a lot of monitoring data related to gender but does not analyse it well (for example, what the project is doing to address gaps identified in the Gender Analysis) or ensure that it is measuring the most strategic data to plan potential long-term project impact.

vii. Indicators do not capture what the project is achieving or could achieve in terms of women's access to and control of overall productive resources – not just equipment.

viii. Indicators do not reflect potential changes in women's economic empowerment and leadership, for example, how many women have become full paid members or leaders of cooperatives with project support or directly accessed bank loans to increase production. At the project outset, women constituted less than 20 percent of cooperative members in the target municipalities (GCF, 2020a, Appendix 2.5 Socioeconomic Characterization of Implementation Zones; characterizations of each target municipality). The project could track any increase in that percentage or total number as either a direct or indirect result of project support.

ix. There are few qualitative indicators or data to measure steps towards transformative change, for example: how women's attitudes are changing; how they apply new techniques; and how they are empowered to take on leadership roles.[31] Women's life stories and other data already collected by the project could be used to reflect qualitative changes or results achieved.

Project contribution to gender equality results

Finding 21. While the project has not reached its mid-term gender targets, it has contributed to increased technical capacity and the participation of women producers, greater awareness about gender and climate resilience, and improved stakeholder coordination and participation.

153. The project reports on indicators in the Gender Action Plan, such as the number of men and women benefiting from climate-resilient livelihood options, training and new jobs. It also tracks the number of women with improved water systems, access to productive resources and working conditions. The project has not reached its mid-term targets on most production-related indicators in the Gender Action Plan, which is largely due to delays in implementation (see Appendix 7). However, the project has made progress towards the three main gender results reported in the Annual Performance Reports.

[31] The perception survey has qualitative indicators but did not report gender-disaggregated data. A few stakeholders noted the need to improve the methodology for the perceptions survey to better capture relevant gender-disaggregated qualitative data.

Increased technical capacity and participation of women in agroforestry

154. A total of 1 603 women (41.5 percent of 3 860 total) were trained on climate-resilient production with a gender focus, while 303 (33 percent of 918 total) received training on the project's six productive modules. Overall, women comprise about 40 percent of project beneficiaries who have received different types of project training. The project integrates gender considerations into technical training on production modules, local development projects and governance. It also offers specialized training on gender issues related to climate resilience and the environmental and social safeguards. Most training is delivered at the FFS initiatives to make it more accessible for women by reducing travel and time away from their families.

155. The Evaluation Team met several female beneficiaries who reported learning new agroforestry techniques that they have used to diversify, improve or increase production. Some of them were among the 68 women leaders identified by the project for targeted training and support.

Box 2. Women producers moving forward

For the past 20 years, Arelis Calvo and her husband have raised cattle on a 39 ha farm in the municipality of Colombia. She works with him, tending cattle and other livestock, clearing marabou with a machete, harvesting crops and hauling drinking water from the river that is 5 km away. Through IRES, Arelis learned how to improve cattle fodder and milk production, and plans to train as a tractor operator: "Now my husband comes to me for support because I am better prepared and know more about raising cattle. He doesn't see me the same way he did before we both got involved in the project."

Arelis was empowered by learning about her rights and role in production through the project. This helped her move into a management position in their cooperative. As one of the project's eight female leaders in that municipality, Arelis reaches out to other women: "I motivate them to join the project and move forward. Now many more women want to get involved in IRES. They take part in project training but can't join unless other farmers drop out." After her story was broadcast on national television, Arelis has been inspiring other female farmers and girls across the country to move forward.

Source: Evaluation interview with Arelis Calvo and her life story broadcast on television.

156. The seven municipal seedling nurseries being established or technically strengthened through the project currently employ 21 women and 14 men. When all the new technical nurseries are installed and operational, women are expected to hold most of the 84 total jobs created. The new nurseries will improve working conditions for women and men. Working conditions for women in 12 (out of 19) locations (nurseries, project coordination units, UEBIST) have also been improved through the installation of gender-differentiated sanitary facilities.

157. Through the project, women beneficiaries have not moved into higher-paid, traditionally male jobs ("heavy labour") such as clearing marabou with a machete or operating machinery like tractors or chainsaws. None of the 20 women (out of 102 total) trained as equipment operators took those well-paid jobs. However, other women, like Arelis in the municipality of Colombia, expressed interest in operating the new tractors that will arrive. Many of the new jobs created through the project for women in agroforestry are considered "lighter." This includes watching cattle, working in seedling nurseries or seed banks, making marabou charcoal or picking seasonal fruit. In fact, there are areas where women have always tended to work. Planned local development projects to create new food processing mini-industries are expected to generate more jobs for women as an indirect result of IRES.

158. The Evaluation Team found anecdotal evidence of women holding leadership positions in agroforestry, such as in a tobacco enterprise, the AZCUBA Sugar Group, the seed bank, and cooperatives and technical institutes. However, it is not clear as to how many women moved into

these roles as a result of the project (attributable), and that data are not monitored or aggregated across the seven municipalities.

Increased stakeholder awareness, participation and coordination

159. The project's provincial and municipal gender committees play an active role in project implementation and directly contribute to achieving results such as strengthening gender capacity, awareness, participation and coordination at various levels. Committee members represent organizations, including the government, cooperatives, producers' associations (ACTAF, ANAP, ACPA), state enterprises, universities and the Cuban Women's Federation through the National Programme for the Advancement of Women. The project has improved coordination and built dynamic gender alliances among these diverse organizations.

160. Gender committee members and other project stakeholders receive gender training from IRES. One committee leader noted: "We had received gender training from other projects before. The IRES training is different because it includes a paradigm shift to climate-resilient landscape management and adaptation, strengthening the gender dimensions in these new action areas in rural communities." According to a few provincial stakeholders, IRES has a stronger gender focus than other international projects that they have worked on.

161. According to a gender coordinator: "Farmers in the project have learned the importance of the work women do in caring for the family and animals and working in the fields. Those men have changed their mentality and now value women more." A few male farmers interviewed for the evaluation said that they now help with cooking and childcare. While the project has helped some men think differently, most stakeholders acknowledged that it will take a long time to change the machismo culture in the countryside and stressed the importance of working with young farmers who may be more open to changing gender relations.

162. Women beneficiaries, gender committee members and teachers in the interest circles play an active role in social media and community engagement in the project. Several communications products such as frequent media reports (print, radio, television, social media) and brochures highlight women's contribution to climate-resilient agroforestry through IRES.

163. Developing municipal gender analyses and action plans, and training to integrate gender considerations into local development planning, have increased municipal capacity and awareness. According to a local official, "IRES has strengthened our gender focus in the municipality. Through IRES we've learned about the differential impacts of climate change on women and men, women's important role in production and what we can do to promote women's empowerment in agrifood production. These were new topics we hadn't learned about before."

Knowledge and awareness of environmental and social safeguards among farmers, producer organizations, agricultural technicians and local stakeholders

Finding 22. The project has mobilized hundreds of students who have raised awareness about climate resilience in their schools and communities. The project has enhanced university curricula and given students and professors valuable field experience. Many young producers have improved and diversified production, and shared new techniques with other farmers.

164. Two hundred forty-two girls and 161 boys have actively engaged in 14 interest circles in the seven project municipalities. Informal exchanges with the children during the evaluation mission demonstrated that they are very committed and knowledgeable about the project's productive modules and climate change resilience. They have participated in activities and training to raise

awareness in their schools, families and communities. Their involvement with IRES has led many youth to become interested in studying agroforestry-related careers at the university. The project's contribution to the interest circles is leading to unexpected positive results.

165. According to several university professors, IRES has strengthened curricula and staff knowledge about climate-resilient agroforestry models and gender. A professor noted how "the project has given students a unique opportunity for hands-on experience to apply their learning in practice by implementing productive modules on a farm." Dozens of students have been trained as community promoters for IRES, and a few are researching graduate theses about the project.

166. Some of the producers benefiting directly from the project are youth. Among them, IRES has identified and supported a group of young leaders, who introduce new practices and do outreach with other farmers. One young producer explained: "My grandfather and father worked this farm, now me, and I want my kids to farm here too. A lot of young people love farming and IRES makes it easier for young farmers to stay. It gives us better prospects by helping us increase and diversify production, improve family income and create jobs here."

Finding 23. Project stakeholders, including farmers, have been trained and sensitized on the risks and mitigation measures proposed in the Environmental and Social Safeguards Framework. This has generated a high level of ownership and commitment at national, provincial and local levels, and enabled compliance with environmental and social safeguards.

167. The project maintains a moderate risk category, as defined in the funding proposal. The Environmental and Social Safeguards Framework proposes a series of mitigation measures for the identified risks,[32] all related to the implementation of the modules. It also addresses potential risks associated with the occupational safety of workers and operators working with heavy machinery and toxic chemicals such as pesticides and herbicides. The Environmental and Social Management Framework states that all project stakeholders should comply with national policies and regulations about occupational safety requirements for agricultural machinery operators (Republic of Cuba, 2014).

168. As part of the project's Environmental and Social Safeguards Framework, the project team led by the FAO safeguard specialist prepared and presented an Environmental and Social Safeguards Management Plan at the project's inception workshop in March 2021. In 2023, additional documents and templates were prepared to support the development of safeguard management plans at an individual farm level. These include an Invasive Alien Species Management Plan with an Early Warning Protocol for invasive exotic species, a Pesticide Management Plan, and UEBIST Environmental and Social Management Plans. These documents are under review for internal approval at FAO headquarters.

169. In relation to the use of exotic species,[33] specifically as part of the SILSOM module, the preparation of the Invasive Alien Species Management Plan and the Early Warning Protocol were accompanied by trainings to develop project capacities for monitoring, early detection, control and eradication.

[32] The negative impacts detailed in the Environmental and Social Management Framework are the possible biological or physical degradation of the soil due to: use of machinery; deterioration of air quality; reduction of water availability and deterioration of its quality; soil contamination; negative impacts on biodiversity due to the use of invasive alien species; use of pesticides that could cause soil contamination problems; water and impacts on biodiversity and human health; and phytosanitary risk associated with the supply of seeds and vegetative material.

[33] The SILSOM module includes the planting of protein banks, for which the horseradish tree (*Moringa oleifera*) is used. This tree is an exotic species that is easy to reproduce and grows in poor, drought-resistant, arid and semi-arid soils. It is a fast-growing tree that can reach up to 4 m per year. It is a fodder tree with a high percentage of crude protein.

The Environmental and Social Management Plan for the rehabilitation and construction of reservoirs for irrigation and livestock is under preparation.

170. The project has the support of various state entities to monitor compliance with environmental and social safeguards in the territories. For monitoring at the farm level, producers have a safeguards booklet where they make notes of compliance with the safeguards included in their farm plans (for example, marabou clearing, the presence and monitoring of invasive species, and the use of pesticides) and receive feedback from extension agents and project technicians. In many cases, these activities were led by women. In addition, a series of educational materials have been developed, with a practical approach, to support compliance with environmental safeguards.

171. The potential use of pesticides, herbicides, and other chemical products is limited in the project regions due to high costs and lack of access. Producers noted that the project provides them with alternatives that produce very good results at low cost. For example, through the FFS initiatives, they are learning about integrated pest and disease management and how to prepare organic products, especially fertilizers.

3.5 Paradigm shift

Evaluation question 5: What are the prospects for the project to contribute to the proposed paradigm shift?

Finding 24. While many components have only been operational for two years, the project has put in place many elements that contribute to sustainability, innovation and replicability. Those elements should be consolidated into a sustainability plan.

172. The funding proposal outlined the project's exit strategy and pillars of sustainability (GCF, 2020a, pp. 32–33). Table 9 combines key elements of that strategy, the GCF Evaluation Guidelines for assessing the paradigm shift and factors identified during the evaluation mission that contribute to the sustainability of such a desired paradigm shift.

Table 9. Enabling factors and conditions for sustainability and contribution towards the paradigm shift

Element	Examples, steps taken
Government legislation, commitment, ownership ***Institutional***	**National** • The project promotes and aligns with top priorities for the Government of Cuba: food security; climate change; and decentralization. • IRES is a high-profile flagship project for the Government of Cuba, presented at international conferences as part of Cuba's international commitment to climate change objectives. • Several ministries at central and territorial levels are highly engaged and committed to IRES objectives. • IRES has contributed to strengthening the legislative framework and policies on climate resilience that will continue after project closure. • The project promoted the incorporation of climate resilience in the National Programme for the Advancement of Women and Cuba's Food Sovereignty and Nutrition Education Plan. **Territorial** • The project institutionalized climate resilience as a key objective in municipal development strategies, local development plans, and planning and monitoring systems.
Multistakeholder, participatory ***Governance***	• High degree of engagement, ownership and knowledge by diverse stakeholders (government, producers, enterprises, universities, women/youth) from many organizations and sectors at three levels (municipal, provincial, territorial) • Direct involvement of territorial governments, producers' associations, universities in project monitoring and accountability

Element	Examples, steps taken
	• Good coordination and direct communication among similar stakeholders (such as farmers setting up their own WhatsApp groups) and between different types of stakeholders through joint workshops and social media
Technical capacity and tools	**National level** • Strengthened technical capacity and systems of national government partners (Ministry of Agriculture, Ministry of Science, Technology and Environment, Ministry of Higher Education) in areas such as landscape resilience and adaptation **Territorial level** • The technical capacity and tools developed through IRES will remain with territorial governments, agricultural extension workers, enterprises, producers' associations and farmers after project closure. • The project has built local capacity and provided tools to plan, administer and monitor international and national projects for landscape resilience. • A municipal official said that "IRES has changed our mentality and put climate resilience on the municipal agenda. The project has given us capacity and tools so that we can do it on our own now." **Producer level** • Developed technical capacity of individual producers, associations and enterprises • Several interviewed farmers said that they are passing on their new knowledge and techniques to their children and grandchildren for the next generations to continue.
Productive capacity, services, infrastructure	**Municipal level** • Increased productive capacity (trees planted, fields cleared and planted, machinery purchased, infrastructure built) will remain in the municipalities after project closure. • According to a provincial Ministry of Science, Technology and Environment representative, "the project will start to show economic benefits from increased production after three years, but it'll really 'bear fruit' when longer-term plants like some trees begin to produce." A municipal official noted that "the genetic improvements we're making in livestock and in crops will take years to show results but will remain after the project ends." • Services and infrastructure strengthened (e.g. UEBIST) will continue to provide equipment and technical assistance to farmers after the project ends. The Government of Cuba is committed to covering 100 percent of operation and maintenance costs after project closure (it currently covers 87 percent). Farmers and producers' organizations will maintain farm-level equipment and tools, with training and technical assistance from the Ministry of Agriculture. • The creation of autonomous municipal enterprises will increase potential for sustainable local economic development. One municipal official noted that "IRES is developing a new business model based on municipal microenterprises, with a plan to establish value chains integrated with the local and national economies." **Producer level** • Improved capacity and productivity, and increased production through the use of new agroforestry practices will remain on farms and in enterprises after project closure. A state enterprise official noted: "If we give training and inputs to improve cattle raising practices, forage crops, protein banks and water reservoirs that yield higher production, then that promotes sustainability at the farm level."
Financial	• The project is establishing the Landscape Resilience Fund that will consolidate several existing funds to provide increased, long-term stable financing for landscape resilience. Further, IRES will help to identify financial instruments needed to capitalize the fund on a continuous basis. The fund is seen as a key mechanism to scale up IRES lessons and results. • Increased and new credit from banks and financial incentives (FONADEF) available for producers to adopt sustainable agroforestry practices

Element	Examples, steps taken
	• Ce-GESTA is exploring the potential use of results-based payments to generate revenue for farmers
Innovation	• Distinctive Cuban model where scientific and research centres are fully integrated with government implementing partners to provide technical expertise in project design and implementation • New scientific knowledge in areas such as natural forest regeneration is being generated through partnership between research institutes, universities, productive units and farmers. • Development of new climate-resilient seed varieties that are specific to the project's target areas • Use of entomopathogens to combat pests and diseases in a friendly way • New research (e.g. hydrological, methane gas in cattle raising) done by Cuban experts provides a strong evidence base to improve project activities and inform local planning • Being evidence-based is a strong factor in promoting sustainability. • The use of a real-time geospatial data system developed by the project is innovative in its regions. After using this type of interactive system for the first time, municipal officials now plan to create similar tools to improve and monitor other services.
Replicability, scalability	**National/territorial level** • The Government of Cuba planned IRES as a three-phase programme. It funded Phase 1 technical studies to develop productive modules, got GCF funding for Phase 2 and is planning diversified funding for Phase 3 to replicate IRES practices countrywide. The Government of Cuba was planning to sustain climate-resilient practices before it began implementing IRES. • Some territorial governments are extending IRES practices to municipalities that are not included in the project. Some municipal governments are expanding activities to reach farmers who are not project participants: "We aim to extend project results and practices to the whole municipality [Colombia] before IRES ends." • The Governance Platform for Landscape Resilience was designed for replication from seven municipalities in IRES to 129 across the country with similar agroforestry production characteristics. The platform was designed so that municipalities can continue it with the financial resources that they mobilize themselves. It provides a mechanism to replicate vertical (municipality to central government) and horizontal (among municipalities) coordination established through IRES after project closure and build a national network of climate-resilient municipalities. • The Landscape Resilience Fund will increase the overall level of funding to scale up or replicate IRES practices and results at a national level. • The capacity and experience gained by national producers' organizations (ACPA, ACTAF, ANAP), state enterprises (AZCUBA) and ministries (Ministry of Agriculture, Ministry of Science, Technology and Environment) will contribute to the countrywide replication of project technologies, methods and practices. **Producer level** • IRES agroforestry practices have spread to many farmers who participate in training or learn from neighbours involved in the project (demonstration effect). Previously, they had not been direct beneficiaries. • Producers' ability to pass learning on to other farmers or cooperatives was an initial criterion to select the initial project participants. • Children in circles of interest spread their learning about landscape resilience with other students, their families and their communities.

Source: Authors' own elaboration.

Finding 25. There are signs of a paradigm shift occurring at the institutional level in organizations, including the Ministry of Agriculture and territorial governments, as well as at the individual producer level.

Institutional level

Box 3. Institutional change at the Ministry of Agriculture

At the institutional level, the Ministry of Agriculture has both driven and experienced a shift from "the prevailing paradigm of production maximization to one that promotes climate-resilient production systems, supported by stronger institutions and a purpose-built financial mechanism" (GCF, 2020a, p. 39). This institutional change has occurred at the central and territorial levels. Structurally at the national level, the Ministry of Agriculture created its first dedicated office to manage the flagship project that has raised the profile of climate resilience and the ministry within the Government of Cuba. It is in the process of consolidating several separate funding mechanisms into a single Landscape Resilience Fund.
Links to FAO and the GCF through IRES have given the Ministry of Agriculture better access to international technical expertise and methodologies in areas such as carbon capture and GHG mitigation. According to a Ministry of Agriculture provincial official, "before IRES, we had not even heard of the term 'resilience' – but now it has become part of our everyday language, thinking and planning." The project has strengthened ties between different technical departments (livestock, agriculture, forestry, soils) from the Ministry of Agriculture and with the Ministry of Science, Technology and Environment's environmental experts. It has also contributed to greater awareness in the Ministry of Agriculture about mainstreaming gender into project design and implementation, and reinforced commitment to its Gender Strategy.

Source: Authors' own elaboration.

173. As discussed in Subsection 3.3, the project has contributed significantly to a paradigm shift in territorial planning and practices related to climate resilience. Other institutional shifts have occurred in financial mechanisms (Forestry Fund, banks) that have changed lending criteria and clientele to reach smaller farmers, as well as local universities that have updated their curriculum or added new fields of study related to climate-resilient production.

Individual level

174. At the individual level, several stakeholders reported how the project has changed the mentality of farmers involved. For example, a producer representative said that "farmers now know what resilience means and how they need to adapt and mitigate against climate change. They've learned to use organic fertilizer, plant healthier crops, improve soil and plant shade trees for cattle. That new mentality is the main way to ensure project sustainability because they'll pass it on to their kids and grandkids to continue." Box 4 highlights one farmer who exemplifies that paradigm shift, as well as the sustainability elements and results achieved by the project to date.

Box 4. Leading farmers and youth to change

Through IRES, producer Mariano Quintero Almeida has changed and become an agent of change. The 49-year-old producer has a farm that he calls *El Despertar* (The Awakening) in the municipality of Corralillo. The municipal government and agriculture delegation granted him access to 66 additional hectares of land for IRES activities. Mariano cleared the marabou-infested land by hand for the first year. However, he can now work five times faster using project machinery and has recovered 28 ha. He is implementing five project modules that will promote sustainable agriculture by integrating fruit and forest trees, diverse crops and drought-tolerant varieties of livestock.

Mariano Quintero Almeida

Mariano explained that "by increasing food production, we're helping the most vulnerable families and employing more women in fieldwork and home gardens. The project forage mill has allowed us to improve animal food, reduce waste and produce flour for animal and human consumption. This project will lead to significant change in the community by preparing farmers and their families to mitigate and adapt to climate change."

Mariano came to IRES with some knowledge of climate resilience from previous participation in two international projects in other areas of Cuba. He got municipal government funding for a project on "resilience" before IRES had propagated the term but wanted to take part in the project to increase his technical knowledge and production. "Through IRES, we've learned a lot about different production techniques, diversification, soil improvement, green fertilizer and rainwater collection." Mariano worked with IRES technical advisers to adopt and adapt agroforestry practices to his farm conditions, bringing his new ideas and approaches to the project.

Working with the project's interest circles and other groups, Mariano gives hands-on lessons in climate-resilient production to local youth from the town. Mariano has received training and technical support from the project to enhance his skills as a farmer leader, teaching others at the field school on his farm. Neighbouring producers visit his farm to see what he is doing, and Mariano encourages those not involved in IRES to take part in technical training. Mariano also shares what he has learned from the project through farmer-to-farmer exchanges, pamphlets he produces and distributes, and social media. He is very active on WhatsApp, posting articles and videos for his 200 followers, even though he has to climb to the top of a hill to get a cell signal.

In addition to helping other farmers adopt new techniques, Mariano has opened the door for them to access bank loans to increase production. After being the first to get a bank credit facilitated through IRES, Mariano has become a promoter to assist other farmers in understanding and navigating the financial system and commercialization. He is also one of the first farmers in the area to get the 30 percent financial incentive (CUP 60 000) from the Forestry Fund after repaying that loan and meeting technical criteria following three years of successful implementation.

The project's training and support helped Mariano prepare and submit seven local development projects for municipal government funding. One is to set up an ecotourism business that will employ local residents providing food, lodging and tours. He also plans to establish a honey processing facility that will mainly employ women. He plans to export high-quality certified honey to generate the United States dollars that he needs to import agricultural inputs. According to Mariano, "IRES has opened the door for new possibilities and attracts other projects to our area because they see what we're doing here. IRES has taught us to dream and make our dreams come true."

Source: Authors' own elaboration.

Finding 26. While there are signs of change at different levels, IRES could take a more intentional and strategic approach to fostering this paradigm shift. For example, IRES has the potential to catalyse gender-transformative change related to climate resilience by strengthening its work to promote women's leadership and empowerment, increase their access to and control of productive resources, and facilitate access to care services.

175. During its first few years of implementation, the project has increased women's technical capacity and participation in climate-resilient production. Over the next few years, the project can aim more towards achieving longer-term results in women's empowerment. Several project stakeholders and documents have recognized the importance of moving towards gender-transformative change and highlighted entry points for IRES to achieve that (see Table 10and Appendix 7).

Table 10. Gender-transformative approach

Goal	Activities to date or planned	Further actions needed
Promote women's leadership, empowerment	• Identified and supported 68 women leaders • Planned leadership workshops	• Target larger group of women • Enable women to take leadership roles in production units and the municipal government • Support mentoring from local female and male leaders, especially from cooperatives and enterprises
Facilitate economic empowerment of women and youth	• Created jobs for women and youth on farms and in nurseries • Helped to develop local projects to process meat and milk products • Planned to establish value chains (Annual Performance Reports)	• Provide training and mechanisms to facilitate the creation of women-led microenterprises in areas such as food processing, marketing and medicinal plants • Facilitate the creation of agroforestry value chains with a focus on women and youth • Support an increased membership of women as paid cooperative members • Increase women's access to and control of productive resources (technical, financial, land)
Increase gender equality at household level	• Recognized need for women to take part in decision-making and men to share domestic work (Annual Performance Reports)	• Provide positive masculinities training for male project beneficiaries • Recognize positive examples of men sharing household work (identify male champions of change) • Engage boys and young men as allies for gender equality
Improve women's access to care services	• Planned to find local actors to provide care services	• Identify potential partners and financing to provide care services so women can play greater economic and leadership roles in production and the community
Improve measurement of gender results	• Updated Gender Action Plan but not indicators or expected results	• Increase gender expertise in the project team • Incorporate indicators (including qualitative) to measure longer-term outcomes related to women's empowerment • Work with existing resources (Ministry of Agriculture, FAO) to map out gender-transformative change processes

Source: Authors' own elaboration.

4. Conclusions and recommendations

4.1 Conclusions

Conclusion 1. The project fills a unique niche for Cuba to move towards restored productive landscapes that promote GHG emissions reductions, climate-resilient production systems and ecosystems services enhancement. The project offers tangible opportunities for farmers to adopt climate-resilient practices and technologies that strengthen their adaptive capacity and generate environmental, social and economic co-benefits.

Conclusion 2. The project is on track to meet the expected results, provided that the project time frame is extended to compensate for implementation delays. Strong country ownership and adaptive management practices helped the project navigate multiple challenges during its first few years. While implementation of the project's climate-resilient modules is below the levels expected at the project's mid-term, significant advances were made.

Conclusion 3. The project generates a lot of valuable data. Information is actively being used by a wide range of stakeholders to monitor project progress and inform operational decision-making. The project could better capture and analyse data to inform strategic decision-making.

Conclusion 4. There is a high degree of complementarity and coherence among IRES, other climate finance projects and local development projects. Purposeful planning and coordination efforts at municipal and provincial levels are helping IRES to expand its reach, achieve its results and reinforce concepts of climate resilience.

Conclusion 5. The project is the first in Cuba to invest directly in GHG emissions reductions activities from improved land use and forest activities. This creates opportunities at the country level to participate in results-based payments initiatives, and to contribute to the achievement of the NDC targets. The project can play a strategic role in strengthening and reinforcing capacities to address the technical and policy dimensions of climate change mitigation. There are opportunities to strengthen strategic collaborations across projects to measure and report on GHG emissions reductions and removals.

Conclusion 6. The project has contributed to the development of national laws and policies related to climate resilience and food security, while building capacity to implement that framework. Key national partners have institutionalized new approaches, systems and structures introduced by the project. Municipal governments have more capacity and tools to plan and monitor climate-resilient local development. The financial mechanisms established or improved through the project will increase producers' access to credit for sustainable agroforestry. While significant progress has been made, the project should continue technical assistance to strengthen local governance, economic diversification and decentralization.

Conclusion 7. The project integrated gender and youth considerations in its design, implementation, governance and communications. While it has not met its mid-term gender targets, it has contributed to increased technical capacity and the participation of women and young producers, greater awareness about gender and climate resilience, and improved stakeholder coordination and participation. Further work is needed to improve the monitoring and reporting of gender results, with a refocus so that it can take on a gender-transformative approach to climate-resilient agroforestry.

Conclusion 8. The project has put in place many elements that will contribute to sustainability, such as building institutional commitment and ownership, increasing technical and productive capacities, establishing financial mechanisms and enabling innovation. Project practices, knowledge and tools are

already being replicated by producers and municipal governments who are not directly involved in IRES. There are signs of a paradigm shift occurring in national and territorial institutions, as well as at the individual producer level. The project needs to systematize this process and formulate a sustainability plan.

4.2 Recommendations

FAO Representation in Cuba and the FAO Office of Climate Change, Biodiversity and Environment

Recommendation 1. Request the GCF to extend the project time frame for two additional years, from July 2027 to July 2029, to allow for the full implementation of the planned field activities and ensure the achievement of the expected project results.

i. The recommended extension length is based on stakeholder consultations and the Evaluation Team's analysis of the impact of external events on the original schedule, the current pace of implementation and the current level of progress towards targets. During the formulation of the extension and the re-phasing of project activities, FAO Representation in Cuba and the FAO Office of Climate Change, Biodiversity and Environment should assess the exact time needed to ensure full implementation.

ii. The additional time is particularly needed to ensure the full implementation of the project's agroforestry, forestry and silvopastoral modules to meet the final target of 35 734 ha of land under climate-resilient practices and the corresponding GHG emissions reductions targets. This is also to provide the needed accompaniment to producers.

iii. The additional time is sufficient for the execution of the total GCF financial resources and the Government of Cuba's co-financing resources.

FAO Representation in Cuba and the Ministry of Agriculture

Recommendation 2. Strengthen the project's technical capacities in areas of climate change mitigation. Specific areas include monitoring and reporting on GHG emissions reductions and removals associated with the implementation of the project's agroforestry, silvopastoral and forestry modules, with a view to strengthening national capacities and advancing international climate commitments. Considerations for addressing this recommendation are as follows.

i. Contract a GHG emissions mitigation specialist to guide capacity-building processes at the central and provincial levels.

ii. Review the implementation areas (hectares) of the silvopastoral module figures in the EX-ACT mitigation potential that were calculated and reported in December 2023, as well as the implementation period (years) used for the calculations of all modules. Revise as necessary.

iii. Expand training on GHG mitigation issues to project team members at the provincial and municipal levels and in FFS initiatives.

iv. Strengthen collaboration efforts with other projects implemented by FAO Cuba, other organizations, and the Government of Cuba to:

- support the development of a measuring, reporting and verification system to comply with international climate commitments;
- analyse the possibility of using field methodologies linked to international standards in order to quantify the removal of emissions from module implementation (Measurements taken at field level can be used to validate baseline estimations and report progress on

implementation results. Specifically, MARREG and MARFOM module data can be accounted for and recorded as part of a measuring, reporting and verification system, and included as part of Cuba's NDC); and

- analyse the need to integrate GHG emissions from marabou charcoal production into the next GHG emissions reductions and removals progress calculations and the project carbon balance.

Recommendation 3. Strengthen capacity building and mechanisms to support women's leadership and economic empowerment participation to contribute to gender-transformative change. Considerations for addressing this recommendation include:

i. Strengthen gender expertise at FAO and the Ministry of Agriculture to make the project's gender-related focus more strategic at the national and territorial levels.

ii. Increase capacity building and technical assistance to foster empowerment and leadership by women and youth in different types of productive and municipal organizations.

iii. Support mechanisms (for example, targeted local projects, training, access to care services) that facilitate the equitable participation of women and youth in municipal enterprises, mini-industries and value chains – especially those related to agroforestry and silvopastoral production.

iv. Identify and report gender indicators and targets at a higher-level to better capture the project's impact related to women's economic empowerment and gender-transformative change.

v. Revisit the initial gender analysis to assess what longer-term results the project should work towards to address the gaps and inequalities identified in women's economic empowerment, using FAO guidance documents as a reference (FAO, IFAD, WFP and CGIAR GENDER Impact Platform, 2023; FAO, IFAD and WFP, 2020).

Recommendation 4. Strengthen the project's monitoring tools and processes to better systematize and validate data, and to better capture the project's results. Considerations for addressing this recommendation include:

i. Ensure dedicated monitoring specialists, supported by adequate resources, in both the FAO and the Ministry of Agriculture national project units to better systematize and validate data at the project level and provide support for provincial and municipal coordinators.

ii. Establish a beneficiary registry, consistent with project definitions and guidelines. Include indicators and guidance to determine who, how, and how many women and youth are benefiting directly and indirectly from the project.

iii. Refine the project's adaptation and resilience monitoring methodology and tools to better capture outcomes in the areas of capacity development, gender, governance, and the realization of environmental, economic and social co-benefits.

Recommendation 5. Reinforce the sustainability potential of the project results, technical capacities, models, mechanisms and good practices. Considerations for addressing this recommendation include:

i. Develop a sustainability plan that integrates the steps that the project has taken, as well as implementation plans to maximize its impact and contribute to a longer-term paradigm shift.

ii. Continue support, build on existing alliances and strengthen collaboration with other initiatives to facilitate the creation of autonomous municipal enterprises and value chains in agroforestry.

iii. Reinforce capacity building and technical assistance in areas such as planning, decision-making, governance and local economic development to strengthen the decentralization process.

iv. Finalize and institutionalize key mechanisms aimed at sustainability, including the Landscape Resilience Fund and the Governance Platform for Landscape Resilience.

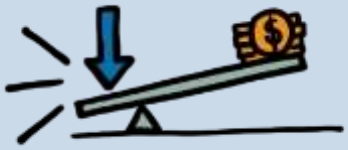
v. Continue the incorporation of young farmers in leadership roles as a way to strengthen generational knowledge transfer and innovation.

vi. Identify and systematize the project's good practices and lessons to share knowledge with other territories and stakeholders.

5. Key learnings

176. The key learnings are based on the evaluation findings and good practices identified in the IRES mid-term evaluation. They aim to inform horizontal learning across other climate finance projects in Cuba and other GCF projects implemented by FAO.

Project design and length 	Addressing socioeconomic needs, such as food production and short- and long-term income generation streams, in the design of climate-resilient practices helps to motivate farmers to change behaviours. It also improves local ownership and the sustainability of results. Further, it takes time to introduce new and complex concepts like climate resilience and climate change mitigation. The project's seven-year time frame, and the concentration of financial and technical resources in a limited number of the most vulnerable communities, allows for the learning and socialization of new concepts and the sustained technical accompaniment of producers.
Adaptive management and learning 	Adaptive management can help to optimize resource allocation and advance project implementation in challenging and dynamic contexts. For example, when faced with delays in receiving much needed machinery and fuel, IRES monitored progress weekly to identify productive areas where land preparation could be advanced manually and sought local solutions to access scarce fuel for larger and more infested productive areas. Adaptive learning, through the testing of new and innovative practices during project implementation, can inform ongoing improvements. For example, IRES found that rotating crops like cassava with tillage quarterly can prevent renewed marabou sprouting in heavily infested areas. This good practice, learned during project implementation, is now being used before planting trees as part of the project's forestry modules.
Gender and social inclusion 	Gender committees are an important mechanism to foster coordination among key actors, provide training, raise awareness and implement municipal gender action plans. Providing training through FFS initiatives or in community spaces as close as possible to where people live facilitates greater participation of women and youth. Reducing travel and time required and providing childcare during training increase the rate and duration of women's participation. Gender-transformative change takes years to achieve at the individual, household, community and institutional levels, particularly in rural areas.
Knowledge dissemination 	Knowledge dissemination through both formal and informal communication channels can foster the replication and scaling up of project activities. Including leadership qualities as part of the selection criteria for initial beneficiaries, and fostering farmer-to-farmer learnings, can help to generate interest beyond the project's direct and indirect beneficiaries. Interest circles have also proven to be an effective mechanism for directly engaging children and teachers to disseminate project messages at the family and community levels.

Governance 	Multistakeholder governance models and strong vertical and horizontal coordination fosters project ownership, advances implementation and improves the prospects for sustainability. The use of multisectoral monitoring teams, comprised of municipal and provincial government authorities, project personnel and technical specialists, can elevate the project's profile, demonstrate political will, provide transparency and reinforce local ownership. Actively creating synergies across climate finance initiatives and other international and local projects can help to create a more comprehensive and systemic approach to climate resilience at a national, provincial and municipal level.
Funding mechanisms 	Several factors contribute to the success of a national landscape resilience fund such as: establishing a mechanism to attract long-term financing from various national and international public/private sources; adapting financial instruments and activities to meet the needs and priorities of each region; integrating natural resources management into landscape resilient development; ensuring clear communication of fund priorities and process; engaging all stakeholders in fund management; building strategic alliances between prioritized sectors; providing continuous capacity building, especially for smallholder farmers; giving financial incentives to farmers and production units to adopt climate-resilient practices and technologies; and ensuring that landscape resilient funding helps to generate income and improve the livelihoods of farmers and communities. Incorporating these types of factors in a funding mechanism helps to create a long-term pathway for sustainability, replication and the scaling up of climate-resilient practices.

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Appendix 1. Logical framework

Fund-level impacts

Expected results	Indicator	Means of verification	Baseline	Target		Assumptions
				Mid-term	Final	
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	*A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)*	Baseline, mid-term, final monitoring and evaluation reports Surveys	0 farmers	25 549	Total: 51 098 Male: 27 593 Female: 23 505	Farmers and agricultural enterprises will be motivated to participate. Both women and men will act to participate when invited.
A4.0 Improved resilience of ecosystems and ecosystem services	*A4.1 Coverage/scale of ecosystems protected and stregnthened in response to climate variability and change*	Monitoring and evaluation reports Progress reports Farm records Qualitative assessment through questionnaires and surveys	Hectares: 0	Hectares: 17 867	Hectares: 35 734	The implementation of agroforestry/forestry modules will be sufficiently widespread so that there will be a measurable impact on ecosystem function/services.
M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks	*M4.1 Tonnes of carbon dioxide equivalent (t CO2 eq) reduced or avoided (including increased removals) - forest and land use*	Monitoring and evaluation reports Progress reports and monitoring of carbon stock by comparison to a carbon C-stock baseline (see Verified Carbon Standard project descriptions) using EX-ACT methodology	tCO_2e: 0	tCO_2e: 560 091	tCO_2e: 1 120 183	Stakeholders will readily adopt and implement agroforestry/forestry practices and systems and be motivated to sustain them over the next seven years, at a minimum, and over 20, constituting the life of the project.

Fund-level outcomes

Expected outcomes	Indicator	Means of verification	Baseline	Target		Assumptions
				Mid-term	Final	
A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development	*A5.1 Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation*	Regulatory and normative framework approved by the competent authority and published in official media	0	1 specific proposal for policy reforms discussed and drafted	1 specific proposal for policy reforms approved	No crisis emerges that impedes expeditious analyses and discussions of institutional and regulatory systems. The regulatory and normative framework is expected to be finalized and approved during the second half of project implementation.
		Farmers perception survey on improved incentives for climate resilience	0	50% of the beneficiaries have a good perception about the improved incentives for climate resilience	100% of the beneficiaries have a good understanding about the improved incentives for climate resilience	
A7.0 Strengthened adaptive capacity and reduced exposure to climate risks	*A7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools instruments, strategies and activities to respond to climate change and variability*	Records of stakeholder participation in project activities (training, tasks, etc.) Farm surveys and questionnaires Institutional surveys	0	15 329 (30%) of direct beneficiaries, of which 7 131 (46%) are female with enhanced knowledge on climate change resilient production landscape solutions	51 713 (100%) of direct beneficiaries, of which 46% are female) with enhanced knowledge on climate change resilient production landscape solutions	Farmers' and producers' organizations continue to be interested in learning new skills and apply new knowledge to production.
M9.0 Improved management of land or forest areas contributing to emissions reductions	*M9.1 Hectares of land or forests under improved and effective management that contributes to CO2 emission reductions*	Satellite monitoring Field inspections of agroforestry, silvopastoral and reforested areas	0	17 867 ha	35 734 ha	Plantations are unaffected by extreme weather events, e.g. drought, hurricane.

Project performance indicators

Expected results	Indicator	Means of verification	Baseline	Target		Assumptions
				Mid-term	Final	
Outcome 1. Increased climate change resilient production landscapes through investment in innovative agroforestry and silvopastoral systems, reforestation with close-to-nature planted forests and assisted natural forest regeneration	*Hectares of land implementing agroforestry, silvopastoral and forestry modules*	Ministry of Agriculture field inspections and reports Farmer surveys and questionnaires	0 ha	17 867 ha	35 734 ha	Farmers will be motivated to adopt and sustain innovative agroforestry/forestry systems at a sufficient scale Correct implementation of sustainable and innovative agroforestry and silvopastoral systems will lead to improved overall environmental and ecosystem service provision
	% of farmers' perception about the advantage of including new methods to improve climate resilience		0% of positive response by trained farmers	90% of positive response by trained farmers	100% of positive response by trained farmers	
	Population of target municipalities indicating that they perceive improved ecosystem services		0%	10%	35%	
	% of resilience of production as perceived by farmers	Survey	Low	Medium	High	
Outcome 2. Strengthened institutional and farmer capacities to improve ecosystem services through agroforestry and forestry systems and enhance the climate resilience of production landscapes	*Number of institutional staff trained*	Ministry of Agriculture field reports and follow-up surveys of farmer leaders participating in FFS initiatives Training records, questionnaires	0 institutional staff	300 institutional staff trained	585 institutional staff trained	Farmers will be motivated to attend and participate fully in the FFS initiatives
	Number of farmers trained		0 farmers	9 228 farmers trained (4 614 will be women)	15 549 farmers trained (7 774 will be women)	
	Percentage of trained farmers who indicate that they have acquired new knowledge on climate-resilient production landscapes		0% of farmers	90% of the trained farmers identify new knowledge on climate change and resilience	100% of the trained farmers identify themselves with new knowledge on climate change and resilience	

Expected results	Indicator	Means of verification	Baseline	Target		Assumptions
				Mid-term	Final	
	Number of institutional staff trained who indicate that they use or apply information received		0	100 institutional staff	468 institutional staff	
	% of farmers trained who indicate that they use at least one of the practices learned in the FFS initiatives on their own farms	Follow-up surveys of extension services and lead farmers participating in field schools	Low	30% of farmers trained	80% of farmers trained	
	Farmers' capacity on agroforestry and forestry systems that include climate change adaptation		Low	Medium	High	
Outcome 3. Effective governance to support climate resilience-enhancing production systems and ecosystem services	*Proposals for policies, plans and financial incentives to motivate and sustain climate change adaptation by farmers formally approved*	Evidence of integrating climate change adaptation principles into planning and programming Existence of the Landscape Resilience Fund	Currently no relevant financial incentives exist	Analyses and discussions ongoing	Proposals for policy, planning reforms Landscape Resilience Fund established and operational	Interinstitutional collaboration can be effectively achieved to establish multisectoral resiliency mechanisms that provide financial incentives to farmers
	% of perception of government authorities that new policies, plans and financial incentives are including climate change adaptation elements	Perception survey	0% response	60% surveyed individuals have a positive perception	100% of surveyed individuals have a positive perception	Non-governmental and civil society organizations participate in training, relevant meetings and planning discussions at the municipal, local, regional and national levels
	Representatives of key organizations in seven target municipalities that indicate that they have improved the capacity to participate effectively and collaboratively in planning and decision-making processes	Training reports, surveys of organizations, non-governmental organizations and civil society organizations in target municipalities	Currently limited capacity for training	10	20	
	Women and youth organizations targeted and involved in trainings	Workshop, training reports	0	2	5	Minimum of ten organizations to be trained

Appendix 2. Evaluation matrix

Questions/subquestions/criteria	Indicators	Method and data source
Relevance and quality of design *(GCF evaluation criteria: relevance, country ownership)*		
1. To what extent is the project design still relevant and responsive to the climate needs and priorities of key stakeholders and project beneficiaries?		
1.1 To what extent do the activities and outputs address the current adaptation and resilience needs of the beneficiary populations?	• Perceptions of key stakeholders and beneficiaries (differentiated by gender and age) on the extent to which the activities respond to their current climate resilience needs • Extent to which activities and the expected results address and provide solutions to critical causes of degradation of productive landscapes	• Review and analysis of project documents and relevant literature/studies • Semi-structured interviews and focus group discussions with agricultural producers and project partners • Theory of change validation workshop: barriers and assumptions • Results of the perception survey and focus group discussions (project monitoring)
1.2 To what extent does the project remain aligned with the GCF and FAO strategic framework and country priorities at the national and local levels?	• Extent to which activities and expected results align with national development and climate change action strategies • Level of alignment of activities, indicators and expected results with the current strategic framework of the GCF and FAO	• Country and sectoral context analysis (policies, laws and institutional plans) • Review and analysis of the GCF and FAO project documents and strategic frameworks • Semi-structured interviews with project partners
1.3 To what extent are the project indicators appropriate and the targets feasible (as included in the project logframe) considering the current country context, available resources and project time frame?	• Perceptions of the main partners on the feasibility of achieving the planned targets • Analysis of the feasibility of completing the proposed activities, considering the progress achieved, available resources and expected deadlines	• Review and analysis of project documents (implementation plan, annual workplans) • Theory of change validation workshop: barriers and assumptions • Semi-structured interviews with farmers and project partners
Level and quality of implementation (efficiency, effectiveness, country ownership, coherence)		
2. To what extent and how has the project delivered activities and outputs as expected by the project's mid-term?		
2.1 What is the level, quality and timeliness of activities delivered in relation to the planned outputs and mid-term targets to: • restore farmlands and rangelands to increase climate resilience (Activities 1.1 and 1.2);	• Level and quality of activities implemented, and products developed, compared to the mid-term targets • Extent to which the activities and products are gender sensitive and respond to the differentiated needs of women, youth and other vulnerable groups (link to Question 4)	• Results of the perception survey and focus group discussions • Review and analysis of project documents, in particular, annual reports • Semi-structured interviews with institutions and project management units

Questions/subquestions/criteria	Indicators	Method and data source
• increase institutional capacities to support farmers' and producers' organizations and train agricultural producers that revitalize and manage landscape resources (Activities 2.1 and 2.2); • develop, discuss, and analyse options for policy reforms and establish a Landscape Resilience Fund (Activities 3.1 and 3.2); and • strengthen planning, governance and coordination at the landscape level (Activity 3.3).	• Internal and external factors that have positively or negatively influenced project implementation • Identification of good practices or innovations	• Semi-structured interviews and focus group discussions with members of the provincial and municipal coordinating committees • Direct observations in field visits/production sites
2.2 To what extent and how are the project's information management, monitoring and reporting systems informing decision-making and contributing to adaptive management? To what extent is the project contributing to knowledge generation and diffusion?	• Type and quality of information on project progress and results generated at the municipal, provincial and national levels (link to 3.2) • Uses of the information and linkage of the information generated with the information management systems of the counterparts/institutions involved • Examples of knowledge dissemination and learning good practices	• Review of data and monitoring systems • Semi-structured interviews with institutions and project management units • Product review, reporting and communications strategy
2.3 To what extent is the project governance structure supporting efficient and effective project implementation? To what extent is there sufficient capacity at the provincial and municipal levels to participate effectively in project governance and decision-making?	• Number and type of meetings held compared to plan • Perceptions of the effectiveness of governance and coordination mechanisms (horizontal and vertical) to support efficient and effective project implementation • Perception of representatives of key organizations in the provinces and municipalities on their ability to participate effectively and collaboratively in planning and decision-making processes	• Review and analysis of project documents, in particular, governance manual and meeting notes and decision records • Semi-structured interviews and focus group discussions with members of the provincial and municipal coordinating committees • Focus group discussions with the provincial and municipal coordination committees
2.4 To what extent has the committed co-financing been delivered, and how has this affected project implementation? How does the co-financing structure (type and sources of co-financing) contribute to the expected project results?	• % of committed co-financing by type and source compared to the mid-term target • Level of capacity of partner institutions for the implementation of activities related to co-financing • Extent to which the level of compliance with co-financing (by type and source) has contributed to or constrained the achievement of results	• Review and analysis of project documents and co-financing data (by type and source) • Semi-structured interviews with partner institutions and management units (provincial/municipal)
2.5 To what extent is there project coherence and complementarity with other climate finance initiatives? To	• Number and type of initiatives at the provincial and municipal level linked to the project	• Review and analysis of project documents

Questions/subquestions/criteria	Indicators	Method and data source
what extent are local development projects at the provincial and municipal levels maximizing synergies and adding value to the project results?	• Extent to which the project has coordinated and complemented other ongoing initiatives at the local level (by stakeholders, donors, governments) in climate change adaptation or mitigation efforts • Evidence and perceptions of synergies and added value of initiatives at the provincial and municipal levels with respect to project results	• Semi-structured interviews with partner institutions and provincial and municipal coordinating committees • Mapping of actors, initiatives and type of synergy, including local development projects linked to the project, in a sample of municipalities
Progress towards the achievement of results (effectiveness, impact, unexpected results)		
3. To what extent and how are the activities and outputs achieved contributing to the expected results? ***Fund-level outcome and impact areas***		
3.1 To what extent and how has progress been made towards reaching the mid-term targets in the areas of: • improved management of land or forest areas contributing to emissions reductions (Expected result M9.0); • strengthened adaptive capacity and reduced exposure to climate risks (Expected result A7.0); • strengthened institutional and regulatory systems for climate-sensitive planning and development (Expected result A5.0); • increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions (Result area A1.0); • improved resilience of ecosystem resilience and ecosystem services (Result area A4.0); and • reduced emissions from forest and land use (Result area M4.0).	• Evidence that results have been achieved in accordance with mid-term expectations (logical framework indicators) • Perceptions of beneficiary populations (women, youth), partners and other stakeholders on the extent to which project activities are contributing to the improved resilience of productive landscapes and ecosystem services, and capacity building • Internal and external factors that have positively or negatively influenced the achievement of the expected results • Identification of best practices and innovations GCF impact area core indicators: - Ecosystem coverage/scale of ecosystems and ecosystem services protected and enhanced (ha); and - GHG emissions reduced, avoided or eliminated/sequestered (tCO_2e).	• Results of the perception survey and focus group discussions (adaptation) • Review and analysis of project documents, studies performed and data reported • Semi-structured interviews with local institutions and stakeholders • Focus group discussions with beneficiaries • Direct observations in field visits/production sites
3.2 Were GHG emissions reduction estimates calculated using a sound methodology? Have robust GHG emissions reduction measurements and reporting been conducted during implementation?	• Methodology used to calculate GHG emissions reductions from proposed activities • Monitoring protocols and measurement, reporting and verification mechanism • Level of capacity of counterpart institutions in mitigation monitoring	• Review and analysis of project documents, studies performed and data reported • Semi-structured interviews with local institutions and stakeholders

Questions/subquestions/criteria	Indicators	Method and data source
	GCF impact area core indicator: GHG emissions reduced, avoided or eliminated/sequestered (tCO_2e)	
3.3 Have the direct and indirect beneficiaries of adaptation been clearly defined and identified? Has the number of beneficiaries of adaptation been achieved with respect to the mid-term targets?	• Methodology used and how it was applied to select the prioritized municipalities and to calculate and identify direct and indirect beneficiaries • Number of beneficiaries reached as expected at mid-term (broken down by gender, age, type of entity and type of participation in the project) • Internal and external factors that have influenced the number and type of beneficiaries achieved GCF impact area core indicator: direct and indirect beneficiaries reached	• Review and analysis of project documents, studies performed and data reported • Semi-structured interviews with local institutions and stakeholders
3.4 Are there any unanticipated or unexpected positive or negative effects as a result of the project interventions? What factors have contributed to the unanticipated effects? *Note: integrated throughout*	• Identification of unanticipated results, positive or negative • Internal and external factors influencing unplanned results • Level of monitoring and reporting of unexpected results	• Review and analysis of project documents • Semi-structured interviews with local institutions and stakeholders • Focus group discussions with beneficiaries • Direct observations in field visits and production sites
Gender equality, social inclusion and safeguards (gender equality and effectiveness)		
4. Has the project adequately addressed gender equality and social inclusion considerations? To what extent have environmental and social safeguards been effectively implemented and monitored?		
4.1 To what extent and how have gender equality and social inclusion considerations, particularly the differentiated impacts of climate change, been included in project design, implementation, monitoring and reporting**?**	• Evidence and perceptions that gender equality considerations have been taken into account in project design, monitoring and reporting • Level of progress in the implementation of the Gender Action Plan • Level or examples of Gender Action Plan integration into overall project management	• Review and analysis of project documents, especially the Gender Action Plan and gender diagnostics • Semi-structured interviews with institutions at the municipal and national level • Focus group discussions with beneficiaries
4.2 To what extent has the project contributed to gender equality results or is it likely to contribute to the expected results?	• Evidence and perceptions that results contribute to the advancement of gender equality and the empowerment of women, girls and young people • Examples of good practices at the local or national level that promote gender equality	• Municipal reports on Gender Action Plan implementation • Monitoring and annual reports • Semi-structured interviews with institutions • Focus group discussions with beneficiaries

Questions/subquestions/criteria	Indicators	Method and data source
	• % of women in project management and decision-making leadership positions	• Direct observations during field visits
4.3 What is the level of knowledge and awareness of environmental and social safeguards among farmers, producer organizations, agricultural technicians and local stakeholders? Have the safeguards been effectively implemented and monitored?	• Number and type of awareness-raising activities on environmental and social safeguards • Evidence and perceptions that environmental and social safeguards considerations have been taken into account in the design and that mitigation measures have been effectively implemented and monitored • Identification of best practices or innovations	• Project monitoring and annual reports • Reports on safeguards implementation and monitoring • Semi-structured interviews with local institutions and stakeholders
Paradigm shift (sustainability, innovation, replication and scale)		
5. What are the prospects for the project to contribute to the proposed paradigm shift?		
5.1 To what extent is the project taking steps to ensure the sustainability of results?	• Analysis of project activities and emerging results against the key elements of sustainability: technical capacity; ownership; productive capacity; financial sustainability; and environmental sustainability (at all levels) • Evidence of risk mitigation strategies or project sustainability/exit plan	• Annual project reports and sustainability plan • Semi-structured interviews with local and national institutions and stakeholders • Direct observations during field visits
5.2 To what extent is the project creating conditions for the replication and scalability of results? Is there evidence that the project has influenced other actors or interventions to replicate or scale up the promoted climate resilience and mitigation measures and results?	• Degree of interest and commitment of current project beneficiaries, or producers/livestock producers not participating in the project, to apply the project's modules to additional or new areas (beyond those targeted in the project) • Examples of the development and implementation of projects/interventions (including local development projects) that have been influenced by IRES to incorporate climate adaptation and mitigation considerations • Evidence of the allocation of new or increased resources from new or existing sources (including local development projects) that contribute to climate adaptation and mitigation results • Identification of innovative practices or measures • Identification of internal and external factors that may facilitate or limit the replication and scalability of results	• Annual project reports • Semi-structured interviews with local and national institutions and stakeholders • Focus group discussions with beneficiaries • Direct observations during field visits • Municipal local development plans, budgets and projects

Questions/subquestions/criteria	Indicators	Method and data source
5.3 To what extent and in what ways are the project activities and emerging results contributing to transformational change? What are the barriers and opportunities to enhance the potential for the desired paradigm shift?	• Evidence of emerging results demonstrating progress towards transformational change, including women's empowerment • Identification of barriers and opportunities to move towards the desired paradigm shift of climate-resilient production landscapes	• Annual project reports • Semi-structured interviews with local and national institutions and stakeholders • Focus group discussions with beneficiaries • Direct observations during field visits

Appendix 3. Data collection mission programme

Saturday 9 March: arrival of the Evaluation Team in Havana

Sunday 10 March

7:30 - 16:00	Transfer to the provinces of Villa Clara and Camagüey (Evaluators' lodging)

Monday 11 March

Evaluation Subteam 1	**Evaluation Subteam 2**
Las Tunas	**Villa Clara**
07.30–09.30 Transfer to the city of Las Tunas 09.30–12.00 Provincial Project Management Unit Office; interviews with members of the Las Tunas Provincial Coordinating Committee (provincial government stakeholders, UPGP IRES, ANAP, University of Las Tunas, Agricultural Delegation, Las Tunas Agroforestry Company, Ministry of Science, Technology and Environment) 12.00–14.00 Lunch; transfer to the municipality of Jobabo 14.00–15.30 Polytechnic Institute of Agriculture Montecristi Manifesto (CEDPLA, FRUAGR, field classroom) tour of areas and exchange with professors; experience in training agricultural technicians and link with projects 15.30–17.30 Interviews with municipal government stakeholders, Local Development Office Representative, the IRES Municipal Management Unit and international project coordinators (Coastal Resilience to Climate Change in Cuba through Ecosystem-based Adaptation, Support for Cooperative Management in the Agricultural Sector), ACTAF, ACPA, Municipal University Centre, Cuban Women's Federation 17.30 Return to hotel	08.30–10.00 Meeting with Directors of the Villa Clara Provincial Government; interviews with officials and members of the Provincial Coordinating Committee (ACTAF, ACPA, ANAP, Cuban Women's Federation, Central University "Marta Abreu" of Las Villas) 10.00–12.30 Provincial Delegation of Agriculture; interviews with managers and soil and irrigation specialists; Villa Clara Agroforestry Company, interviews with Company Director, forestry specialists; State Forestry Service 12.30–13.30 Lunch 13.00–15.00 Exchange and interviews with specialists from the Agroforestry Station of the Agroforestry Research Institute; explanation of FONADEF projects 15.00–17.30 Exchange on spatial data infrastructure; functioning and role for monitoring and follow-up of the implementation of the project modules 17.30 Return to hotel

Tuesday 12 March

Las Tunas	Villa Clara
07.30–09.30 Transfer to the municipality of Amancio, Las Tunas 09.30–11.00 Municipal Project Management Unit; interviews with government actors and other entities on governance (State Forest Service, Soils, Ministry of Science, Technology and Environment); circle of interest; interviews with municipal government stakeholders, agriculture delegate 11.00–12.00 Credit and Services Cooperative Lino Álvarez, interviews and tour; producer Rainier Hechemendía Padrón (FRUAGR), young producer 29 years old. 12.00–14.30 Credit and Services Cooperative Sabino Pupo, interviews and tour; producer Amelio Castellano Carmona and producer Marilyn Rodríguez Alonso (SILSOM, field classroom); Gender Committee (focus group); local development and community work experience; municipality of Colombia 15.30–17.30 Municipal Project Management Unit Office, UEBIST Colombia, Anacaona initial meeting with representatives of the Municipal Coordination Committee of the project; interviews with municipal government stakeholders, IRES Municipal Management Unit, Anacaona Community Representative, ANAP, specialists and UEBIST operators (Agroforestry Company Tunas) 17.00 Return to hotel	07.30–09.00 Transfer to the municipality of Quemado de Güines 09.00–09.30 Municipal Delegation of Agriculture; initial meeting with representatives of the Municipal Coordination Committee of the Project 09.30–11.30 Credit and Services Cooperative José Antonio Somarriba; producer Roberto Torres Triana (SILSOM); interviews and tour 11.30–14.00 Urban farm: Nery Enrique Villavicencio Domínguez (FRUAGR, SILSOM); interviews and tour; family, gender; lunch 14.00–15.30 13.30–15.00 AZCUBA; Basic Cooperative Production Unit Antonio Escaño: (FRUAGR, SILSOM); exchange with agricultural workers 15.30–16.30Farming Production Cooperative Julio Casales: (CEDPLA, FRUAGR); experiences of young producers; local development project; interviews and tour 16.30–17.30 Municipal Project Management Unit meeting and government authorities; circle of interest 17.30 Return to hotel

Wednesday 13 March

Las Tunas	Villa Clara
07.30–09.00 Transfer to the municipality of Colombia 09.00–11.30 Polo Productivo AZCUBA; Basic Cooperative Production Unit Raúl González Hernández; interviews with the Secretary from the Communist Party of Cuba on governance in agriculture; interview with producers; FRUAGR module, CEDPLA 11.00–13.30 Melquiades López and Odalis Guerra Farm; Farming Base Business Unit; local development projects; interview and tours of the areas; FRUAGR and SILSOM modules; lunch 13.30–17.30 Participatory session and interviews on governance, barriers, assumptions and their importance at the local level for the achievement of results and sustainability; project representatives; municipal assembly representatives; Vice Superintendent productive sphere; local development specialists, agriculture, Ministry of Science, Technology and Environment, AZCUBA, Municipal University Centre, ANAP, and others	07.30–09.00 Transfer to the municipality of Santo Domingo 09.00–11.00 Municipal Project Management Unit Office; interviews with municipal government representatives, Municipal University Centre State Forest Service, Ministry of Science, Technology and Environment, Municipal Project Management Unit; tour of Forestry Comprehensive Base Business Unit Forest Model; interviews with workers, specialists and tour of current and future nursery areas 11.30–14.30 Credit and Services Cooperative Ovidio Rivero; producer Luis Alberto Albas Cardoso (FRUAGR, El Alba Field School); interviews and tour; lunch

17.30 Return to hotel	14.30–16.00 Visit to the National Institute of Tropical Viands (Research Institute of Tropical Root and Tuber Crops) (CEDPLA; FRUAGR, field school); interviews and tour; training of producers 16.00–17.30 AZCUBA; Basic Cooperative Production Unit 8 October (FRUAGR); interviews and tour 17.30 Return to hotel

Thursday 14 March

Villa Clara	Villa Clara
07.30–15.30 Transfer to the municipality of Corralillo, province of Villa Clara 15.30–16.30 San Pedro community, Corralillo; actors and inhabitants of the community; People Power delegate; interviews and exchange with teachers and students; experience of productive courtyards, grandmothers' circle 16.30–17.30 Meeting with municipal government, bank, insurance company 17:30 Transfer to Hotel Matanzas	07.30–09.00 Transfer to Municipality Corralillo 09.00–12.00 Forestry Comprehensive Base Business Unit area, area 1 to 4: (Gavilanes field school); tour of agroforestry and forestry modules (FRUAGR, MARREG, CEDPLA and MARFOM); forestry nursery 12.00–14.00 Credit and Services Cooperative Pedro Lantigua; interviews and tour; producer Yudel Almeida Sánchez (FRUAGR, SILSOM); lunch 14.00–15.30 Tour of areas of the *El Despertar* Estate; exchange at the MARREG site; visit to housing, farm school and areas of FRUAGR and silvopastoral land cleared of marabou; producer Mariano Quintero. 15.30–17.30 San Pedro community, Corralillo; actors and inhabitants of the community; People Power delegate; interviews and exchange with teachers and students; experience of productive courtyards, grandmothers' circle 17.30 Transfer to Hotel Matanzas

Friday 15 March

Transfer to the municipality of Los Arabos	Transfer to Corralillo
09.30–10.30 Interviews with the Municipal Delegate of Agriculture, the Ministry of Science, Technology and Environment Representative, the Directors of productive units, extensionists 10.30–12.00Farming Production Cooperative José Martí; producer Onel Suárez Pérez (SILLEC); interviews and tour; 12.00–13.00 Lunch 13.00–14.30 Farming Production Cooperative Gabriel Valiente: producer Duniesky Márquez Acosta (FRUAGR); interviews and tour	09.00–12.00 Participatory session and interviews on governance, barriers, assumptions and their importance at the local level for the achievement of results and sustainability; project representatives, municipal assembly representatives, Deputy Superintendent, local development specialists, agriculture, Ministry of Science, Technology and Environment, AZCUBA, Municipal University Centre, ANAP, Municipal Directorate of Economy, bank, insurance company, UPGP 12.00–13.00 Lunch

14.30–16.00 Farming C Base Business Unit Los Arabos: producers Yasmany Ordoñez (CEDPLA) and Alexis Viera (SILLEC); field classroom; interviews and tour 16.00–17.00 San Pedro de Mayabón community; interviews and exchange with community stakeholders, circle of Interest	13.00–16.00 Focus group discussion Municipal Gender Committee, ACTAF, ANAP, Municipal University Centre, selected producers
Return to Matanzas, accommodation in Varadero	

Saturday, March 16

10.00–17.00 Transfer to Havana; individual work of evaluators in the elaboration of preliminary findings

Sunday 17 March

09.00–17.00 Evaluation Team internal workshop on preliminary findings

Monday 18 March

09.00–12.00
Exchange and interviews with: Ministry of Agriculture; Ministry of Agriculture Soil Specialist; Agroforestry Group Director; Water Group Member;
Forestry Directorate Specialist Ministry of Agriculture; Gender Specialist Ministry of Agriculture; Representatives, Cuban Women's Federation; ACTAF; ANAP
12.00–14.00 Lunch
14.00–17.00
Exchange and interviews with national stakeholders and FAO projects, Coastal Resilience to Climate Change in Cuba through Ecosystem-based Adaptation, Ce-GESTA, University of Pinar del Río, interrelated FAO Projects (Introduction of new agricultural methods for the conservation and sustainable use of biodiversity, including plant and animal genetic resources, in productive landscapes in selected areas of Cuba, Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, GCF)

Tuesday 19 March

10.00–12.00 Presentation FAO preliminary findings
Return to their countries

Farmer site visits: sample distribution

	Module						Producer		Land area (ha)	Implementation level	Success level
	MARREG	MARFOM	CEDPLA	FRUAGR	SILLEC	SILSOM	Gender	Youth	Small (<10) Medium (10–20) Large (>20)	Low Medium High	Low Medium High
Quemado de Güines (Villa Clara)											
Urban garden											
Nery Enrique Villavicencio Domínguez				2.0		20.1	Female		S	M	H
Roberto Torres Triana						20.6	Male		L	M	M
Basic Cooperative Production Unit Antonio Escaño				7.0		10.5	Male, Female		M	M	M
Agricultural Production Cooperative Julio Casales			6.0	6.0			Male		M	M	H
Santo Domingo (Villa Clara)											
Luis Alberto Albas Cardoso				1.0			Male		S	L	L
Research Institute of Tropical Root and Tuber Crops			5.0	16.0			Male, Female		M	M	H
AZCUBA Basic Cooperative Production Unit 8 October				X			Male, Female				
Corralillo (Villa Clara)											
Mariano Quintero Almeida	10.0		10.0	10.0	10.0	10.0	Male		L	M	H
Forestry Comprehensive Base Business Unit area 1 to 4	650.0	4000.0	50.0	30.0			Male, Female		L	L	H
Yudel Almeida Sánchez				2.0		13.4	Female		S	M	M
Colombia (Las Tunas)											
AZCUBA											
Productive Pole				59.1			Male, Female		L	M	H

Appendix 3. Data collection mission programme

	Module						Producer		Land area (ha)	Implementation level	Success level
	MARREG	MARFOM	CEDPLA	FRUAGR	SILLEC	SILSOM	Gender	Youth	Small (<10) Medium (10–20) Large (>20)	Low Medium High	Low Medium High
Raúl González Hernández Basic Cooperative Production Unit											
Roberto Carmenates Morales				26.9			Male		L	M	H
Estate El 18						100.0	Male, Female	X	L	H	H
Melquiades P. Nápoles Barba			22.3				Male		L	H	H
Odalis Guerra Rosabal					17.5		Female		M	H	H
Jobabo (Las Tunas)											
Polytechnic Institute of Agriculture Montecristi Manifesto			6.0	4.1	6.5	6.5		X	L	M	M
Amancio (Las Tunas)											
Lino Álvarez Credit and Services Cooperative											
Ranier Hechemendía Padrón				6.1			Male	X	S	H	H
Marilyn Rodríguez Alonzo						13.4	Female		M	M	M
Los Arabos (Matanzas)											
Gabriel Valiente Agricultural Production Cooperative											
Duniesky Márquez Acosta				6.70			Male		S	H	H
José Martí Agricultural Production Cooperative											
Onel Suárez Pérez					26.84		Male		L	M	M
Yasmany Ordoñez			2.0				Female	X	S	H	H
Alexis Viera					26.84		Male		L	M	H

Appendix 4. People interviewed

Last name	First name	Institution/function
FAO staff		
Acosta	José	FAO Cuba/Communication Consultant
Fernández Chamero	Jorge	FAO Cuba/Assistant Representative of Programmes
Fernández Esperón	Jorge	FAO Cuba/Programme Assistant, Operations, Monitoring and Evaluation
González	Mayra	FAO Cuba/Safeguards Specialist
Martínez	Juan Mario	FAO Cuba/OPC Coordinator
Labrador	Oscar	FAO Cuba/Forestry Expert
Morales	Kenya	FAO Cuba/Acquisitions
Opio	Carolyn	FAO Subregional Office for Mesoamerica/Livestock Development Officer (Lead Technical Officer)
Resende	Marcelo	FAO Cuba Representative
Rodríguez	Kairusam	FAO Regional Office for Latin America and the Caribbean/Financing Unit Specialist
Sangoluisa	Pamela	FAO Subregional Office for Mesoamerica/Senior Consultant for GCF
SentiDarias	Martha	FAO Cuba/Operations Coordinator
Ubaldelli	Giulia	FAO Office of Climate Change, Biodiversity and Environment/GCF Project Implementation Specialist
National partners (Ministry of Agriculture, Ministry of Foreign Trade and Foreign Investment, Ministry of Science, Technology and Environment, ACTAF, ACPA, research institutions)		
Aldana Vitos	Carlos	GAMMA, S.A.
Blanco	Janet	Capacity-building Initiative for Transparency project, agriculture, forestry and other land use
Capote	Raisa	Ce-GESTA
Carrera Doral	Wencesalo	Ministry of Science, Technology and Environment/Coordinator of the Technical Unit of the GCF Designated National Authority
Casañas Lugo	Noel	AZCUBA/Coordinator of National Programs
Chaterlán	Yoima	IAgric
Del Pino Toledo	Ina	Ministry of Agriculture/Provincial Soil
Díaz	Georgina	State Forestry Service
Dsan González	Pedro	IAgric
Hechevarría Bermúdez	Maury	Ministry of Agriculture/Deputy Minister
Herrera	Juan A	DSEF
López Fonseca	Yodani	Ministry of Agriculture/Soil Specialist

Appendix 4. People interviewed

Last name	First name	Institution/function
Santana Núñez	José Fidel	Ministry of Science, Technology and Environment/Deputy Minister GCF Designated National Authority
Torres Páez	Carlos César	Ce-GESTA/Director
Project Management Units (FAO, national, provincial and municipal levels)		
National		
Arregui Valdés	Wilfredo	IRES-National Project Management Unit/National Coordinator
Ávila García	Armando	IRES-National Project Management Unit/Monitoring and Safeguards Specialist
Díaz	Yudaisy	IRES-National Project Management Unit/Finance Specialist
Díaz Maza	Carlos	IRES-National Project Management Unit/Technical Coordinator
Las Tunas		
Gras Sianca	Yoandry	IRES-UPGP/Provincial Coordinator
Jobabo		
Castellanos Avilés	Fausto	IRES-Municipal Project Management Unit/Economist
Ramos Rodríguez	Pedro	IRES-Municipal Project Management Unit/Coordinator
Ugarte Pavón	Felix Braulio	IRES-Municipal Project Management Unit/Production Technician
Colombia		
Estrada Villar	Edilberto	IRES-Municipal Project Management Unit/Coordinator
Ramos Cañizares	Yanet	IRES-Municipal Project Management Unit/Economist
Ramos González	Juan Carlos	IRES-Municipal Project Management Unit/Production Technician
Amancio		
Camejo Fonseca	Andres	IRES-Municipal Project Management Unit/Technician
Milán Villafranca	Aliuska	IRES-Municipal Project Management Unit/Coordinator
Villa Clara		
Ávila Bermúdez	Yaimy	IRES-UPGP/General Activities Manager
Carbonells Santana	Nadia	IRES-UPGP/Specialist
Lorenzo Rodríguez	Grecio Miguel	IRES-UPGP/Provincial Coordinator
Santo Domingo		
Ros Fonseca	Ivónne Milagros	IRES-Municipal Project Management Unit/Material Assurance Technician
Vidal Barrios	Noel	IRES-Municipal Project Management Unit/Municipal Coordinator
Corralillo		
Chavez Rodríguez	Yosvany	IRES-Municipal Project Management Unit/Material Assurance Technician
Martínez Rodríguez	Conrado	IRES-Municipal Project Management Unit/Municipal Coordinator

Last name	First name	Institution/function
Ortega Espinosa	María	IRES-Municipal Project Management Unit/General Activities Manager
Quemado de Güines		
Fernández Gutiérrez	Efraín Liz	IRES-Municipal Project Management Unit/Material Assurance Technician
Ramos Martínez	Yuniesky	IRES-Municipal Project Management Unit/Municipal Coordinator
Matanzas/Los Arabos		
Fuentes Gutierrez	Ivelsis	IRES-Municipal Project Management Unit/Specialist
López Suarez	Asunción	IRES-Municipal Project Management Unit/Municipal Coordinator
Trujillo Frias	Yenitza	IRES-Municipal Project Management Unit/Material Assurance Technician
Coordination Committees (provincial and municipal levels) and Gender Committees		
Las Tunas (provincial level)		
Camejo Martínez	Sandi	University/Professor
Castro	Samuel	Agroforestry Company/UEBIST
Castro	Yudelkis	Radio/Journalist
Chavez	Susana	Ministry of Science, Technology and Environment/Specialist
Cruz	Dailis	Cuban Women's Federation/Secretary
De la Cruz	Leandris	Banco de Crédito y Comercio/Director
Del Toro Varona	Rosa	Municipal Planning Office/Director, Amancio
Escalante	Delvis	Ministry of Agriculture/Specialist
Espinosa Pérez	Laidel	Ministry of Agriculture/Soil Expert
Esquivel	Salvador	Education/Director
Hernández	Maidelis	Cuban Women's Federation/Secretary
Mora Acosta	Alexey	Municipal University Centre/Subdirector
Pérez	Darley	ANAP/Agrifood
Pérez	Henly	Ministry of Foreign Trade and Foreign Investment/Provincial Specialist
Reyes	Ernesto	Government/Deputy Mayor
Rodríguez	Yaidel	Radio/Journalist
Roman	Adelaida	Ministry of Education/Gender
Romero	Osmani	Ministry of Agriculture/Head of Development
Santos Castro	Gabriel	Agroforestry Company/UEBIST Head
Solano	Blanca	OLDD/Head of Department
Sosa	Madelaine	Polytechnic Institute of Agriculture/Director
Tamayo Álvarez	Heliam	Ministry of Science, Technology and Environment/Specialist

Appendix 4. People interviewed

Last name	First name	Institution/function
Torres	Rainel	Farming/Specialist
Colombia		
Álvares	Yoaris	CAM/Local Development Specialist
De la Cruz	Rodolfo	Agroforestry Base Business Unit/Director
Hernández	Ileana	Ministry of Education/Teacher
Núñes	Michel	CAM/Specialist
Otaño	Yoandri	Communist Party of Cuba/First Secretary
Pérez	Helen	Ministry of Foreign Affairs/Specialist
Rodríguez	Yoel	CAM/Deputy Mayor
Romero	Osmani	Ministry of Agriculture/Head of Development
Villa Clara (provincial level)		
Alonso	Juaquin	Central University "Marta Abreu" of Las Villas/Gender
Artides Pardo	Melayma	Senior Foreign Trade Specialist
Avila Gomzález	Yainey	IRES/IRES Technical Specialist
Cristo Acebedo	Georgina	Central University "Marta Abreu" of Las Villas/Gender
González Cuello	Leonardo	ACPA/President
González Pérez	Magdalena	ANAP/Coordinator
Gren Martí	Mabel	ACTAF/Provincial President
Iglesia Rodríguez	Leisi	Ministry of Science, Technology and Environment/Specialist
Macha Mayea	May	ACPA/Focal Point Gender
Martínez	Annia	Central University "Marta Abreu" of Las Villas/Gender
Menedez	Danay	Cuban Women's Federation/Gender
Orlando Puhado	Luis	Ministry of Science, Technology and Environment/Specialist
Paulete Noriega	Maritza	ACTAF/Executive Vice President
Sandra	Sandra	IRES/IRES Technical Specialist
Torres Naba	Danisia	Government/Director of Foreign Trade
Santo Domingo		
Aguila Bernando	Yaidelys	Municipal Assembly/Science Officer
Alvelo Fuentes	Luz Daniela	Municipal Assembly of People's Power/International Cooperation Specialist
Gimenes Toledo	Enniel	Ministry of Science, Technology and Environment/Specialist
Mena Martínez	Elena	Ministry of Agriculture/State Forestry Service Head

Last name	First name	Institution/function
Morejón González	Maira	Ministry of Agriculture/Director Agroforestry Base Business Unit
Pérez Ruiz	Yuleidis	Municipal University Centre Santo Domingo
Rivero	Javier	ACTAF/President
Rodriguez Hernández	Alberto	Ministry of Agriculture/Delegate
Suarez	Yunior	CAM/Director of Development
Corralillo		
Cartalla Espinosa	Mayra	IRES/Specialist
Chávez Reyes	Yosvay	IRES/Technician
Gutierrez Pérez	Yoandri	Municipal Assembly of People's Power/Vice President
Hernández Martínez	José	Municipal Assembly of People's Power/Deputy Mayor
Martínez Rivero	Maidelin	UCV/Municipal University Centre gender representative
Meta Díaz	Inaltes	National Tax Administration Office/Information Technology Expert
Molina Vizcaino	Noel	UCV/Municipal University Centre
Suarez Valdéz	Idania	UCV/Municipal University Centre
Corralillo (Gender Committee)		
Díaz Malagón	Eduardo	21 Sept. Agricultural Production Cooperative/President
Díaz Morales	Yordanka	Cuban Women's Federation/General Secretary
Hernández Martínez	José	Municipal Assembly of People's Power/Vice President
Izquierdo Garcia	Yudislay	UCV/Municipal University Centre student
Lantigua	Marbelis	21 Sept. Agricultural Production Cooperative/Producer
Martínez Reinoso	Maidelin	UCV/Municipal University Centre Representative of the Gender Committee
Matos Días	Inellis	National Tax Administration Office/Information Technology Expert
Molina Vizcaino	Noel	UCV/Municipal University Centre student
Rodríguez Pérez	Landy	Ministry of Science, Technology and Environment/Specialist
Vasallo	Malena	Agricultural Production Cooperative 21 Sept./Grassroots Body Chair
Quemado de Güines		
Abreu	Armando	Ministry of Agriculture/Municipal Delegation
Divo Nuñes	Nelson	CAM/Local Development
Jimenez Rodríguez	Yaima	Ministry of Agriculture/Development Department
López Padrón	Mislay	Municipal University Centre/Student
Martínez	Nuresly	Banco de Crédito y Comercio/Commercial Manager

Appendix 4. People interviewed

Last name	First name	Institution/function
Medero Negrín	Jesús	ANAP/President
Morales Aguiar	Lázara	Ministry of Science, Technology and Environment/Specialist
Parra Bonau	Enrique	Ministry of Agriculture/Municipal State Forestry Service
Parra Ruiz	Merlyn	ACTAF/Extensionist
Perdomo Ledeus	Yoany	AZCUBA/President Farming Production Cooperative
Perdomo Piñero	Kirenia	ACTAF/Extensionist
Pérez Herrera	Yalecsi	Ministry of Agriculture/Farming
Ruiz Santos	Lilian	Municipal University Centre/Professor
Valdéz Pentón	Serguey	AZCUBA/Farming Director
Matanzas/Los Arabos		
Triana Bernal	Zomaika	Communist Party of Cuba/First Secretary Communist Party of Cuba Los Arabos
Álvarez	Alberto	Ministry of Agriculture/Agroforestry Enterprise
Borgues Rivera	Isgel	Cuban Institute of Radio and Television/Journalist
Canet Castillo	Rafael	AZCUBA/Deputy Director
Carmona González	Yanelis	Municipal Assembly of People's Power/Vice President
Castellanos Madeja	Isidro	Ministry of Agriculture/Agriculture Delegate
Cayamo Morera	Marilin	Labour Organization/Director
Domínguez	Adisley	Government/Territorial Development
Gil Aquiles	Yarisley	ANAP/Agrifood
Hernández	Leida	Ministry of Higher Education/Municipal University Centre Professor
Hernandéz Rodriguez	Maritza	Ministry of Education/Code of Ethics
Herrera García	Lázaro	ANAP/President Farming Production Cooperative
Martínez	Almisadays	Government/Mayor
Miliam La Fé	Yaidiel	Municipal Assembly of People's Power/President
Ordoñes Ordonéz	Ariel	Ministry of Sugar/Programme Head
Peña Moltalvo	Noelvis	Ministry of Higher Education/Municipal University Centre Professor
Preicer	Alfredo	Ministry of Agriculture/Livestock Enterprise
Soler Senen	José A	Ministry of Agriculture/State Forestry Service Specialist
Viera Prat	Ricardo	AZCUBA/Director Base Business Unit

Last name	First name	Institution/function
Producers, UEBIST		
Villa Clara Agroforestry Enterprise (Ministry of Agriculture, Villa Clara)		
Capote Pérez	José Luis	GEOMIX/Project Coordinator
Gonzalez Cabrera	Armando	Institute of Agroforestry Research/Director Basic Science and Technology Unit
Lupo Calderín	Osvaldo	Villa Clara Agroforestry Company/Planning Specialist
Luz Garcia	Alexis	Forestry Basic Science and Technology Unit /Specialist
Peña Alonso	Eduardo	GEOMIX/Specialist
Tey Igles	Rafael	GEOMIX/Director
Roberto Torres Estate Quemado de Güines/Villa Clara		
Núñez Álvares	Herminia	José A Credit and Services Cooperative/Peasant
Torre Triana	Roberto	José A Credit and Services Cooperative/Peasant
Pérez Abreu	Eder	Agricultural Base Business Unit/Garden Head
Torre Núñez	Maibelys	José A Credit and Services Cooperative/Peasant
Torre Núñez	Roberto	José A Credit and Services Cooperative/Peasant
Nery Enrique Villavicencio Estate Quemado de Güines/Villa Clara		
Manriquez	Ibrailda	Urban garden/Peasant
Pérez Pereira	Lilian	Urban garden/Peasant
Viera Jovier	Jadiani	Urban garden/Peasant
Villavicencio	Nery Enrique	Urban garden/Peasant
Villavicencio Pérez	Adrian	Urban garden/Peasant
Villavicencio Pérez	Javier	Urban garden/Peasant
AZCUBA, Basic Unit of Cooperative Production Antonio Escaño Quemado de Güines/Villa Clara		
Abreu	Miguel	Basic Unit of Cooperative Production-AZCUBA/Driver
Aleman Martínez	José	Basic Unit of Cooperative Production-AZCUBA/Livestock
Álvarez Gutierrez	Nelson	Basic Unit of Cooperative Production-AZCUBA/Peasant
Brito	Eliecer	Basic Unit of Cooperative Production-AZCUBA/Peasant
Gómez López	Yasiel	Basic Unit of Cooperative Production-AZCUBA/Huntsman
González	Yulexis	Basic Unit of Cooperative Production-AZCUBA/Peasant
González Rodríguez	Odervis	Basic Unit of Cooperative Production-AZCUBA/Batch manager
González Triana	Orlando	Basic Unit of Cooperative Production-AZCUBA/Worker
Jordan	Giberlandis	Basic Unit of Cooperative Production-AZCUBA/Supply Manager

Appendix 4. People interviewed

Last name	First name	Institution/function
López	Maisel	Basic Unit of Cooperative Production-AZCUBA/Huntsman
Morles Padron	Maribel	Basic Unit of Cooperative Production-AZCUBA/Peasant
Pérez	Jorge	Basic Unit of Cooperative Production-AZCUBA/Worker
Pérez	Pedro	Basic Unit of Cooperative Production-AZCUBA/Peasant
Pérez Borges	Serguey	Basic Unit of Cooperative Production-AZCUBA/President
Pérez Castro	Yasmany	Basic Unit of Cooperative Production-AZCUBA/Livestock
Rodríguez	Alejandro	Basic Unit of Cooperative Production-AZCUBA/Peasant
Rodriguez Cordero	Abelenis	Basic Unit of Cooperative Production-AZCUBA/Peasant
Verdecia	Raúl	Basic Unit of Cooperative Production-AZCUBA/Driver
Farming Production Cooperative Julio Casales Quemado de Güines/Villa Clara		
Chirino	Roberto	Farming Production Cooperative Julio Casales/Worker
Gavi	Osmany	Farming Production Cooperative Julio Casales/Worker
Paz	Francisco	Farming Production Cooperative Julio Casales/Worker
Pedroso	Yoany	Farming Production Cooperative Julio Casales/President
***Vivero Forestal* Forestry Base Business Unit Santo Domingo/Villa Clara**		
Aguilar	Ibvain	Forestry Base Business Unit/Worker
Álvarez	Emaita	Forestry Base Business Unit/Head of Forestry
Antoñano	Mabel	Forestry Base Business Unit/Worker
González	Madelin	Forestry Base Business Unit/Worker
González	Yane	Forestry Base Business Unit/Worker
Gutierres	Gudelia	Forestry Base Business Unit/Worker
Guzmán	Ivis	Forestry Base Business Unit/Nursery Manager
Olivera	Damaris	Forestry Base Business Unit/Worker
Paz	Diana	Forestry Base Business Unit/Worker
AZCUBA, Base Business Unit Las Margaritas Santo Domingo/Villa Clara		
Aquito Gomzález	José	AZCUBA/Farming Specialist
Arguelles Ramírez	Kenia	AZCUBA/Director of Agrodevelopment
Díaz	Raúl	Base Business Unit/Seeds Department Director
García	Yeny	Base Business Unit/Head of Production
García González	Deisi	Base Business Unit/Economy
Rios	Odaicer	AZCUBA/Director
Rodriguez López	Jorge Luis	Base Business Unit/Seeds Department Director

Last name	First name	Institution/function
Forestry Base Business Unit Corralillo/Villa Clara		
González Llano	Idania	Agroforestry Company/Accountant, Forestry Base Business Unit
Pérez Mesa	Yuliet	Agroforestry Company/Nursery Worker, Forestry Base Business Unit
Pérez Torrez	Emilio	Agroforestry Company/Forestry Base Business Unit Worker
Portales	Manuel	Agroforestry Company/Subdirector Forestry Base Business Unit
Quevedo Arnal	Yanier	Agroforestry Company/Forestry Base Business Unit
Villega Ávila	Alexis	Agroforestry Company/Forestry Base Business Unit Worker
Vinaiza Perdomo	Ismadel	Agroforestry Company/Forestry Base Business Unit Silviculture Specialist
***El Despertar* FFS Corralillo/Villa Clara**		
Fiallo Martínez	Beatriz	*El Despertar* Estate/Producer
Quintero Almeida	Mariano	*El Despertar* Estate/Producer
Quintero Almeida	Sandy	*El Despertar* Estate/Producer
Farming Production Cooperative, Base Business Unit in Los Arabos/Matanzas		
Álvarez Forte	Alberto	*Agroforestal* Business Group/Agroforestry Director
Conde Valle	Dagoberto	Agroforestry Base Business Unit/Reforestation Technician
Cordero Rivera	Selucio	*Desmonte* Base Business Unit/Tractor Operator
Herrera García	Lázaro	Mario Muñoz Farming Production Cooperative/Farming Production Cooperative President
Márquez Acosta	Duniesky	Gabriel Valiente Farming Production Cooperative/Producer
Ordoñez Soler	Yasmany	Agricultural Comprehensive Base Business Unit/Producer
Palacio Sardiña	Raisa	Mario Muñoz Farming Production Cooperative/Producer
Peña Glendi	Giestes	Mario Muñoz Farming Production Cooperative/Producer
Ramírez	Idelsy	Ministry of Agriculture/State Forestry Service Head
Rodríguez Sorio	Emilio	*Desmonte* Base Business Unit/Tractor Operator
Salgado Benzd	José A	Ministry of Agriculture/State Forestry Service Officer
Valdés Hernández	Geydi María	Mario Muñoz Farming Production Cooperative/Producer
Farming Comprehensive Base Business Unit Colombia/Las Tunas		
Aromil Victoria	Rodolfo	Base Business Unit/Director
Barba	Gustabo	Base Business Unit/Rancher
Barba Montero	Yordanys	Base Business Unit/Rancher
Rodríguez Falot	Reynaldo	Base Business Unit/Directorate
Sánchez Cruz	Armando	Base Business Unit/Rancher

Appendix 4. People interviewed

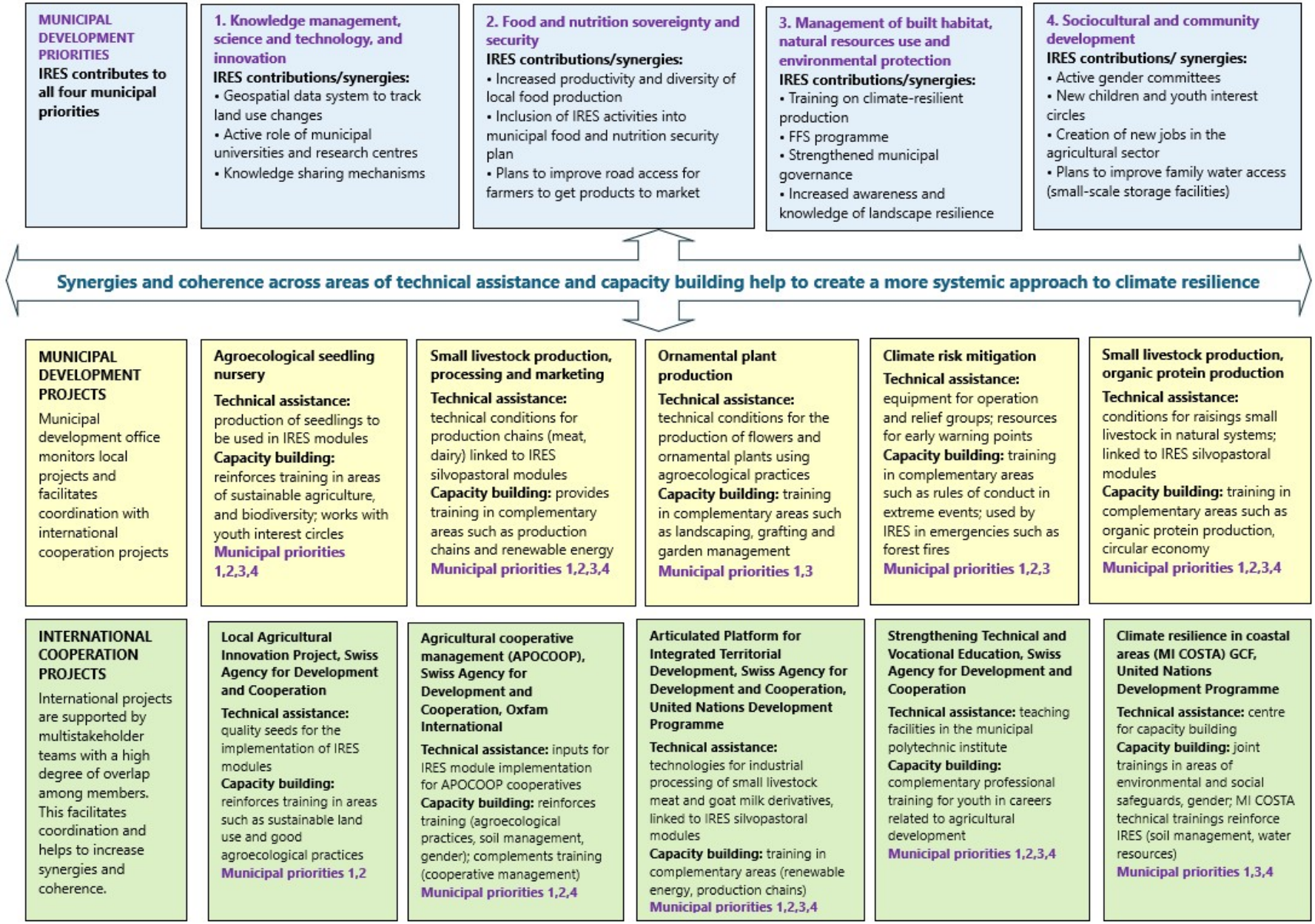
Last name	First name	Institution/function
UEBIST Colombia/Las Tunas		
Cardoso	Eusebio	UEBIST/Economy
Carmentel	Porfirio	UEBIST/Operator
Castro	Alberto	UEBIST/Director
Hernández	Yosbani	UEBIST/Operator
Lama	Idael	UEBIST/Mechanic
Layedo	Norge	UEBIST/Operator
Leyva Martínez	Arais	UEBIST/Economy
Muños	Rafael	UEBIST/Operator
Nuñez	Arael	UEBIST/Operator
Puentes	Alberto	UEBIST/Operator
Ramirez	Yanet	UEBIST/Technician
Reyes	Lisandra	UEBIST/Economy
Rodríguez	Mercedes	UEBIST/Specialist
Tellez	Wilber	UEBIST/Operator
Varga Pupo	Ariel	UEBIST/Driver
Credit and Services Cooperative, Basic Unit of Cooperative Production, AZCUBA/Las Tunas		
Cruz	Mijail	Basic Unit of Cooperative Production/Farming
Díaz Moret	Humberto	AZCUBA/Estate Head
Echevarría	Rainier	Credit and Services Cooperative/Peasant
Echevarría Padrón	Rafael	Credit and Services Cooperative/Peasant
Gómez	Estela	Basic Unit of Cooperative Production/Head of Human Resources
Gómez González	Daniel	Basic Unit of Cooperative Production/President
González Abreu	Erminio	AZCUBA/Farming
Torrez	Humberto	Basic Unit of Cooperative Production/Production Head
Credit and Services Cooperative Sabino Pupo/Las Tunas		
Castellano Carmona	Amelio	Credit and Services Cooperative/Producer
Rodríguez Alonso	Marilyn	Credit and Services Cooperative/Producer
Estate/Colombia		
Guerra	Odalis	Estate/Producer
López	Melquiades	Estate/Producer

Last name	First name	Institution/function
Others		
Provincial Agriculture Delegation Villa Clara (Ministry of Agriculture, Villa Clara)		
González Memo	Yanisa	Ministry of Agriculture Villa Clara/General Director
González Piedra	Norberto	Ministry of Agriculture Villa Clara/Subdelegate
Ihosvany Martínez	Ihosvany	Ministry of Agriculture Villa Clara/Delegate
Machado	Fernando	IAgric Villa Clara/Specialist
Machado	Fernando	Ministry of Agriculture Villa Clara/Ranger Provincial Chief
Madayo	Katia	Ministry of Agriculture Villa Clara/Soil Specialist
Marrero Betancourt	Yoan	Ministry of Agriculture Villa Clara/Soil Specialist
Ofelina Suarez	Lleania	Ministry of Agriculture Villa Clara/State Forestry Service Director
Rodríguez Lara	Osmany	Ministry of Agriculture Villa Clara/Delegate
Zorras Martínez	Taiyanys	IAgric Villa Clara/Specialist
Villa Clara Agroforestry Company (Ministry of Agriculture, Villa Clara)		
Capote Pérez	José Luis	GEOMIX/Project Coordinator
Gonzalez Cabrera	Armando	Institute of Agroforestry Research/Basic Science and Technology Unit Director
Lupo Calderín	Osvaldo	Villa Clara Agroforestry Company/Planning Specialist
Luz Garcia	Alexis	Forestry Basic Science and Technology Unit/Specialist
Peña Alonso	Eduardo	GEOMIX/Specialist
Tey Igles	Rafael	GEOMIX/Director
AZCUBA, Base Business Unit Las Margaritas Santo Domingo/Villa Clara		
Angulo Fuentes	Liz Daniela	Municipal Assembly of People's Power/International Cooperation
***El Despertar* FFS Corralillo/Villa Clara**		
Castro	María Fernanda	Ministry of Education/Zeneido Acosta Urban Basic Secondary School
Fernández Díaz	Taliana	Ministry of Education/Zeneido Acosta Urban Basic Secondary School
Izquierdo García	Yudislay	Ministry of Education/Zeneido Acosta Urban Basic Secondary School
Lynn	Talony	Ministry of Education/Zeneido Acosta Urban Basic Secondary School
Núñez Pérez	Yanelell	Ministry of Education/Zeneido Acosta Urban Basic Secondary School
Paulete	Gabriela	Ministry of Education/Zeneido Acosta Urban Basic Secondary School
Peñalba Rivera	José Angel	Ministry of Education/Zeneido Acosta Urban Basic Secondary School
Vazquez Izquierdo	Keysys	Ministry of Education/Zeneido Acosta Urban Basic Secondary School

Appendix 4. People interviewed

Last name	First name	Institution/function
Matanzas/Los Arabos		
Del Sol Morales	Yoladis	Ministry of Education/Urban Basic Secondary School Director
Díaz Oviedo	Yudelkys	Municipal Assembly of People's Power/Delegate
Reinoso Vizo	Naila	Ministry of Education/Primary School Principal

Appendix 5. Mapping of synergies and areas of coherence in the municipality of Jobabo



Appendix 6. Greenhouse gas emissions reductions and removals analysis

Methodological approach

1. The starting point for the analysis of GHG emissions reductions and removals involved: the review of the mitigation goals reflected in the GHG project targets; the activities included in the funding proposal; the carbon balance included in the funding proposal; the updated carbon balance; and the implementation progress reported. As part of the mid-term evaluation mission, visits were made to farms and properties in the seven municipalities where the project is being implemented. During these visits, conversations were held with the producers who implement the modules, as well as with technicians, extensionists and professionals linked to the different organizations that support the execution of field activities.

2. The GHG emissions reductions and removals calculations made during the design phase using EX-ACT, included in the funding proposal, were reviewed and compared with a new estimation, made in 2022. This new projection considers changes in two of the six modules or activities implemented. Both calculations cover 20 years: seven years for the project's execution and 13 years of capitalization.

3. Progress towards the mid-term targets was also reviewed, including estimates of GHG emissions reductions and removals reported in the 2023 Annual Performance Report (GCF, 2024a). This projection considers the progress in the implementation of the modules between April 2022 (that field activities began) and December 2023. These advances were compared with the mid-term targets.

Main findings

Carbon balance

4. The project's funding proposal, approved by the GCF, considers the implementation of 35 734 ha of agroforestry, forestry and silvopastoral systems by the end of the project, and a mid-term target of 17 867 ha. The net carbon balance, updated during 2022, shows a value of −1 066 055 tCO_2e for a project execution period of seven years. Adding a capitalization period of 13 years, the net carbon balance is −3.04 M tCO_2e, for 20 years, compared to the no-project scenario. This estimate was made using the EX-ACT tool.

5. The first emissions reductions and removals projection was completed in 2019 during the design phase and included as part of the funding proposal approved by the GCF. This projection was prepared using the EX-ACT tool Version 7 considering a period of seven years for modules implementation and a capitalization period of 13 years. This first projection estimated the emissions reductions and removals of 2.6 M tCO_2e over a 20-year period.

6. In 2022, at the request of the GCF, an update was made to the calculation of the emissions reductions and removals from the silvopastoral modules (SILLEC and SILSOM), due to the establishment of protein and energy banks to produce supplementary animal feed. This new estimation of the project's carbon balance was made using EX-ACT Version 9, which offers a higher level of accuracy in the calculations, including updated emission factors. The emission removals values for the rest of the modules (CEDPLA, FRUAGR, MARFOM and MARREG) were not updated and remain in EX-ACT Version 7.

7. Appendix table 1 details the areas for implementation of the six agroforestry, forestry and silvopastoral modules, the original carbon balance calculated in 2019 and the figures updated during 2022, the yearly emissions reductions and removals per ha per module, and the EX-ACT version used for calculations.

Appendix table 1. Modules, areas to be implemented and carbon balance calculated in 2019 and updated in 2022

Modules	Description	Total area to be planted (ha)	Carbon balance (tCO_2e)		GHG emissions reductions and removals per ha/year (tCO_2e/ha/year)	EX-ACT version *
			Original calculations (funding proposal) 2019	Updated calculations 2022 *		
CEDPLA	Cedar and banana	1 754	−154 081	−154 081	−4.39	7
FRUAGR	Agroforestry system with fruit trees, agricultural crops and living fences	2 529	−15 687	−15 687	−0.31	7
MARFOM	Close-to-nature planted forest	8 167	−812 138	−812 138	−4.97	7
MARREG	Natural regeneration management	3 095	−604 359	−604 359	−9.76	7
SILLEC*	Silvopastoral system with legumes	10 499	−458 943	−788 541	−3.76	9
SILSOM*	Silvopastoral system with shade trees and protein bank	9 691	−594 130	−671 067	−3.46	9
TOTAL		**35 735**	**−2 639 338**	**−3 045 873**		

* Data for the SILLEC and SILSOM modules were updated in 2022. Other data were taken from the 2019 calculations.

8. The figures and data sources used in the emissions reductions and removals calculations, carried out in 2019, 2022 and 2023, use data taken from scientific research carried out in Cuba and from the Intergovernmental Panel on Climate Change Tier 1 in the case of not having specific information for the country. The only field data included are the areas intervened (hectares) and the number of animals for the livestock modules.

9. The report detailing the review of the carbon balance of the SILLEC and SILSOM modules (2022) points out the main changes integrated into the update of the silvopastoral modules.

   i. Changes in the number of cattle: young cattle were excluded in the updated analysis since they drink milk and do not produce methane (IPCC, 2006).

   ii. Changes in emission factors: this involves enteric fermentation and manure management, moving from Tier 1 emission factors to country-specific Tier 2 methane emission factors. It also involves both the baseline and the project scenario to reflect changes in animal feed and management practices promoted by the project.

iii. Inclusion of nitrous oxide emissions in GHG emissions estimates (Tier 1): the update includes nitrous oxide emissions from manure management using the default values of the 2019 Intergovernmental Panel on Climate Change Tier 1 guidelines.

iv. Update of the reference values for carbon stocks in biomass and soil (Tier 2): this reflects the degraded soil conditions of the grasslands in the project area before transitioning to cropland and forestry.

v. Revisions of the relative distribution of land allocated to different land uses within the modules (grasslands, silvopastoral systems, living fences and supplementary feeding), without altering the total area affected by the modules.

10. This update assumed that the initial situation and the situation without a project are the same. In the scenario without a project, there would be no interventions.

Progress in implementation

11. The implementation of productive landscape restoration activities had significant delays. Progress was made with the establishment of 36.61 percent of the area planned for the mid-term. The estimated emissions reductions and removals as of December 2023 (−327 589 tCO_2e) reaches 61 percent of the −533 027 tCO_2e mid-term (updated) mitigation target. The fuel shortage, which is associated with the country's energy crisis, has been the main factor that limits progress in the implementation of the modules and, consequently, in the reduction and removal of GHG emissions.

12. Progress results, reported as part of the 2023 Annual Performance Report (GCF, 2024a), show a positive environmental impact due to the implementation of the productive landscape restoration activities, quantified at a total carbon balance of −327 589 tCO_2e. This represents the mitigation potential of land under improved management (6 542 ha) in terms of the reduction and removal of GHG emissions over a 20-year period. The main contributor to the significant mitigation potential is the close-to-nature planted forest (MARFOM) module with a 26.66 percent share and the silvopastoral systems with legumes (SILLEC) module with a 25.89 percent share. The overall (or module specific) GHG emissions reductions and removals achieved for the first two years of implementation are not included in the report.

13. Appendix table 2 details the mid-term targets (area) for each activity and module, the area planted by December 2023, and the mitigation potential (GHG emissions reductions and removals) of the implemented areas during a 20-year period. These data were reported as part of the 2023 Annual Performance Report (GCF, 2024a).

Appendix table 2. Modules, areas implemented and mitigation potential as of December 2023

Activity	Modules	Mid-term targets (ha)	Implemented (planted) area (ha)	Mitigation potential (tCO_2e)
1.1 Agroforestry systems, plantations and natural regeneration management	CEDPLA	1 213.85	597.32	−45 902
	FRUAGR	1 397.38	608.30	−6 079
	MARFOM	2 719.39	42.00	−4 861
	MARREG	1 788.05	260.40	−55 952
Activity subtotal 1.1		*7 118.67*	*1 508.02*	*−112 794*
1.2 Silvopastoral systems	SILLEC	4 116.93	1 974.50	−110 114
	SILSOM	6 451.40	3 059.00	−104 681
Activity subtotal 1.2		*10 568.33*	*5 034.50*	*−214 795*
TOTAL		**17 687.00**	**6 541.52**	**−327 589**

14. The EX-ACT files that quantify the mitigation potential of the six modules, included as part of the 2023 Annual Performance Report (GCF, 2024a), consider an implementation period of four years. However, the module field implementation effectively started in 2022, so the implementation period should be two years. Another inconsistency found are the areas reported for the SILLEC and SILSOM modules[34] that differ from the areas reported in the 2023 IRES Carbon Balance Monitoring Report. Such differences may lead to an overestimation of the reported data and should be revised.

15. During field visits, it was observed how some farmers produce charcoal. They use the raw material from the woody trunks of the marabou that are eliminated from the land where the modules are implemented. This marabou charcoal is sold by producers. It has become an additional source of economic income, given the high demand for fuels. When reviewing the GHG emissions reductions and removals, done in 2022 and 2023, it was observed that emissions from charcoal production have not been quantified and integrated into the project's carbon balance. This additional source of GHG emissions was not included in the carbon balance of the 2019 funding proposal.

16. Alternatively, it was also found during field visits that the project extensionists and technicians report the coordinates of each module and owner using geographic information systems. This is to be integrated into the project's monitoring and follow-up system, as well as the Spatial Data Infrastructure platform. The 2023 Annual Performance Report indicated the integration of data from 1 085 properties into the digital platform (GCF, 2024a). This can be considered a good practice implemented by the project.

[34] The 2023 IRES Carbon Balance Monitoring Report provides a value of 1 974.50 ha for the SILLEC module, while the EX-ACT file reports 2 353.00 ha. For the SILSOM module, the 2023 IRES Carbon Balance Monitoring reports 3 059.00 ha, and the EX-ACT file reports 3 708.00 ha.

Appendix 7. Gender-transformative approach[35]

A **gender-transformative approach** seeks to actively examine, challenge and transform the underlying causes of gender inequality rooted in inequitable social structures and institutions. It seeks to: remove structural barriers to gender equality; challenge unequal distribution of resources and allocation of duties between men and women; understand and change gender norms and roles and discriminatory social structures; foster more equitable gender relations within households, communities and organizations; facilitate dialogue, trust and behavioural change at multiple levels (individual, household, community and systems/institutions); use participatory and experiential learning methodologies; recognize intersecting forms of discrimination faced by women; and actively engage with men and boys as allies for change and advocates of gender equality.

Note: As mentioned in Subsections 3.4 and 3.5 of the evaluation report, IRES has a strong gender focus. Indeed, it has contributed to results such as increased technical capacity, the participation of female producers, and greater awareness about gender and climate resilience. While this progress is notable, IRES could take a more intentional and strategic approach to catalyse gender-transformative change over the remaining years of implementation.

Source: FAO. 2024. Joint Programme on Gender Transformative Approaches for Food Security and Nutrition. In: fao.org. Rome. [Cited 2 October 2024]. https://www.fao.org/joint-programme-gender-transformative-approaches/overview/gender-transformative-approaches/en#:~:text=The%20gender%20transformative%20approach%20is%20one%20category%20on,inequality%20rooted%20in%20inequitable%20social%20structures%20and%20institutions.

17. To achieve this, IRES does not necessarily need to add another line of work. Rather, it should refocus on the stated longer-term gender priorities and re-orient the analysis of gender data. It already has many of the inputs needed. Project gender experts could start with existing resources, such as women's life stories that track qualitative changes in behaviour and guidance documents developed by the Ministry of Agriculture and FAO (FAO, 2023b; 2023c; FAO, IFAD and WFP, 2020; 2022; Ministry of Agriculture, 2020; Ministry of Agriculture, 2023b and life stories of female project beneficiaries published by the IRES communications team, 2022–2024). For example, the project's initial gender analysis identifies key inequalities and gaps, as well as steps that IRES planned to take to address them. The FAO documents outline (stepwise) stages, types of change, outcomes and possible indicators for a gender-transformative approach in food security and sustainable agriculture.

18. The project could take some steps towards a gender-transformative approach using existing project resources (financial, technical). However, potential activities like expanding leadership training (political empowerment) or support for women-led businesses (economic empowerment), would require additional external funding. The IRES team could explore options for targeted funding to pilot a gender-transformative approach. Several documents and stakeholders interviewed during the evaluation mission identified strategies and entry points for IRES to foster gender-transformative change. For example, the gender analysis (GCF, 2020b) highlighted gender inequalities that are prevalent in rural municipalities and steps that the project can take to address these gaps. Other relevant documents include Annual Performance Reports (GCF, 2023a; 2024a) and the Governance Platform (IRES Project, 2023b).

Promote women's leadership and empowerment

19. The project has identified 68 women leaders (including 26 producers) who have been empowered through IRES and have the potential to become agents of change in agriculture and their communities. The project plans to provide workshops to strengthen women's transformative leadership. That outreach should: target a larger group of women; enable them to take on a

[35] The sole purpose of this appendix is to provide suggestions and discussion points for the Ministry of Agriculture, FAO, and the GCF.

leadership role in different economic and political structures (for example, FFS initiatives, farms, cooperatives, agroforestry enterprises, municipal committees); strengthen their knowledge of women's rights and gender equality; and include technical assistance and mentoring from other local leaders. Training should include male leaders of cooperatives to show them the importance of promoting and investing in women's leadership and empowerment.

Facilitate the economic empowerment of women and youth, particularly in value chains

20. The project has provided initial training to women and youth to help them get jobs on project farms or seedling nurseries. Its technical assistance has helped municipalities develop local development plans to support the processing and marketing of milk, meat and honey produced by project farmers. This may create new jobs for women. In the second half of implementation, IRES could facilitate mechanisms such as training women to design projects and a targeted call for proposals to create women-led microenterprises through municipal financing or resilience funds. The project should focus more on implementing value chain activities, as conceived in municipal development plans and outlined in the Annual Performance Reports and Gender Analysis. For example, the gender analysis (GCF, 2020b) highlighted gender inequalities that are prevalent in rural municipalities and steps that the project could take to address these gaps. Other relevant documents include the Annual Performance Reports (GCF, 2023a; 2024a) and the Governance Platform (IRES Project, 2023b). These involve promoting women-led mini-industries in food processing, laboratories to support agroforestry production, and the production and processing of medicinal plants, essential oils and vegetable fibres to make handicrafts (GCF, 2020b).

21. Economic empowerment also requires recognizing and remunerating women's work in production. Although IRES collects gender-disaggregated data in its workshop attendance records and resource delivery, it does not have disaggregated data on the productive contribution or income of women on the farms. According to a gender expert, "women are not paid for their work on the family farm or cooperatives. Their husbands are the only registered members who are paid. The project should help women get recognized as full members and leaders of the cooperative, with rights and responsibilities. This is starting to happen with the project, but we don't have indicators to measure how much has been achieved." When the project began, women constituted 15 percent of 18 614 cooperative members and 25 percent of 4 000 employees of state companies (GCF, 2020a, p. 39), however, it did not track any increase in that percentage or total number as an indirect or a direct result of project support.

22. Another element of economic empowerment is increasing women's access to and control of resources. A small number of women control land, with only 1 000 female usufructuaries and 500 owners in the seven target municipalities (GCF, 2020b, p. 14).[36] Women have less access to bank credits to expand production because they do not control land or cash from paid labour. Women also have less access to technological resources or technical training (for example, equipment operators) than men. The project reports the number of women who have access (training) to equipment but could also monitor other areas where IRES has contributed to women's access to and control of economic resources. For example, this would involve the number of women who

[36] Project documents did not provide corresponding figures for the number of male landowners or usufructuary users, so data were not available to calculate the overall percentage of female owners. In its design, IRES did not intend to directly affect land tenure, that is, increase the number of women usufructuaries or owners.

have accessed bank credit, have planned, planted, sown or sold crops themselves, rather than through male partners, or how much income they have generated and controlled.

Improve women's access to care services

23. Project stakeholders and reports identify a lack of access to care services as a major barrier for women to reach their economic and leadership potential. The project plans to work with local actors and access co-financed economic initiatives to promote initiatives that support care tasks (laundries, pre-prepared or processed food, home caregiving for children and older people). This would encourage greater participation of teenage mothers and all women in the socioeconomic life of the territory and local development (GCF, 2024a, p. 48).

Increase gender equality in household decision-making and the distribution of domestic work

24. The Annual Performance Reports suggest that increased income from production will enable female farmers to participate more fully in household decision-making and be positive role models for girls. To give women more time and access to paid work, the project documents also recognize the need for men to play a more equitable part in domestic work. One proposed step to increase men's awareness and co-responsibility would be for an IRES partner[37] to provide positive masculinities training for male project beneficiaries, in addition to the gender equality training they already receive. Another step could be to recognize positive examples of men sharing household work (identify male champions of change). Stakeholders reported that men who are involved in IRES are more open to supporting women's empowerment. Regardless, machismo runs deep in the rural areas.

Improve performance measurement and reporting on gender-transformative change

25. The project needs to further strengthen gender technical capacity at both the Ministry of Agriculture and FAO. In order to move towards gender-transformative change, IRES has to incorporate indicators to measure longer-term outcomes. This includes strengthening qualitative indicators and developing a stepwise approach to measuring incremental progress in changing attitudes and behaviours, as well as implementing new techniques.

26. Appendix table 1 shows how the project currently monitors and reports gender-disaggregated data for the Gender Action Plan. In comparison, Appendix table 3 illustrates how that same data and other available qualitative information can be rolled up into a higher-level results framework (based on gaps identified in the Gender Analysis) that would move IRES towards a gender-transformative approach.

[37] The project documents and stakeholders mentioned the Dr. Martin Luther King, Jr. Memorial Centre, the Felix Varela Centre and the Centre for Cuban Economic Studies as a partner that could provide positive masculinities training.

Appendix table 3. Gender Action Plan monitoring report (simplified version)[38]

Progress on implementing the Gender Action Plan (to the end of 2023)			
Activities[1]	**Indicators**	**Target**	**Mid-term progress**[2]
Increased resilience, improved livelihoods and living conditions	Number of men and women benefiting from climate-resilient livelihood options *Note: What does this mean? People who get any direct benefit from the project? Which women benefit? How do they benefit?*	23 505 women (46% of those benefiting 51 098)	• 3 282 (39%) of 8 416 beneficiaries
People trained in the management of climate-resilient production with gender equity	Number of men and women benefiting from training processes for climate-resilient agriculture with gender equity	23 788 (100% of women)	• 1 603 women trained; 41.5% of total 3 860
Implementation with gender sensitivity of the six productive modules on 37 734 ha (Outcome 1)	% of women attending areas benefited by sustainable practices that increase climate resilience	2 378 women (10% of female beneficiaries)	• 303 women; 33% of total 918
Construct small-scale water storage facilities	Number of women benefitting from small-scale water storage facilities	896 women	0
Improve access conditions of women's transportation (road)	% of women benefitting from improved access conditions (roads)	Not less than 50% (at least 12 000 women)	• Access roads built with resources from productive bases; 1 forest road built in Villa Clara, benefitting 3 communities
Establish seven nurseries (one per municipality) for the production of forest and fruit seedlings; the development of mini-industries	% of new jobs generated by the project occupied by women and men (type of employment: nurseries, mini-industries, production, marketing and along value chains)	Not less than 50% of the employment generated	• Bases created for 7 nurseries that should generate 35 jobs (21 or 60% of them held by women)
Acquisition of productive technologies for climate resilience (Outcome 1)	% of women among total beneficiaries of productive resources	Not less than 50% of beneficiaries	• 161 women (43%) benefitted from access to resources *Note: neither figure works; numbers below add up to more than 161 women and only 7% based on information below* • Technological equipment: 99 women out of 1 515 (7%) • Work tools: 169 women out of 2 535 (7%) • Computer, office equipment: 30 women out of 420 (8%)

[38] This version eliminates the baseline column (which was zero for all but one indicator), the budget and currency columns, and some descriptive narrative text.

Progress on implementing the Gender Action Plan (to the end of 2023)			
Activities[1]	**Indicators**	**Target**	**Mid-term progress**[2]
			• Means of transport: 5 women out of 361 (1.4%)
Implement a gender-sensitive communications strategy to make women's contributions visible	1 gender-sensitive internal and external communications plan	1 communications plan	(Progress reported in the 2022 Annual Performance Report) • Produced 4 out of 22 audiovisuals on gender in 2022 • Produced brochure on gender and climate change • Published booklet with ACTAF, with 7 training brochures • Prepared 2 compendia with 40 articles on gender studies for project coordination groups • Cubavisión television broadcast on the gender-differentiated impacts of climate change
Improve working conditions to incorporate women into the project modules	Number of gender differentiated toilets created or improved	19	• 12 out of 19 sanitary facilities installed; the rest purchased for nurseries, coordination units and UEBIST
Workshops with local agricultural managers to facilitate caregiving tasks	Number of care facilities established (childcare centres, homes for older people), and flexible schedules for both genders	N/A	• Tasks in planning phase • Alternatives for care facilities being sought
Undertake municipal gender analyses to identify local actors and alliances	Number of municipal gender analyses		• 7 municipal gender analyses done and municipal actors mapped
Establish project gender committees in each benefitted entity	Number of gender committees that represent local stakeholders	7	• 7 municipal gender committees formed with members from the project team, local governments, the Ministry of Agriculture, universities, producers' associations and the Cuban Women's Federation
Ensure presence the of gender committee representatives on project governance teams	Representative of gender committees in national coordination, each provincial team	At least 4	• 1 Gender Coordinator on the national project team at the Ministry of Agriculture; no specialist at FAO • 1 coordinator on each provincial team • Project representative on each of the 7 municipal gender teams
Formulate Gender Action Plans for each beneficiary entity	Gender Action Plan for each beneficiary entity	100% of productive units	• Each province and municipality have developed a Gender Action Plan • More work needed at the farm level
Design and implement gender-sensitivity training for producers, extensionists and all beneficiaries (Outcome 2)	% of women who participate in capacity building *Note: should be all men and women*	100% of women beneficiaries (23 788)	• 4 workshops on gender (2022) • 1 603 women trained in production with a gender focus [not gender-specific training] *Note: unclear if any beneficiaries received specific gender-sensitivity*

Progress on implementing the Gender Action Plan (to the end of 2023)			
Activities[1]	**Indicators**	**Target**	**Mid-term progress**[2]
		Note: should include men too	*training other than that integrated into technical training*
Increase women's climate change knowledge and participation	% of women who participate have risk perception and knowledge about climate change	90% of total (21 410)	• Methodology being developed
Increase women's application of new practices learned	% of women trained who use at least one practice learned on own farms	80% of total (19 000)	• Methodology being developed
Map key gender actors in each zone to establish strategic alliances	Mapping key actors with recommendations to contribute to the Gender Action Plan in each zone	4 gender maps (1 national, 3 provincial)	• Prepared gender maps but did not identify alliances or possible contribution to the project
Carry out women's leadership training workshop with ANAP and the Ministry of Agriculture	Leadership training workshop reports	4 reports	• Women's leadership workshops postponed until 2024 due to fuel shortage
Identify and train female leaders	Number of women leaders identified and trained	14 leaders	• 68 women leaders (26 are producers) identified across territories • Training postponed until 2024
Project procurement and investment with gender focus, and prioritize the delivery of productive resources to women	% of resources that are allocated to women	50%	• 161 women producers benefitted from productive resources *Note: This contradicts higher figures in row number 7.*
All project data and statistics are gender-disaggregated	% of data collection instruments that are genders-disaggregated	100%	• All attendance records, beneficiary information, capacity development indicators and access to resources are gender-disaggregated *Note: but not reported that way*

Notes:
[1] The Activities column combines outcomes (results), outputs and activities.
[2] The Progress column shows targets met, partially met or not met. The Gender Action Plan does not provide mid-term targets per se, so the assessment is based on whether or not it has reached about half of its target for that indicator. The text in Italics indicates evaluator questions or comments.

27. Appendix table 3 shows how the project currently reports on gender results. This is compared to Appendix table 4, which shows how IRES could measure and analyse them. Refocusing the reporting on a results-based framework would help the project move towards a gender-transformative approach. The project would not need to monitor and report on all these indicators or outcomes, but rather prioritize a few key ones and make more strategic use of the data collected by the project. During the initial project design, not many indicators related to the transformational approach were identified, so IRES would need to assess what it could realistically achieve and measure with the resources available and time remaining for implementation. Although IRES does not expect to transform power structures or the land ownership system in Cuba, it could help carry out transformative actions to improve women's

participation and access to resources, as stipulated in the project approval documents. For its part, the GCF would need to be flexible to accept a revised format for gender reports and consider providing additional dedicated funding to carry out this pilot process.

28. Appendix table 4 aims to capture gender-related results that IRES has or plans to achieve by project end. It integrates the indicators and outputs currently reported by IRES, qualitative data from project communications products, and qualitative or anecdotal evidence gathered during the evaluation mission. The table is illustrative. It is not a comprehensive summary of all gender-related project activities and results. It rolls up activity- and output-level data from IRES monitoring and reporting to higher-level outcomes (✓) that are based on the project's gender analysis and FAO documents on gender-transformative approaches. The table includes **targets** set by the project and other **sample *indicators*** for that outcome.

Appendix table 4. Gender-related results to end of 2023: towards a gender-transformative approach

Gender-related results **Result • Data Reported or Examples Project Target [Missing Data] *Sample Indicator***
Economic empowerment: agroforestry production, access/control of resources, employment
Increased technical capacity of female agroforestry producers **Increased application of new agroforestry techniques by women producers** • 1 603 women (41.5% of total 3 860) trained in climate-resilient production with a gender focus **23 788 women (100% of beneficiaries) trained in climate-resilient production** • 303 women (33% of total 918) trained on six productive modules, with gender approach **2 378 women (10% of female beneficiaries) trained in six productive modules** • Several women producers interviewed for evaluation reported that they have learned and applied new production techniques. For example, a woman producer in the municipality of Colombia reported that through the project, she learned how to improve cattle fodder and milk production and plans to train as a tractor operator. "Now my husband comes to me for support because I'm better prepared and know more about raising cattle. He doesn't see me the same way he did before we both got involved in the project." • A few women producers interviewed in Las Tunas said that through IRES, they have learned how to plant shade trees for cattle, grow high-protein fodder and diversify crops of fruits and vegetables. • The project reports the number of women involved in fruit and vegetable production, with some raising cattle. Fewer women are engaged in forestry. • [No data available on an increase in the number of women involved or how many got into agroforestry as a result of IRES.] • [No data available on the number of women with an increased knowledge about climate change (perception survey results not gender-disaggregated).] **90% (21 410) women with an increased knowledge and risk perception about climate change** • [No data available on the number of women who apply new production techniques (perception survey results not gender-disaggregated).] **80% (19 000) women use at least one new practice learned on their farms**
Increased production and productivity of women in agroforestry • Some women producers interviewed for the evaluation planted new types of crops and/or said they were growing more because of improved soil, the use of organic fertilizer and other inputs. • [Any quantitative data on increased production by women farmers in the project?] *- Level of production and productivity by women farmers involved in project*
Increased participation of women in farms, cooperatives, producers' associations.

- (#) of women who have become members of cooperatives or other productive units with project support [Women constituted only 15% of 18 614 cooperative members and held 25% of 4 000 jobs at state enterprises in project areas when IRES started]. [Has the project contributed to increasing those numbers?]

- Number (and percentage) of women who have become cooperative members or started farming with project support

- Number of women being paid for productive labour (in cooperatives, at state enterprises, on family farms)

Increased access to and/or control of productive resources in agroforestry by women

- According to project's gender analysis, only 1 000 female usufructuaries and 500 landowners in seven target municipalities [How many male owners/usufructuaries are there?]
- Women's access to IRES productive technologies: technological equipment, 99 women out of 1 515 beneficiaries (7%); work tools, 169 women out of 2 535 total (7%); computer/office equipment, 30 women out of 420 (8%); and means of transport: five women out of 361 (1.4%)

  Women comprise at least 50% of total beneficiaries gaining access to productive technologies
- Four farms (out of 57.7%) in the project are run by women, two by married couples (2022)
- Strengthened infrastructure of 12 FFS initiatives, including four run by women (2022)
- [Any data on how many more farms are run by women, or women members of cooperatives who are paid the same as men?]

- Number of women who own or manage farms (usufructuaries) in the project area

Increased access to credit, financial resources by women

- Women in the project areas have less access to bank credits to expand production (project gender analysis) because they do not control land or cash from paid labour.
- [Any data on whether women farmers have been among an increased number of farmers accessing credit with support from project?]

- Number of women who access new lines of bank credit, FONADEF or local development project funds.

Increased leadership capacity and participation in decision-making by women in local economic entities (farms, cooperatives, producers' associations, municipal government)

- 68 women leaders (26 are producers) identified across the project territories. Planned training to strengthen women's transformative leadership delayed until 2024 due to fuel shortages.
- Interviewed female leaders said that the project has empowered them. For example, learning about her rights and role in production helped Arelis Calvo move into a management position at her cooperative in the municipality of Colombia. As one of the project's eight women leaders in that municipality, Arelis reaches out to other women. "I motivate them to join the project and move forward. Now many more women want to get involved in IRES, and they take part in project training." Once her story was broadcast on national television, Arelis has been inspiring other women farmers and girls across the country to move forward.
- Anecdotal evidence about other individual women who have become cooperative leaders, learned new production techniques and got more directly involved in production
- Anecdotal evidence of women holding leadership positions in agroforestry, such as in a tobacco enterprise, AZCUBA, the seed bank, cooperatives and technical institutes. It is unclear how many women moved into these roles as a result of the project (attributable), and data are not monitored or aggregated across seven municipalities.
- (#) of women who have become members or leaders of cooperatives and state enterprises. [Women constituted only 15% of 18 614 cooperative members and held 25% of 4 000 jobs in state enterprises in project areas when IRES started. [How many female members did the cooperatives in IRES have at the project outset and now? Has the project contributed to increasing those numbers?]

- Number of women who hold leadership (decision-making) positions in cooperatives, state enterprises, municipal government, technical colleges or universities (related to agroforestry)

Increased gender awareness among all agroforestry beneficiaries of gender and climate change

- 3 860 producers (1 603 women, also counted above), extensionists and cooperative leaders trained in production modules. Training included discussion of themes like gender-differentiated needs, gender and climate change, and resilience with a gender perspective. Gender training was delivered by specialists from local universities.

- 343 participants (55% women) were trained on gender issues within training on the implementation of production modules. [This contradicts the aforementioned statistics that seem to measure the same data.]
  23 788 (100%) women beneficiaries [The target should include male producers too.]
- Gender training provided by hundreds of members of gender committees, universities, producers' associations and community promoters. According to several stakeholders, project participants now have greater awareness of gender inequalities, and women's role in agroforestry and at home.
- For example, a gender coordinator in the municipality of Colombia noted that "farmers in the project have learned the importance of the work women do in caring for the family and animals and working in the fields. Those men have changed their mentality and now value women more."

Increased employment, income and working conditions for women, particularly related to production value chains

- 20 women (19.6% of 102 total) trained as machine operators or mechanics, but none are currently working in those jobs in the municipalities visited for evaluation.
- Created base for seven nurseries to produce forest and fruit seedlings. Seven nurseries currently employ 21 women (60%) and 14 men. New technical nurseries are expected to be operational by the end of 2024 (behind schedule), generating a total of 84 jobs – of which, the majority will be held by women.
- New seedling nurseries will improve working conditions for women (and other workers) because beds are raised. This reduces back strain from crouching to work at the ground level.
- 12 out of 19 gender-differentiated sanitary facilities installed. The remainder were purchased for seven nurseries, ten coordination units and two UEBIST.
- The project provided technical assistance to help municipalities develop local milk or meat processing plants that expected to employ 50% women.
- The project plans to help municipalities implement incubators that create female employment and promote women-led mini-industries in food processing, laboratories related to agroforestry, the production and processing of medical plants and fibres to make handicrafts.
- Produced an audiovisual on women's participation in nursery management and forestry to highlight their role in the transformation process.

Women get at least 50% of the new jobs generated by the project (nurseries, mini-industries, production/processing/marketing, value chains)

Targeted mechanisms and technical assistance to facilitate the creation of women-led enterprises

Social results: food security, water, transportation, care services, protection, rights

Improved food security for women, families and communities

- In 2023, the project contributed to the production of more than 1 000 t of crops, including tuberous root vegetables, grains and fruit for communities and schools (GCF, 2024a) [How much has food production increased in target municipalities, with support from IRES?]
- A municipal official reported that by diversifying and increasing agricultural production, IRES has helped to improve the municipality's level of food self-sufficiency.
- Project activities included in municipal action plans to achieve food and nutritional security.
- Seven training brochures produced with ACTAF, and a project pamphlet on food sovereignty with a gender focus that outlined steps to increase the access of women and youth to the means of production and training.

- Number, percentage of food-secure homes among IRES beneficiary families

Improved access to water for women and families

Small-scale water storage facilities constructed for 896 women (delayed until 2024)

Improved access and conditions of roads

- Access roads built with resources from productive units.
- One forest road built in Villa Clara, benefitting three communities (funded by the municipal government)

At least 12 000 women (not less than 50% of beneficiaries) have improved road access

Improved access to care services

- Project stakeholders and reports identify a lack of access to care services as a major barrier for women in target municipalities to reach their economic and leadership potential. The project plans to work with local actors and access co-financed economic initiatives to promote initiatives that support care tasks (laundries, pre-prepared or processed food, home caregiving for children and older people). This would encourage greater participation of teenage mothers and all women in socioeconomic life of the territory and local development (GCF, 2024a, p. 48).
- Project postponed (until 2024) intersectional analyses to identify the most vulnerable population, mainly adolescent mothers. It plans to work with two universities and the Cuban Women's Federation to develop a targeted response and improve care services (GCF, 2023a).
- Workshops are planned with local agricultural managers and municipal partners to find local care alternatives for children and older people. This would facilitate women's caregiving tasks. There should also be flexible working schedules for both sexes.

Increased gender equality in household decision-making and the distribution of domestic work

- Project goal: "increased incomes from climate-resilient agroforestry and silvopastoral production will empower women farmers to participate more fully in decision-making and economic activity … by demonstrating an increase in autonomous decision-making, participating women farmers will provide positive role models for adolescent girls" (GCF, 2023a).
- To give women more time and access to paid work, project documents also recognize the need for men to play a more equitable role in domestic work. One proposed step is to increase men's awareness and co-responsibility would be for IRES partners to provide training on masculinities and gender-based violence for male project beneficiaries. This would be in addition to the gender training that they already receive.
- Stakeholders reported that men who participate in IRES are more open to supporting women's participation and empowerment. A gender coordinator in the municipality of Colombia stated: "Men taking part in the project have learned the importance of the work women do caring in for the family and animals and working in the fields. Those men have changed their mentality and now value women more."
- A few male farmers interviewed for evaluation said they now help with cooking and childcare to allow their wives to work in cooperatives or outside jobs (e.g. milk processing). However, most stakeholders recognized that it will take a long time (generations) to change the deep-rooted machismo culture in rural areas.
  - *Percentage of women who actively participate in decisions on crop production and sales in their households*

Governance results: organization, participation, partner capacity, public awareness

Strengthened territorial coordination and participation in gender mainstreaming in the project

- The project established seven municipal and three provincial gender committees for the project. The committee members represent project stakeholders, including the local government, producers' associations (ACTAF, ANAP, ACPA), state enterprises, universities and the Cuban Women's Federation. Some project partners such as schools or cooperatives also have their own gender committees. The project has improved coordination between diverse organizations on gender committees, including the Cuban Women's Federation.
- The project mapped key actors working on gender in each zone to build strategic alliances, but none have proposed joint actions yet.
- Gender committees play an active role in project implementation and contribute directly to achieving results such as greater gender capacity, awareness, participation and coordination at various levels. For example, gender committee members from universities and the Cuban Women's Federation deliver gender-related training at farms and cooperatives. The members of producers' associations and trained local gender promoters meet with families and distribute educational materials about gender and climate change.

Increased institutional capacity to plan and implement gender-responsive programming

- Seven municipal gender analyses were done. These outlined key gaps to be addressed and included mapping of municipal actors.
- Seven municipal and three provincial Gender Action Plans were developed to strengthen women's role in rural development. A few productive units also prepared the Gender Action Plans, but more work was needed at the farm level.
  - 100% of productive units involved in the project have Gender Action Plans
- Gender plans and training to integrate gender considerations into municipal development planning increased local capacity and awareness. One municipal official stated: "IRES has strengthened our gender focus in the municipality.

Through IRES, we've learned about the differential impacts of climate change on women and men, women's important role in production and what we can do to promote women's empowerment in agrifood production. These were new topics that we hadn't learned about before." • Training was provided to territorial government officials and members of gender committees. A gender committee member in the municipality of Colombia stated: "We had received gender training from other projects before. IRES training is different because it includes a paradigm shift to climate-resilient landscape management and adaptation, strengthening the gender dimensions in these new action areas in rural communities." According to a few provincial stakeholders, IRES has a stronger gender focus than other international projects that they have worked on. • The project contributed to greater gender awareness among institutional partners, including the Ministry of Agriculture. It also reinforced the Ministry of Agriculture's commitment to its Gender Strategy.
Increased (community) awareness and gender-sensitivity (related to production and resilience) • Several communications products, such as frequent media reports (print, radio, television, social media) and brochures, highlight women's contribution to climate-resilient agroforestry through IRES. • Female leaders profiled in project communications products, such as life stories, that were published and broadcast on television • Women beneficiaries, gender committee members and teachers in the interest circles play an active role in social media and community engagement on the project.

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