FP157

Coastal resilience to Climate Change in Cuba through Ecosystem Based Adaptation – MI COSTA

Cuba

October, 2025

Interim Evaluation Report

This report presents the Interim Evaluation of the Green Climate Fund (GCF)-funded project “Coastal resilience to Climate Change in Cuba through Ecosystem Based Adaptation – MI COSTA”. The evaluation was independently commissioned by the Accredited Entity (AE), UNDP, and submitted to GCF. GCF assumes no responsibility for the accuracy of the

INTERIM EVALUATION

"Coastal resilience to Climate Change in Cuba through Ecosystem Based Adaptation – MI COSTA"

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FINAL REPORT

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iv. Acronyms

AMA	Environmental Agency
APR	Annual Performance Report
CC	Climate Change
CEA	Environmental Study Centers
CITMA	Ministry of Science, Technology, and Environment
EMS	Environmental Monitoring System
EWS	Early Warning Systems
ESAR	Environmental and Social Assessment Report
ESMP	Environmental and Social Management Plan
FLACSO	Latin American Faculty of Social Sciences
GCF	Green Climate Fund
ICIMAR	Institute of Marine Sciences
IE	Interim Evaluation
IES	Institute of Ecology and Systematics
IGT	Institute of Tropical Geography
INRH	National Institute of Water Resources
INSMET	Meteorological Institute
MOOC	Massive Open Online Course
MUC	Municipal University Centers
NPSC	National Project Steering Committee or Project Board
UNDP	United Nations Development Program
PRODOC	Project Document
SNE	National Statistical System
ToC	Theory of Change

1. Executive Summary

1.1 Project Description

Project Details		Project Milestones	
Project Name	Coastal resilience to Climate Change in Cuba through Ecosystem Based Adaptation – MI COSTA	Date of approval of the Funding Proposal	03/19/2021
PIMS number	5994	Effective date of the FAA	09/13/2021
Project GCF ID	FP157	Date of signature of the PRODOC	12/02/2021
Gender Marker (UNDP)	2	Date of the Inception Workshop	01/30/2022
Expected date of the Final Evaluation report	3/12/2030	Expected date of the Interim Evaluation	12/12/2025
Area of Action / GCF Strategic Program	(1) Ecosystems and Ecosystem Services	Expected Completion Date	09/16/2029
Accredited Entity	UNDP	Grant	GCF
Execution partner(s)	Ministry of Science, Technology, and Environment (CITMA); Ministry of Agriculture (MINAG); and National Institute of Water Resources (INRH)		
Participation of NGOs	Not applicable		
Financial information			
Project	PRODOC Commitment		IE[1]
[1] CITMA Contribution:	2,7		0,9
[2] MINAG Contribution:	16,2		7,4
[3] INRH Contribution:	1,4		1,3
[4] Total co-financing [1 + 2 + 3]:	20,3		9,6
[5] Total Funds GCF:	23,9		14,7
[6] Total Project Funds [4 + 6]	44,2		24,3

[1] *The financial information on the counterpart refers to the level of execution as of December 2024. These data are collected annually, so updated information will be available in January 2026.*

1.2 Project Progress Summary

The project's interim evaluation shows progress in both the rehabilitation of coastal ecosystems and the strengthening of institutional and community capacities for climate change adaptation. Overall, the achievements under Products 1 and 2 demonstrate a technically sound, socially participatory, and strategically coherent implementation aligned with the objectives of environmental restoration and climate resilience in the country's coastal areas. While some challenges persist, linked to logistical limitations and Cuba's broader economic context, the project has succeeded in establishing a robust structural foundation for the sustainability of its interventions.

Under Product 1, focused on ecological restoration, ecosystem profiles were completed for all seven intervention sites, including hydrological diagnostics, baselines, and detailed work plans. These technical inputs have been integrated into IDEMA's cartographic viewer, a strategic tool for territorial planning and monitoring. The removal of anthropogenic barriers has restored the natural flow of water to mangrove areas, promoting their regeneration. Additionally, the implementation of a mangrove health monitoring protocol and associated training activities have strengthened local environmental management capacities.

Rehabilitation actions for mangroves and swamp forests show concrete progress, with 1,575 hectares restored, equivalent to 42% of the midterm target. The full delivery of equipment to forestry companies and territorial actors—including heavy machinery, vehicles, tools, and a mobile laboratory—has significantly improved operational capacity and ensured continuity of restoration efforts. Although ecological results are still maturing, these interventions already demonstrate positive effects on hydrological connectivity and natural ecosystem recovery.

In parallel, the project has substantially strengthened its scientific and technological infrastructure. Four oceanographic stations have been installed, and five national laboratories have been equipped with specialized instruments, enhancing marine and coastal monitoring capacities. The installation of servers and solar-powered systems is also advancing, enabling the interconnection of monitoring stations with the Knowledge Management Platform to optimize environmental data collection and analysis. In water management, 75% progress has been achieved in the construction and rehabilitation of recharge wells, contributing to reduced saline intrusion over 16,329 hectares and improved water and agricultural security in coastal territories.

Product 2 has achieved significant progress in strengthening technical and institutional capacities. The training program implemented by FLACSO stands out, featuring 11 modules on climate adaptation and ecosystem-based management, as well as the establishment of fully equipped satellite classrooms across all seven intervention sites. To date, 133,000 people have been trained—representing 80% of the midterm target—with strong participation from communities, local authorities, and economic actors. However, it is recommended to introduce satisfaction and learning assessment mechanisms to better measure the practical application of acquired knowledge.

Meanwhile, the Knowledge Management Platform for Coastal Adaptation (KMPCA) is now 35% complete. Its architecture is already finished and will include an online learning module (MOOC) and a Monitoring System, which will provide climate information products to communities and strengthen early warning systems (EWS). These tools will integrate the data generated by the project with information from all monitoring stations and systems in 24 provinces. To date, there have been technical challenges in ensuring interoperability between these systems, as well as delays in their implementation.

Finally, the integration of the Ecosystem-Based Adaptation (EbA) approach into regulatory and planning frameworks is advancing through the establishment of a network of over 30 legal advisors and the development of a draft Cuban Technical Standard on EbA, currently under review. Work is also underway on a complementary standard on ecological flow guidelines to support sustainable water management in coastal zones. These institutional advances consolidate the project's long-term sustainability, ensuring that its outcomes are embedded in national and local policies and practices beyond the implementation period.

1.3 Interim Evaluation Rating and Achievement

Table 1. Rating scales

Results rating scale					
1	2	3	4	5	6
Highly Unsatisfactory (HU)	Unsatisfactory (U)	Moderately Unsatisfactory (MU)	Moderately Satisfactory (MS)	Satisfactory (S)	Highly Satisfactory (HS)

Sustainability rating scale			
1	2	3	4
Unlikely (U)	Moderately unlikely (MU)	Moderately likely (ML)	Likely (L)

Table 2. Interim Evaluation Rating and Achievement

Measure	Interm Evaluation Rating	Achievement Description
Project Strategy	N/A	The project is based on restoring critical ecosystems and enhancing the adaptive capacity of local communities by combining actions at the environmental, social, and governance levels. Its rationale stems from the need to protect and rehabilitate mangroves and reefs, while building technical and community capacities to reduce vulnerability to extreme climate events, coastal erosion, and the loss of ecosystem services. The project highlights the interrelation between ecological restoration and risk management, as well as the active participation of local governments and communities in decision-making and the planning of land and coastal resource use.

		Fieldwork confirmed that the strategic design of the intervention considered from the outset the integration of watershed systems with marine ecosystems. This was a pioneering strategy that focused on working with hydrographic basins that feed into and benefit reefs and sea grass beds, achieving integration between both ecosystems. Moreover, communities were involved from the very beginning in the project design, with environmental and social safeguards duly taken into account. Overall, the project's approach is considered appropriate, as it harmoniously integrates technical and social aspects.
Progress Towards Results	Objective Achievement Rating. Strengthen coastal resilience to climate change along 1,300 km of the southern coast by reducing the main vulnerability factors affecting ecosystems and 24 coastal communities 4. Moderately Satisfactory (MS)	At the time of this mid-term evaluation, there is evidence of increased resilience to climate change in coastal communities, mainly because of outcome 2, where the project has achieved high levels of citizen participation and ownership. Likewise, over the last year, the project has significantly increased mangrove rehabilitation and investment in water conveyance systems.
	Outcome 1: Rehabilitated coastal ecosystems for enhanced coping capacity to manage climate impacts. 4. Moderately Satisfactory (MS)	The Outcome focuses on the rehabilitation and restoration of coastal ecosystems, with an emphasis on the recovery of hydrological processes, the regeneration of mangroves, the improvement of freshwater drainage, and the reduction of saltwater intrusion. In general terms, the progress made up to the interim evaluation shows significant advances in technical planning, the execution of works and physical interventions, the provision of strategic equipment, institutional and community strengthening, and the development of capacities for monitoring and ecosystem management. Despite some delays mainly associated with logistical constraints (such as fuel supply) and the approval of technical studies by the GCF, the project has managed to consolidate results that will enable the targets to be met in the coming years.
	Outcome 2: Enhancing technical and institutional capacity for climate change adaptation in coastal communities, governments and economic sectors. 5.Satisfactory (S)	The progress made under Outcome 2 demonstrates a comprehensive strengthening of human, technical and institutional capacities for coastal adaptation. The training component has been the most dynamic, achieving massive participation and the consolidation of local educational infrastructure. The Knowledge Management Platform is a key innovation that, once fully operational, will facilitate the integration of scientific, community and early warning information, improving the resilience of coastal communities. For its part, the incorporation of ABE approaches into regulatory and planning frameworks represents a structural advance towards the sustainability of interventions, ensuring that the project's results are maintained beyond its implementation period. In summary, Outcome 2 reflects a high level of local ownership, inter-institutional cooperation and technical coherence.
Project Implementation and Adaptive	5.Satisfactory (S)	The project's adaptive management stands out for the strength of its multi-level governance structure and its demonstrated ability to adjust implementation in response to identified challenges. The Environmental Agency (AMA), in coordination with UNDP and national and local institutions, has ensured efficient execution in line with Green Climate Fund

Management		standards, strengthening monitoring, financial control, and community participation mechanisms. Notably, the National Steering Committee's decision to increase the frequency of its meetings from 2024 onwards aimed to accelerate adaptive solutions to address delays, alongside UNDP's continuous technical and administrative support in procurement, contracting, and compliance processes. Altogether, these actions reflect a proactive, flexible, and results-oriented management approach that supports a satisfactory rating in adaptive management.
Sustainability	3.Moderately Likely (ML)	The project's sustainability faces various financial, socio-economic, institutional, and environmental risks that could affect the continuity of its results. The main challenges include economic instability, budget cuts, population migration, shortages of energy and fuel, as well as exposure to extreme weather events. These factors may limit resource availability, the retention of technical staff, and operational capacity in the territories. However, the project is implementing mitigation strategies aimed at strengthening inter-institutional partnerships, promoting community participation, improving coordination among levels of government, and adopting measures to enhance environmental and energy resilience. Thanks to these adaptive actions, the viability of the achieved results is expected to be maintained, although with a level of risk that justifies the sustainability rating as "moderately likely."

1.4 Concise summary of conclusions

The *Mi Costa* project represents an ambitious and strategic initiative for the Republic of Cuba, aimed at strengthening climate resilience from the highest levels of government to coastal communities — the most affected by the impacts of climate change. Its relevance lies in its comprehensive approach, multisectoral participation, and the demonstrated commitment of national authorities, research institutes, and technical teams involved, whose scientific and professional standards are outstanding.

However, the project's implementation faces a complex operational context. In Cuba, limited access to basic inputs such as fuel, electricity, and connectivity imposes significant constraints on implementation. These limitations affect the operational capacity of the Project Management Unit, despite systematic efforts to anticipate and mitigate their effects.

Field missions require thorough planning and, even so, sometimes they must be cancelled due to lack of resources. Likewise, in the future intermittent electricity supply and connectivity could restrict the operation of meteorological, oceanographic, and hydrological stations, sensors, and monitoring equipment in general, reducing the efficiency of environmental monitoring.

Power outages also hinder the daily work of technical teams, especially in rural areas where the hours with power supply are fewer than those without. This situation forces professionals to reorganize their schedules, connecting during nighttime or early morning hours to maintain reporting and operational communication.

The training process was designed through a training of trainers approach, preparing individuals capable of replicating knowledge in their territories through in-person sessions. One of the main limitations of this process has been the lack of fuel for transporting trainers and participants to training sites, as well as the lack of electricity, which has prevented efficient use of capacity-building centers and classrooms. On the other hand, although the digitalization of training

activities adds value, its full potential will depend on the availability of power and internet access.

These difficulties, coupled with an initial delay in meeting the technical requirements of the GCF[2], it caused a delay in obtaining results during the first half of the project, mainly in Outcome 1, related to mangrove restoration, and in Outcome 2, regarding the implementation of the platform and the Monitoring System. This has affected the achievement of the expected midterm results, with only two indicators (those related to beneficiaries) having reached their targets for this period.

Despite these challenges, the level of commitment and the technical quality of the Project Management Unit team and the associated institutions are remarkable. There is strong engagement from the highest authorities, through all technical levels, down to the field operators. They all proudly consider themselves part of the *Mi Costa* team, and each of them gives their best to ensure that the project meets its objectives and the commitments made to the Green Climate Fund and UNDP. This commitment helps to mitigate the contextual difficulties mentioned above and sustain the progress of activities under adverse conditions.

At the local level, in provinces and municipalities, a similar level of engagement is observed among authorities, state-owned enterprises, community organizations, and the population in general. Children, youth, and adults actively participate in reforestation and environmental education activities, reflecting a growing awareness of the importance of climate change adaptation.

In addition, the multi-stakeholder coordination generated by the project stands out, creating synergies between academia, government actors, and international cooperation. In this regard, the support provided by the UNDP team to the organization of the Capacity-Building Program delivered by FLACSO was particularly noteworthy. This support made it possible to structure an orderly process for resource management and scheduling, enabling effective implementation with actors from the 24 municipalities.

The project has also generated positive impacts in terms of local employment, creating new job opportunities that strengthen social acceptance and the sense of ownership among beneficiary communities. Likewise, the investment in equipment financed by the Green Climate Fund (GCF) has helped reduce the technological gap, enhancing national capacity for data generation and early warning development.

If current conditions remain stable, *Mi Costa* is expected to achieve its final goals within the budget allocated to the intervention. However, a worsening of the contextual difficulties could require additional measures, including strengthened support from UNDP to ensure the continuity and sustainability of the achievements made.

[2] *The technical requirements were mainly associated with a risk assessment of the hydrological rehabilitation actions.*

1.5 Recommendations Summary Table

Findings	Recommendations	Responsible parties
Technical aspects		
1. A new methodology for studying the saline wedge has been developed and is in the final stages of approval. Although it has begun to be used, it has not been applied retroactively, which prevents temporal comparisons of the evolution of saltwater intrusion.	1. Retroactively apply the new saline wedge methodology, using historical data to establish temporal comparisons and evaluate trends in saline intrusion under different climatic and management conditions.	AMA and INRH
2. Multiple hydrometric stations and sensors (water level and velocity, rain-gauges, piezometers, and multi-parametric sensors) were deployed, strengthening the monitoring capacity. In addition, maintenance training was provided, and data is already being received by the INRH situation room. However, there are operational problems associated with data transmission and equipment maintenance, linked to limitations in fuel, connectivity, and resources.	2.1 Strengthen the maintenance and operation of the network of hydrometric stations, ensuring the supply of basic resources (fuel, materials, connectivity, and spare parts) and the technical adaptation of sensors to environmental conditions in Cuba. 2.2 Strengthen data transmission and storage protocols, promoting the use of alternative technologies in areas with coverage and energy limitations, such as radio frequency systems or autonomous solar energy.	AMA, INRH and INSMET
3.1 The activity dedicated to implementing the Monitoring System, the climate information products that will also contribute to improving early warning systems (EWS), does not yet have a defined operational design. Although the installation of stations provides relevant data, no clear approach has been established for translating this information into improvements. 3.2 Cross-cutting challenges persist that limit the sustainability of the system: technical failures of some sensors due to their unsuitability for local conditions; lack of mobile coverage and electricity supply; difficulty in maintaining the large number of stations.	3.1 Develop a pilot plan for impact-based forecasting, integrating hydrological, meteorological and vulnerability information, with the participation of INRH, INSMET and Civil Defense. This approach will enable technical data to be transformed into more useful and impact action-oriented alerts. 3.2 Formalize inter-institutional agreements and interoperability protocols for the exchange of information between technical entities and response systems, ensuring consistency between monitoring, forecasting and decision-making. 3.3 Ensure the institutional and financial sustainability of the system by defining clear responsibilities for the maintenance of the various components, recurring budget allocations and continuous training mechanisms for technical staff.	AMA and INSMET
4. The project faces financial risks associated with inflation and economic instability in the country, which limit the availability of resources to sustain	4. Allocate resources to study the increase in carbon storage linked to the restoration of coastal ecosystems, aligning efforts for potential incorporation into the	AMA and UNDP

planned activities and retain technical staff.	international carbon market and receiving compensation within the framework of blue carbon projects, thereby generating resources that will enable the sustainability of the *Mi Costa* project's actions.	
5. The Environmental Monitoring System (EMS) is a robust and innovative tool for linking environmental and socio-economic indicators, building a bridge between sociology and the environment. However, its operability still depends on the integration of data update protocols and institutional strengthening to ensure its maintenance and local use.	5. Consolidate the EMS as an independent operational module within the platform, ensuring its regular updating, interoperability with other national databases, and active participation of local communities in monitoring; considering the support of international experts in its design and implementation.	AMA and INSMET
6. The *Mi Costa* Project's digital platform combines three distinct dimensions: the training module (MOOC), the EMS, and the climate information products component. Although this structure promotes knowledge integration, the diversity of domains creates risks of technical and functional confusion by grouping very different objectives and audiences under the same environment.	6.1 Clearly define the architecture and governance of the platform, separating its three dimensions into distinct digital environments or domains (MOOC, EMS and climate information products), but maintaining their interoperability under common technical coordination. 6.2 With regard to the MOOC, it would be useful to measure the increase in the population's resilience to climate change because of the learning modules.	AMA, INSMET and UNDP
Aspects of sustainability		
7. There is an overload of functions in the project management unit, as well as a decline in specialized human capital at the country level, which could jeopardize the implementation and technical sustainability of the project.	7.1 It is suggested that an organizational review be carried out to redistribute responsibilities more equitably, strengthen technical teams in the territories, and establish transition mechanisms to ensure operational continuity in the event of personnel changes. If necessary, it is recommended that external experts be hired to strengthen the Management Unit. 7.2 In addition, it is recommended that mechanisms for documentation and knowledge transfer be established. This may include operating manuals, training programs and digital repositories that facilitate the technical continuity of the project; the UNDP could lead these activities. 7.3 Finally, it is suggested that exchanges be promoted with the provinces that have achieved the best results and progress in the context of the project, so that they can	AMA and UNDP

	lead processes at the national level that serve as a guide for other jurisdictions.	
8. A key issue is ensuring that project actions contribute sustainably to strengthening the livelihoods of the population. It is important that, towards the final stage, tools and capacities be consolidated to generate lasting economic and social opportunities, thus guaranteeing the continuity of the results achieved and the well-being of the participating communities.	8.1. Maintain and strengthen the link between project actions and territorial development plans. Through these plans, priority should be given to sustainable productive activities such as ecotourism, agriculture, and responsible fishing, capitalizing on the environmental benefits being developed by the project to generate sustainable income and jobs over time. In this regard, special emphasis should be placed on women and young people in order to safeguard the benefits provided by the project in relation to gender and generational perspectives. 8.2 Promote the installation of autonomous solar photovoltaic systems. These can be used for weather stations and training spaces, but also for nurseries. This will facilitate the continuity of environmental monitoring and technical training, as well as the continuity of production and income generation through nurseries.	AMA and local governments
Project management aspects and results		
9. National context challenges project implementation	It is recommended to incorporate flexible mechanisms for project implementation that allow for adjustments to timelines, priorities, and implementation modalities in response to changes in the national context. This includes: 9.1 Increasing continuous monitoring of project actions and results to enable timely and well-informed decision-making. This implies holding Project Board meetings every two months in order to: i) identify alternative scenarios, ii) establish response protocols for crisis situations, and iii) assess the relevance of reducing the number of planned activities—either in quantity or scope—based on criteria of impact, efficiency, and relevance. 9.2 At some point, the Project Board should consider prioritizing certain provinces over others, with the aim of concentrating human and financial resources to fully	AMA and UNDP

	achieve all project goals in two or three provinces that could serve as models for the rest. To do so, the project's scope in some provinces would need to be reduced, limiting the range of activities implemented in those areas.	
10. Currently, the methodology for calculating beneficiaries does not take into account the complex demographic situation in Cuba, where there is significant migration both internally and to other countries.	10. It is suggested that the methodology for counting beneficiaries be adjusted to take into account the limitations of access to updated global figures and high population mobility. It is therefore recommended that the changes to the methodology set out in the document: 'Proposal for Updating the Methodology for Calculating Beneficiaries', drawn up by the Management Unit, be incorporated.	AMA, FLACSO and UNDP
11. At the time of the interim evaluation, the project has not demonstrated significant progress in the construction of the Monitoring System, which includes community monitoring.	11. It is recommended that a roadmap be designed and that the process of implementing the Mi Costa project monitoring system be initiated as soon as possible. The possibility of obtaining direct technical support from the UNDP office in Cuba could be evaluated, hiring experts with UNDP resources.	AMA and UNDP

2. Introduction

2.1 Purpose and objectives of the interim evaluation

The Interim Evaluation (IE) assesses the implementation of the project and progress towards achieving the objectives and results as specified in the UNDP Project Document and the Funded Activity Agreement (FAA) by the GCF, as well as evaluating the first signs of success or failure of the project, with the aim of identifying the changes needed to put the project on track to achieve the expected results.

The IE also reviewed the project strategy and its risks to sustainability. The evaluation exercise was conducted in accordance with the evaluation criteria of the GCF Evaluation Terms of Reference (GCF/B.06/06) and the GCF Evaluation Policy, together with guidance provided by the Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD).

2.1.1 Project design/formulation

The project design analysis seeks to determine whether the strategy has been effective in achieving the expected results and, if not, to propose changes that may be useful for future formulation processes.

To this end, the evaluators analyzed the project document (PRODOC) in detail, looking at whether lessons learned from other initiatives had been effectively incorporated, whether the project was aligned with national development priorities and the country's priorities, whether possible externalities, environmental and social risks, decision-making processes during the project design phase, and the gender and human rights approach during the formulation phase had been taken into account. At the same time, the evaluation team conducted a comprehensive analysis of the Results Framework or Logical Framework.

2.1.2 Project implementation

The evaluators analyzed the implementation of the project and its adaptive management with the aim of identifying challenges and proposing additional measures, specifically in the following areas:

a. Management mechanisms;

b. Stakeholder participation;

c. Financing and co-financing;

d. Monitoring and evaluation systems at project level;

e. Risk management;

2.1.3 Project results and impacts

In addition to assessing the project's progress in relation to its objectives and expected results, the report includes an evaluation of the results measured according to broader aspects, such as: relevance, effectiveness, efficiency, national ownership, gender equity and other cross-cutting issues, sustainability, catalytic role and progress towards impact.

The IE assesses the degree of progress towards the expected results and the extent to which their achievement depends on the delivery of project outputs, as well as other factors such as project design, links to other activities, the scope and materialization of co-financing, stakeholder involvement, etc.

With regard to outputs, the evaluation report assesses the extent to which the expected key outputs were delivered and identified and assess the factors that influenced their delivery.

2.2 Methodology

The Mid-Term Evaluation adopted a mixed-methods approach, combining qualitative and quantitative techniques, with the objective of rigorously addressing the evaluation questions defined in the evaluation matrix and fulfilling the purposes established in the Terms of Reference of the Green Climate Fund (GCF) and UNDP.

The methodological approach is grounded in the project's Theory of Change (ToC), which served as the main analytical framework to examine the causal relationships between the interventions implemented and the progress observed toward expected results at national and territorial levels. Attention was given not only to what results were achieved, but also to why they occurred, identifying enabling factors, constraints, and key implementation processes that influenced project performance.

The selection of methods was guided by criteria of relevance, feasibility, and utility, considering constraints related to time, resources, and the national operational context. This approach ensured the generation of sufficient and reliable evidence to assess relevance, effectiveness, efficiency, sustainability, national ownership, gender equality, and other cross-cutting dimensions, including the Leave No One Behind (LNOB) principle and the inclusion of persons with disabilities.

Performance Standards

Project performance was assessed using rating scales aligned with UNDP and GCF evaluation standards, as well as indicators defined in the project results framework. These scales enabled a systematic and transparent assessment of progress relative to expected mid-term results.

Stakeholder Engagement

Stakeholder engagement constituted a core component of methodological design. National institutions, territorial authorities, technical teams, community representatives, and strategic partners were actively involved, strengthening the credibility of findings and allowing triangulation between institutional perspectives, technical evidence, and community-level experiences.

Ethical Considerations

The evaluation was conducted in accordance with the UNEG Ethical Guidelines, ensuring confidentiality, informed consent, and protection of the rights of all participants. Information collected was treated anonymously and used exclusively for evaluation purposes.

Evaluation Team

The evaluation team was composed of international and national consultants with expertise in climate change adaptation, environmental management, evaluation of multilateral climate-

funded projects, and social analysis, ensuring an appropriate balance of technical skills, local contextual knowledge, and gender perspectives.

Methodological Limitations

Methodological limitations were mainly related to the operational context, including fuel shortages, connectivity constraints, and availability of key informants. These limitations were mitigated through systematic triangulation of data sources, flexibility in fieldwork planning, and complementary use of documentary review and interviews.

2.2.1 Assessment Criteria and Questions

The IE was based on the scope of the project's implementation, identifying the relevance, effectiveness, efficiency, sustainability, gender equality and women's empowerment, and impact of the actions. It also aimed to identify good practices, lessons learned, and strategies used during the implementation of activities, as well as potential future impacts.

Accordingly, the IE involved all beneficiary stakeholders, as well as those responsible for the execution and implementation of the project as indicated in the PRODOC. Its approach was mixed, encompassing both a design evaluation and a results evaluation (including overall performance and achievement of targets).

The evaluation was conducted with a results-based approach and provides information grounded in credible and reliable evidence. Annex 6.1 presents the evaluation matrix, which includes the key criteria and questions.

In summary, the criteria and guiding questions under which the IE will be conducted—in accordance with the GCF IEU TOR (GCF/B.06/06) and the GCF Evaluation Policy, along with the guidelines provided by the Organization for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC)—are as follows:

- Implementation and adaptive management: aims to identify challenges and propose additional measures to support a more efficient and effective implementation. The following aspects of project implementation and adaptive management will be assessed: management arrangements, work planning, financing and co-financing, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications.
- Risks to sustainability: aims to assess the likelihood that the benefits will continue after project completion. The sustainability assessment at the Midterm Evaluation stage considers risks that may affect the continuity of project results. The IE must validate the risks identified in the Project Document, Annual Project Reports, and the ATLAS Risk Management Module, as well as verify whether the risk ratings applied are appropriate and up to date.
- Relevance, effectiveness, and efficiency: aims to assess the pertinence of the selection, implementation, and achievement of the activities and expected results (outputs, outcomes, and impacts) established in the project document's results framework and the FAA.
- Coherence in the provision of climate finance with other multilateral entities: analyses how GCF financing is additional and helps leverage other investments, reduce risks, and attract further climate investments.
- Gender equity: ensures the integration of an understanding of how climate change impacts differ by gender, the role of behavioral and gender changes in generating paradigm shifts, and the role women play in responding to climate change challenges—both as agents of change and in terms of accountability and decision-making.

• National ownership of projects and programs: examines the degree of emphasis on post-project sustainability through national ownership, ensuring the relevance of GCF investment in relation to countries' needs and priorities, including the roles they play in projects and programs.

• Innovative character in the results areas: focuses on identifying innovations (proofs of concept, scaling effects, new financing models, technologies, etc.) and the extent to which project interventions can lead to a paradigm shift toward low-emission, climate-resilient development pathways.

• Replicability and scalability: analyses the extent to which activities can be expanded to other areas within the country or replicated in other countries (this criterion, considered in document GCF/B.05/03 in the context of performance measurement, could also be incorporated into independent evaluations).

• Unexpected results, both positive and negative: identifies challenges and lessons—positive and negative alike—that can be used by all parties (governments, stakeholders, civil society, accredited entities, the GCF, and others) to inform future implementation and investment decision-making.

2.2.2 Methods for collecting information

Based on the particular characteristics of the object of evaluation, a mixed research methodology was selected, combining the collection and analysis of qualitative and quantitative data, with a focus on practical utility for the end users of the evaluation.

This methodology is divided into the following techniques, whose combination provides the evaluation team with the necessary elements to obtain data that answer the questions in the evaluation matrix and allow for evidence-based conclusions on the achievements of the evaluated project:

Data Sources

Data sources included an extensive review of key project documents (PRODOC, APRs, technical reports, baseline studies, and relevant policy and regulatory frameworks), as well as interviews and focus groups with institutional stakeholders, technical staff, territorial authorities, and project beneficiaries. Sources were selected based on their relevance to the evaluation questions and their contribution to validating reported results.

Sample and Sampling Frame

A purposive sampling approach was applied, selecting key informants representative of national, provincial, and municipal implementation levels, as well as diverse community groups differentiated by gender, age, and socio-economic roles. While not statistically representative, the sample provides a robust basis for understanding implementation trends, processes, and outcomes.

Data Collection Procedures and Instruments

Semi-structured interviews, focus groups, field observation, and document review were employed. Instruments were designed to ensure consistency, relevance, and verifiability of information and were adapted according to the profile and role of each informant.

- Documentary information analysis: a thorough review and analysis of the main documents related to the project was carried out, examining them from multiple perspectives, including the quality and relevance of the information provided, the identification of gaps, as well as the coherence and consistency among the different documents analyzed. Annex 6.3 includes the control table of the information provided by the project.
- Semi-structured interviews: key individuals from each organization/institution, authorities, and representatives of partner organizations, local bodies, and project managers were interviewed. A semi-structured guide provided flexibility to obtain qualitative information on opinions and perspectives regarding the program, its structure, implementation, and achievements.
- Field interviews were conducted with the Management Unit and UNDP, as well as targeted interviews with ministerial authorities, local governments, beneficiaries, and communities. A general framework guided each interview, which was adapted according to the profile of the interviewee.
- Focus groups: project beneficiaries were invited to participate in a group discussion to analyze the project in a structured dialogue space where they could share in depth their experiences, perceptions, and opinions on various aspects related to implementation, achieved results, and perceived impact.
- This technique encourages the generation of diverse perspectives and contrasting opinions, enriching the understanding of the project's effectiveness. It also helps identify aspects not initially considered, as well as validate or contrast findings obtained through other data collection methods.
- Preliminary observation: observations made during field mission visits provided additional information that allowed the evaluation team to learn about the context in which the events and processes under evaluation routinely and/or exceptionally take place. Meetings with the groups included in the agenda enabled the observation of motivational aspects, commitments, and specific experiences in the use of methodologies and participation. While not generalizable, these aspects are important to assess the usefulness of certain outputs. Given the time available, a simple and flexible observation guide was proposed, including aspects such as spatial context, characteristics and behavior of interviewees, interaction and relational dynamics, and observed versus spoken content.

Data Analysis

Data analysis combined qualitative content analysis with descriptive analysis of quantitative indicators. Methodological and source triangulation were systematically applied to validate findings, contrast narratives with documentary evidence, and reduce potential bias.

- Processing and systematization: during and after data collection, the information was analyzed both qualitatively and quantitatively. Based on their correspondence, data were organized and structured with qualitative labels such as ranges or categories, and in other cases, a systematic content analysis was performed. Methodological triangulation was also used—both in terms of information sources and qualitative-quantitative perspectives.

- Feedback and validation workshops: upon completion of the second deliverable, a debriefing session will be held with the Evaluation Reference Group and other stakeholders, during which the initial findings will be presented, along with insights that emerged during fieldwork.
- Triangulation of sources: by systematically contrasting the information recorded through observation, interviews, focus groups and documentary analysis with the original design indicators and performance data. Specifically, the observation allowed the evaluation team to capture the gap between official speeches and daily practices.
- Methodological triangulation: integrating quantitative evidence of indicators with qualitative narratives arising in both formal and informal contexts. These latter spaces were particularly valuable for collecting information in more comfortable conditions for community members, especially older people.

The effectiveness of this strategy was strengthened by the participation of a national evaluator in the team, who helped to contextualize the information and maintain the necessary balance between commitment and methodological detachment. Triangulation was selected as a strategy developed in parallel with the investigative process. This approach ensures internal validity during data production and analysis, unlike the peer review that operates ex-post. The implementation of this approach documents credibility in the mitigation of biases and ensures the scientific integrity and practical usefulness of the conclusions and recommendations, ensuring that they reflect the project's complexities, contradictions and plurality of voices.

To maintain epistemological vigilance, validation cycles were established with the National Steering Committee and the monitoring team to ensure transparency and traceability of evaluative judgments.

Complementarily, the evaluation is framed within UNDP's institutional QA system, supported by the Quality Assurance Report 2023 (Procedure ASM-03347), which rated the project's management as Satisfactory. This report serves as a reference framework for the present evaluation, as it documents risk review practices, the adequacy of monitoring and evaluation systems, alignment with UNDP's Strategic Plan, and compliance with Green Climate Fund standards. In line with this framework, the evaluation methodology maintained vigilance over the quality and reliability of the data throughout all phases, enhancing the utility of its results.

Data Limitations

Main data limitations related to access to up-to-date information, logistical constraints affecting additional interviews, and gaps in disaggregated quantitative data. These limitations were addressed through the use of multiple sources and cross-validation of findings.

- Independent quality assurance (QA):

This interim evaluation incorporates a Quality Assurance (QA) process designed to ensure the credibility, coherence, and methodological rigor of the findings. This process includes internal and external reviews of technical products, feedback mechanisms between the evaluation team, UNDP, and the Project Management Unit, as well as reviews to validate instruments, analytical consistency, and source triangulation.

- Methodological Challenges: Controlling Bias

It should be recognized that one of the main methodological challenges of this evaluation was the control of biases inherent to research with high institutional and community involvement. Two critical types were identified:

The first was the bias of social desirability in institutional actors, associated with commitment and political capital invested in the project by key national institutions, the management unit and territorial directorates, what it predisposes towards statements sometimes not completely aligned with the actual results; national institutions and management units may overstate results due to political investment.

The second was the bias of complacency in the communities, manifested in the presence of external evaluators, the management unit itself, or territorial leaders, which limited the spontaneity and veracity of the testimonies; in some cases, the participants moderate their statements in the presence of evaluators or authority figures. A concrete example of this dilemma was presented during the fieldwork at Vivero Forestal Las Taironas (Pinar del Río), where the simultaneous convergence of community actors, stakeholders and management unit initially inhibited the group's discourse. The importance of segmenting groups to create informal conversation spaces was crucial in protecting data validity.

2.3 Ethics

The interviews and information management were carried out in accordance with the Guidelines for Conducting Final Evaluations of Projects Supported by UNDP and the Code of Conduct for Evaluation in the UN System of the United Nations Evaluation Group (UNEG), under the principles of independence, impartiality, conflict of interest, honesty and integrity, competence, accountability, protection and well-being of individuals and communities, confidentiality and do-no-harm, accuracy, thoroughness, reliability, and transparency.

This meant that each interview and focus group began with a clear explanation of the evaluation's purpose, the use of information collected, and the voluntary nature of participation. No se recopilaron datos sensibles que pudieran comprometer la seguridad o la integridad de los participantes.

2.4 Limitations of the evaluation

During the course of the evaluation, several limitations arose which, although they did not prevent the achievement of the planned results, did pose challenges to the process. Among them, UNDP recommended not conducting online interviews prior to the formal start of the in-person mission. This measure follows a common practice in project evaluations in the country, aimed at initiating the evaluation process in a structured manner through in-person meetings between evaluators and project managers. While this decision initially limited the possibility of collecting preliminary information—beyond the review of documents provided—that could have facilitated an early understanding of the project, these limitations were overcome during the fieldwork, during which interviews were conducted with the vast majority of institutions involved in the project.

Additionally, certain logistical and scheduling constraints were encountered, as some adjustments proposed by the evaluation team to the work schedule could not be implemented, despite the efforts made by the Management Unit. For example, it was not possible to hold a

requested meeting with the IRIS Foundation (a subcontracted institution by AMA responsible for designing the Integrated Monitoring System for ecosystem-based adaptation), since it was not originally included in the work schedule and staff were unavailable on the specified date.

However, it is worth noting that in other cases, when additional meetings were requested, the institutional response was very prompt and efficient, facilitating the coordination of unplanned interviews and visits.

3 Project description and general context

3.1 Background and context

The project *Coastal Resilience to Climate Change in Cuba through Ecosystem-Based Adaptation – MI COSTA* (PIMS No. 5994) is an eight-year initiative aimed at supporting Cuba in strengthening its resilience to climate change (CC).

The project's objective is to "strengthen coastal resilience to climate change along 1,300 km of the southern coast by reducing the main vulnerability factors affecting ecosystems and 24 coastal communities."

It is implemented by the United Nations Development Program (UNDP) and executed by the Ministry of Science, Technology and Environment (CITMA) through the Environment Agency (AMA).

Initial Project Stakeholders

Financier:

- Green Climate Fund (GCF)

Co-financiers:

- Ministry of Agriculture (MINAG)
- Ministry of Science, Technology and Environment (CITMA)
- National Institute of Water Resources (INRH)

Collaborators:

- Local governments
- Latin American Faculty of Social Sciences (FLACSO) – Cuba Chapter
- Institute of Ecology and Systematics (IES)
- Institute of Tropical Geography (IGT)
- Cuban Institute of Meteorology (INSMET)
- Environmental Studies Centers (CEA)
- Municipal University Centers (CUM)
- National Statistics System (SNE)

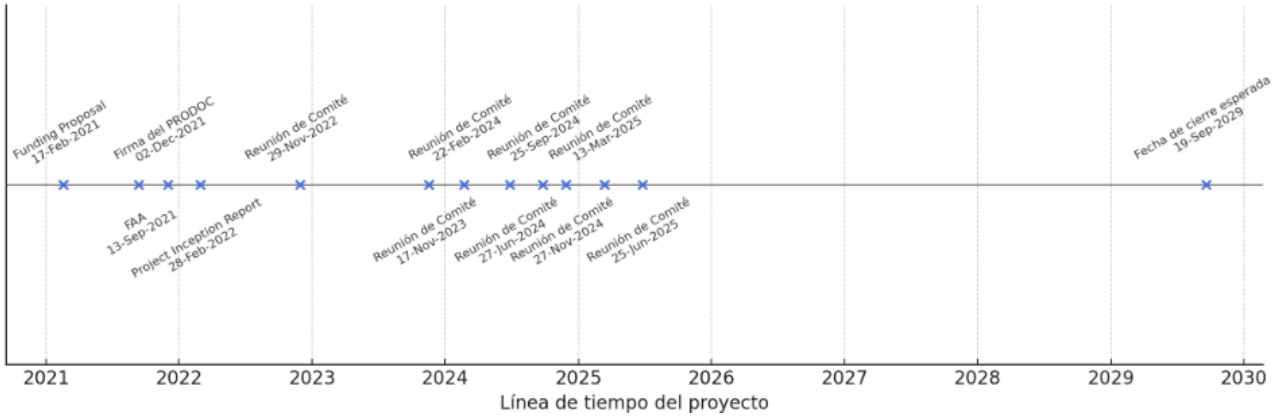
- Institute of Marine Sciences (ICIMAR)

Beneficiaries:

- Coastal communities

The project began on 13 September 2021 and is expected to be completed in September 2029. It is currently halfway through its implementation period.

Figure 1. Administrative milestones of the project



Source: Prepared internally.

Based on the PRODOC, the project financing plan consists of GCF financing for USD 23,927,294[3]; as well as co-financing of USD 20,371,935, bringing the total project budget to USD 44,299,229.

3.1.1 Summary of global environmental issues

The project responds to Cuba's coastal adaptation needs in the face of slow-onset events, including relative sea-level rise and associated flooding resulting from extreme weather phenomena (hurricanes and extra-tropical storms), as well as drought conditions and problems derived from saline intrusion into aquifers and coastal soils, which affect water availability and quality in coastal areas. Cuba's geographical characteristics and the state of conservation of its marine and coastal ecosystems represent an optimal opportunity for large-scale ecosystem-based adaptation (EbA), an approach promoted through the State Plan for Climate Change "Tarea Vida." This project will provide direct support and establish a baseline for the implementation of "Tarea Vida."

The project will increase adaptive capacity through the comprehensive rehabilitation of coastal and marine landscapes, their interconnected ecosystems, and their hydrology. This will be achieved by restoring the functions and linkages of mangrove and swamp forest ecosystems and

[3] *The GCF financing includes contingencies totalling USD 631,849, of which the project has received USD 103,533.14.*

reducing anthropogenic pressures on marine-coastal ecosystems, thereby strengthening the services provided by integrated coastal ecosystems. It will also enhance the adaptive capacities of coastal governments and communities by strengthening their skills to use and understand the benefits of EbA, improving information flow among stakeholders, and reinforcing the regulatory framework for land-use management in coastal zones.

Cuba's southern coast, in two sections, has been selected due to its high vulnerability to climate change, in the form of coastal flooding and saline intrusion. In total, 1,300 km of coastline, 24 communities, and 1,324,114 people will directly benefit from the project's implementation.

3.1.2 Barriers Identified

The project seeks to generate a paradigm shift in the climate resilience of Cuba's coastal areas by promoting the large-scale, integrated, and sustained application of an ecosystem-based adaptation (EbA) approach, while strengthening the capacities and awareness of direct beneficiaries and government institutions at all levels to ensure greater sustainability.

Taking the above into account, the key barriers identified during the project design are:

1. Limited knowledge among vulnerable communities about the drivers/threats of climate change and available adaptation options.
2. Limited experience in the effective and sustainable implementation of EbA measures.
3. Physical barriers that reduce the response capacity of natural ecosystems.
4. Inadequate intersectoral mechanisms for incorporating the adaptation of coastal communities into policies and regulations.
5. Limited access to and availability of financing for technical teams to mobilize large-scale adaptation investments, as well as insufficient incorporation of project results into public policies.

3.1.3 Proposed intervention

The overall objective of the project is to "strengthen coastal resilience to climate change along 1,300 km of the southern coast by reducing the main vulnerability factors affecting ecosystems and 24 coastal communities."

To achieve this, two main outputs are proposed:

Output 1: "Coastal ecosystems rehabilitated to enhance adaptive capacity and manage climate impacts."

This component focuses on working with local and national stakeholders to rehabilitate ecosystems along 1,300 km of Cuba's vulnerable southern coast through an integrated coastal ecosystem approach. The goal is to increase the protective capacity of vulnerable communities and populations in the project's target areas, because of EbA actions aimed at restoring local hydrology and reducing local pressures.

Output 2: "Increased technical and institutional capacity for climate change adaptation among coastal communities, governments, and economic sectors."

This component focuses on working with communities, local governments, and economic sectors to strengthen local adaptive capacity through technical training, the systematization of information via a knowledge management platform, and the delivery of informational products that enable communities to better identify and prioritize adaptation options. This includes the integration of EbA measures into local governance planning frameworks and budgets, as envisioned in Cuba's 2019 Constitution, which grants greater responsibility to local actors in development planning and finance.

Table 1. Products and related activities.

Product	Description	Activity	Description
1	Coastal ecosystems rehabilitated to improve resilience and manage climate impacts	1.1	Assess and restore coastal wetland functions at target sites by re-establishing hydrological processes.
		1.2	Rehabilitate mangroves and swamp forests in target sites through natural and assisted regeneration for greater coastal protection.
		1.3	Record and evaluate the natural regeneration of coastal and marine ecosystems and their protective functions, based on the conditions resulting from restored coastal wetlands.
		1.4	Improve water conveyance systems throughout river basins to restore freshwater drainage in coastal ecosystems and aquifers, and reduce and monitor saline intrusion at target sites.
2	Enhancing technical and institutional capacity for climate change adaptation in coastal communities, governments and economic sectors	2.1	Develop a program to strengthen technical capacities in climate change adaptation for coastal communities and local actors (government and economic sectors) that enables the implementation of adaptation actions.
		2.2	Integrate information derived from the project (technical and community), information from early warning systems, and national data sets into a Knowledge Management Platform.
		2.3	Incorporate Ecosystem-based Adaptation (EbA) approaches into policy and planning frameworks at the territorial and national levels to ensure the long-term sustainability of EbA conditions and investments in coastal areas.

4. Findings

4.1 Project Strategy

4.1.1 Project Design

The project is based on restoring critical ecosystems and enhancing the adaptive capacity of local communities by combining actions at the environmental, social, and governance levels. Its rationale stems from the need to protect and rehabilitate mangroves and reefs, while building technical and community capacities to reduce vulnerability to extreme climate events, coastal

erosion, and the loss of ecosystem services. The project highlights the interrelation between ecological restoration and risk management, as well as the active participation of local governments and communities in decision-making and the planning of land and coastal resource use.

Fieldwork confirmed that the strategic design of the intervention considered from the outset the integration of watershed systems with marine ecosystems. This was a pioneering strategy that focused on working with hydrographic basins that feed into and benefit reefs and seagrass beds—achieving integration between both ecosystems. Moreover, communities were involved from the very beginning in the project design, with environmental and social safeguards duly taken into account.

Overall, the project's approach is considered appropriate, as it harmoniously integrates technical and social aspects. This enables technically sound implementation based on scientific knowledge and the mobilization of highly qualified professionals, while at the same time fostering awareness and ownership among the local population, who feel engaged with and identified with the project.

4.1.2 Theory of Change

For the analysis of the project's Theory of Change (ToC), the relationship between outputs, components, and the achievement of the Overall Objective was examined. In this regard, it is evident that the project seeks to strengthen coastal resilience to climate change by working along 1,300 km of the southern coast and engaging 24 coastal communities.
The components designed to achieve the Overall Objective (O.O.), as illustrated in Figure 2, align with the intervention's purpose and aim to generate outputs that directly contribute to the project's goal.
Both Output 1 and Output 2 contribute directly to the Overall Objective. Likewise, it is observed that the proposed activities are consistent with the expected outputs.

Significant barriers have been identified among the critical factors for the success of the project[4] such as limited practical experience in restoration, lack of institutional coordination, and restricted availability of funding. The Theory of Change did not take into account the threat posed by the worsening economic conditions in Cuba (only environmental and social conditions are mentioned), which have worsened over the years and, if they continue to do so, would compromise the normal performance of the implementation. Despite these challenges, the project assumes that the combination of technical knowledge, institutional commitment and community empowerment will enable the implementation of sustainable solutions.
Furthermore, the theory of change recognizes that long-term results depend on the integration of ecosystem-based adaptation (EBA) with local planning strategies and public policies, ensuring that interventions not only reduce immediate risks but also strengthen structural and social resilience to climate change in Cuba's coastal areas.

In conclusion, the project's ToC is considered adequate and consistent with international commitments on climate change and current national legislation.

[4]*The current status of the assumptions for each product is analysed in the efficiency section.*

Figure 2: Project Theory of Change

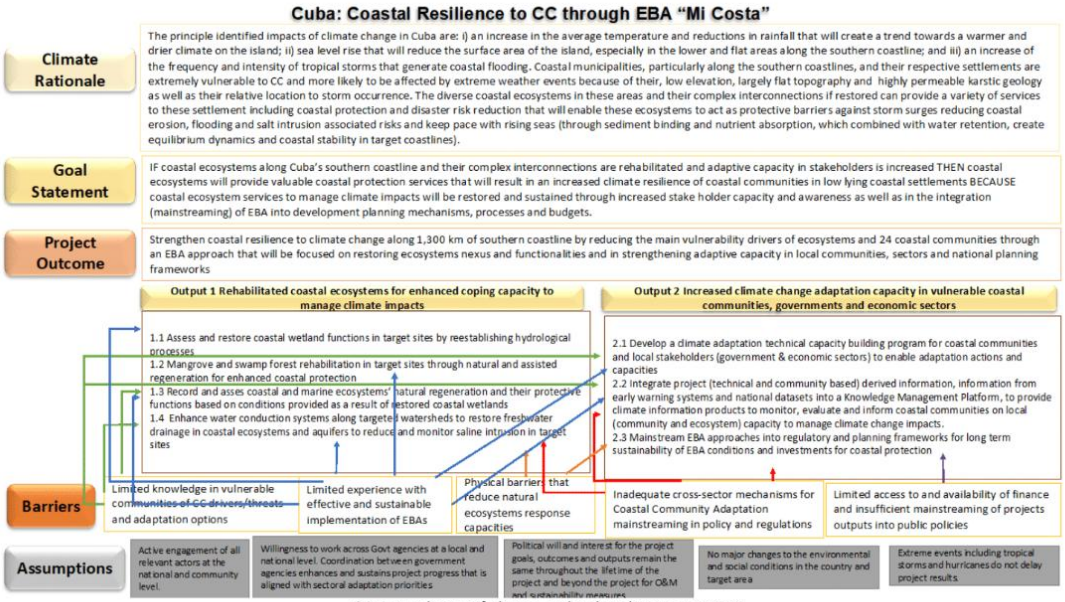


Figure 2 - Theory of Change and its baseline assumptions

4.2 Relevance

The project contributes to the 2030 National Economic Development Plan (which is being extended to 2040) and the 2020-2024 Framework for Cooperation with the United Nations for Sustainable Development[5] (extended 2025) y 2026-2030[6] in the area of risk management.

Specifically, it contributes to the following results: i) "National and local governments and institutions implement sustainable, equitable, and inclusive territorial development strategies within the framework of the decentralization process (Effect 1), under the strategic priority of Effective Governance"; ii) "Strategic sectors of national priority achieve higher levels of economic productivity and human potential utilization through diversification, technological modernization, and innovation"; iii) "Incorporation of environmental, climate, and risk considerations into national and territorial socioeconomic development strategies"; and iv) "Improved accessibility and quality of public services and social protection and care systems, taking into account demographic dynamics, with an emphasis on vulnerable groups and a focus on gender and human rights," as outlined in the 2020–2024 Cooperation Framework and aligned with SDGs 5, 6, 11, 13, 14, 15, and 17 of the 2030 Agenda.

The project is aligned with national priorities on climate change adaptation and mitigation. The actions promoted by the government, consistent with previous initiatives, seek to strengthen the resilience of the coastal system in order to minimize the impacts of accelerated sea-level rise, increasing temperatures, and the growing damage caused by intense hurricanes.

There is a clear complementarity between the *Mi Costa* project and the Climate Change State Plan "Tarea Vida," considered one of the country's main national strategies for adaptation and mitigation to climate change. The State Plan is structured around five strategic actions and eleven

[5] *https://cuba.un.org/es/94634-marco-de-cooperaci%C3%B3n-del-snu-en-cuba-2020-2024*
[6] *https://cuba.un.org/es/271982-inicia-ruta-hacia-el-nuevo-marco-de-cooperaci%C3%B3n-de-onu-cuba-con-el-pa%C3%ADs*

tasks, also identifying areas of high vulnerability to be prioritized. Its five actions address challenges such as salinization, coastal flooding, sea-level rise, and reforestation. This broad range of issues constitutes the foundation of the *Mi Costa* project, which is articulated as a direct response to the eleven tasks of "Tarea Vida." The plan's first task is a clear example of this alignment:

"Task 1. Identify and undertake comprehensive and progressive climate change adaptation actions and projects needed to reduce existing vulnerability in the 15 areas identified as priorities in the Annex, considering, in order of action, the threatened population, their physical and food security, and tourism development."[7]

In this way, the *Mi Costa* project serves as a support and strengthening platform for the "Tarea Vida" Plan, contributing to its effective implementation in the prioritized territories (as declared in the Annexes of the plan itself). Given the strategic importance of this plan, its execution is considered a priority of the Cuban State and enjoys high-level political backing, being recognized as a presidential mandate.

A key element that connects "Tarea Vida" and *Mi Costa*—and distinguishes them from previous plans—is the incorporation of the territorial dimension. Mi Costa is characterized by applying this principle through citizen participation directly anchored in the territory to address local challenges.

Furthermore, the institutional structure of projects associated with the Tarea Vida Plan includes coordination among international, national, and local initiatives. In particular, each international project (such as Mi Costa) is complemented by one or more national, sectorial, or territorial projects designed to ensure its sustainability and operational coherence. This integration allows, among other things, for management and implementation costs—including project staff salaries for international initiatives—to be covered under national projects, thereby ensuring greater efficiency in resource use and alignment with national sustainable development priorities.

The project provides direct support for the implementation of Tarea Vida, with Component 1 activities specifically aligned with the following tasks: 1 — "Undertake climate change adaptation actions…"; 5 — "Reforestation and recovery of the most affected forests and mangroves"; 9 — "Strengthen the monitoring and early warning system…" and; 11 — "Manage and utilize international financial resources to implement investments and projects."

On the other hand, the approval in 2022 of the Environmental and Natural Resources System Law (Law No. 150) represents a milestone in updating the country's environmental legal framework. This law integrates and modernizes the principles, objectives, and mechanisms of environmental management, explicitly reflecting national priorities in conservation, sustainable use of natural resources, and climate change adaptation. In this regard, the guidelines established in Law No. 150 are closely aligned with the approaches and objectives promoted by the Mi Costa project—particularly in strengthening integrated coastal management, ecosystem restoration, and the reduction of vulnerabilities to climate change impacts.

It is also worth noting that Law No. 150 has achieved wide dissemination and recognition among citizens, which distinguishes it from other sectorial regulations. Its formulation and approval process involved broad consultations and participatory mechanisms, fostering social ownership and a clear understanding of its scope among various local actors. This level of awareness and

[7] *http://financiamientoclimatico.cubaenergia.cu/index.php/descargas/8-folleto-tarea-vida/file*

social acceptance represents a favorable condition for the implementation of projects like Mi Costa, as it facilitates the alignment between technical actions and community needs or expectations. Consequently, the existence of an updated and socially legitimized legal framework reinforces the relevance, feasibility, and sustainability of the interventions promoted under the project. In this sense, Mi Costa contributes to strengthening Cuba's environmental regulatory culture, while also making a substantive contribution to the new environmental and climate change legislative proposals currently under development in the country.

Lastly, the Mi Costa project is strategically aligned with other initiatives previously implemented by UNDP in Cuba aimed at strengthening coastal resilience and promoting ecosystem-based adaptation.

Among these, the project '*Reducing vulnerability to coastal flooding through ecosystem-based adaptation in the southern provinces of Artemisa and Mayabeque*' stands out[8], funded by the Adaptation Fund and implemented by the UNDP together with the Ministry of Science, Technology and Environment (CITMA). This intervention, also known as Manglar Vivo, developed pioneering experiences in mangrove and wetland restoration, as well as in the integration of local communities in coastal management and conservation actions.

Both experiences constitute direct antecedents of Mi Costa, having generated methodologies, technical capacities and management tools that today guide the actions underway. In this context, the Mi Costa project team benefits from the lessons learned and good practices derived from these previous projects, especially in terms of ecosystem restoration, inter-institutional coordination and community participation.

4.3 Effectiveness and efficiency

The project experienced implementation delays during the second and third years due to setbacks in meeting the conditions established in the FAA.

One of the conditions for the second disbursement was to update the methodology for calculating beneficiaries, which suffered a three-month delay in being submitted to the GCF. The methodology was approved in April 2023, resulting in an eleven (11)-month delay in receiving the second disbursement (August 2023).

On the other hand, the hydrological rehabilitation actions were planned to begin at the start of the second year. However, the GCF had established as a condition for starting these actions—and for releasing the third disbursement (at the beginning of the second year)—the completion of a risk assessment for the hydrological rehabilitation activities, which would define in detail the rehabilitation measures for each site. Due to its complexity and the fact that it was the first time such a study had been carried out in Cuba, it required hiring external experts outside the AMA. This process lasted 18 months until the final review by UNDP and submission for GCF approval in June 2024, causing delays in the start of the hydrological rehabilitation activities.

[8] *https://www.tareavidacuba.cu/manglar-vivo*

These delays, combined with logistical issues and the challenges associated with the Cuban context, have affected the achievement of the expected mid-term results of the project, with only two indicators (those related to beneficiaries) having reached their targets for this period.

Nonetheless, both the Project Management Unit and institutional partners are making significant efforts to achieve most of the objectives established in the design documents. This allows concluding that, by adjusting the implementation timeline and focusing on the activities with the greatest impact (and assuming the context remains stable and does not deteriorate), the project will be able to meet its final objectives and targets by completion.

Regarding the project's allocated budget, Table 2 shows that the level of leverage of GCF funds is high, achieving a co-financing commitment equivalent to 46% of the project's total resources.

Furthermore, it is noted that 73% of total funds were allocated to Product 1 (mainly due to equipment acquisition, among other factors), 21% to Product 2, and 6% to the Project Management component.

Table 2: Budget by item and funding source

OBJECT	Grant	Co-financing			TOTAL BUDGET	% PER PRODUCT
	GCF	Ministry of Agriculture	Ministry of Science, Technology and the Environment	National Institute of Water Resources		
Product 1	$14,868,412	$15,342,582	$1,115,700	$1,176,071	$32,502,765	**73%**
Product 2	$7.919.562	$92,400	$1,347,265	$77,000	$9,436,227	**21%**
Project Management	$1,139,320	$807,505	$231,412	$182,000	$2,360,237	**6%**
% by funder	**54%**	**37%**	**6%**	**3%**	**100%**	
Total by Fundor	**$23,927,294**	**$16,242,487**	**$2,694,377**	**$1,435,071**	**$44,299,229**	
GCF/Co- financing	**$2,927,294**	**$ 20,371,935**				
	54%	**46%**				

Source: Prepared internally based on PRODOC.

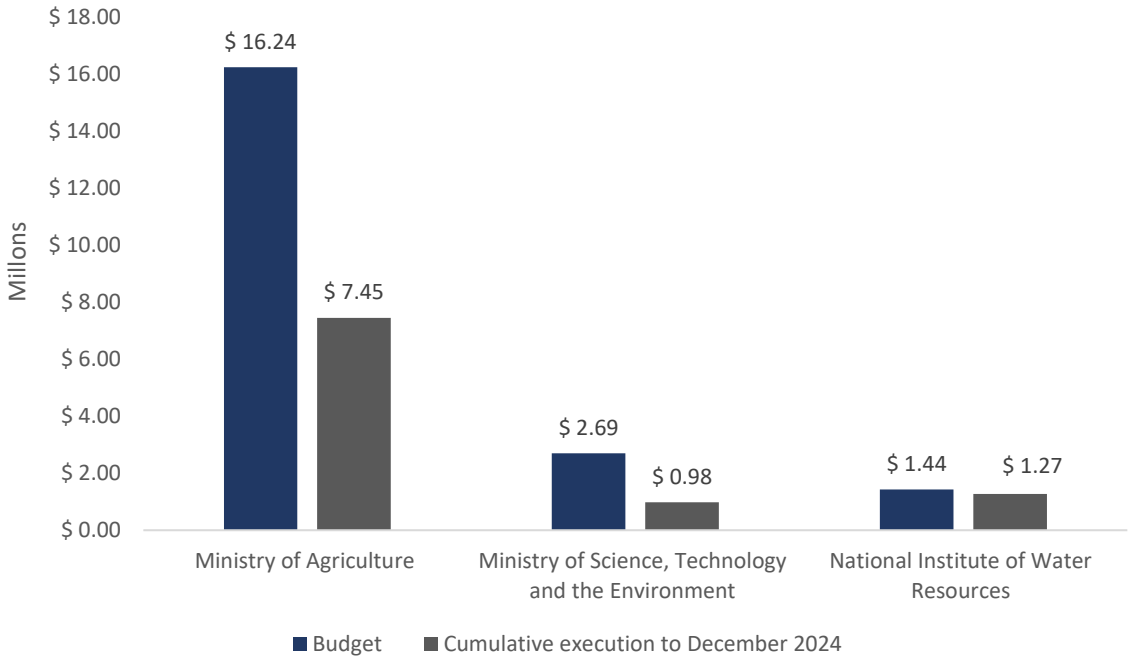
With regard to the use of resources, according to information from the APR 2024, total budget execution stands at 48%, which is consistent with the project implementation timeline. Of particular note is the execution of 54% of the resources allocated to product 1, 30% of product 2, and 40% of project management resources.

Use of resources – Co-financing

Based on APR 2024 data, the use of funds executed by co-financing sources has been uneven. On the one hand, the Ministry of Agriculture's execution amounts to 46% of the allocated resources, while CITMA's execution is 36%.

In the case of INRH, 89% of the resources allocated to the project were executed. This high level of execution is supported by the purpose of INRH's co-financing, which was in kind and is mainly intended for activity 1.4, associated with the creation of enabling conditions for the installation of hydrological monitoring equipment.

Figure 3: Implementation by funder as of December 2024[9]



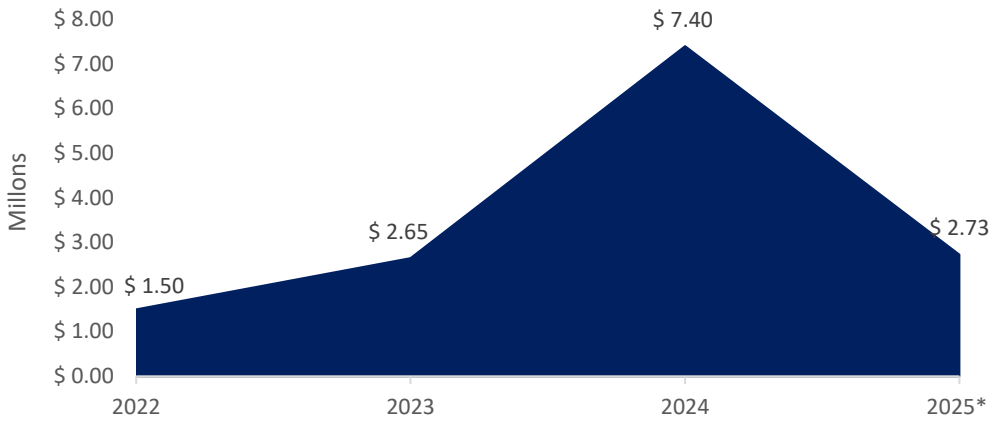
Source: Prepared internally based on APR 2024.

Use of resources – GCF funds

With regard to the use of funds granted by the GCF throughout the life of the project, it can be seen that the budget execution of the project takes off in 2024, generating signs of an S-curve in the path traced by the expenditures, which is common in the budget execution of projects. According to information provided by the Management Unit, cumulative execution amounts to USD 14,711,605.59, representing 61.5% of the committed funds.

Figure 4: Execution of GCF funds by year

[9] *Information regarding co-financing is updated annually, when the various agencies provide information on the investment made in a given year. Therefore, the information presented in the APR 2025 is provided.*



Source: Prepared internally based on UNDP data.

So far, the project has managed to overcome the financial risks associated with the economic blockade imposed on the country, such as fuel shortages and prolonged power cuts, which in turn have an impact on connectivity. However, if this adverse situation worsens, it will be necessary to redistribute the budget in order to achieve the project's ultimate objectives.

4.4 Progress towards results

To measure progress in results, a Results Achievement Progress Matrix was constructed for each product (Table 3). Below is a summary of the results obtained using the various project analysis and evaluation tools.

Table 3: Progress towards results analysis [10]

Project Strategy	Indicator	Baseline	Level at First APR	Mid-Term Target	End-of-project Target	Achievement Reported at IE	Midterm Level & Assessment	Achievement Rating	Analysis status of indicator; justification for rating (triangulated with evidence and data); how realistic it is for target to be achieved[11]
Project Objective (according to the results framework): Strengthen coastal resilience to climate change along 1,300 km of the southern coast by reducing the main vulnerability factors of ecosystems and 24 coastal communities to coastal flooding and saline intrusion caused by sea-level rise and increased storms.	Indicator 1: Number of direct and indirect beneficiaries	0	Direct: 1,048 (46% women) Indirect: 0	Direct: Total: 164,430 Indirect: Total: 131,898	Direct: Total: 444,793 Indirect: Total: 879,321	Direct: 123,382 68,897 women 54,485 men Indirect: 274,191 Women: 138,470 Men: 135,721	On target to be achieved	Satisfactory (S)	Progress: 75% direct; 160% indirect. The target for indirect beneficiaries has been greatly exceeded, and progress toward the direct beneficiaries target is on track.
	Indicator 2: Number of beneficiaries relative to total population	0	12,345 (0.1%) Total population: 11,239,114, year 2017	2.7% of total population (direct and indirect) Total population: 11,239,114, year 2017	11.7% of total population (direct and indirect)	Total: 333,690	On target to be achieved	Satisfactory (S)	Progress: 3.0% The mid-term target has been reached according to population projections considered in the first APR. Population data should be updated considering the strong migratory processes in recent years in Cuba.

[10] *The monitoring of indicators set out in the project's Monitoring and Follow-up Plan. PRODOC (2021; p.169)*

[11] *The progress reported for the indicator refers to the medium-term targets.*

	Indicator 3: Coverage / scale of ecosystems protected and strengthened in response to climate variability and change	3,002.5 ha of mangroves strengthened 3,415 ha of swamp forest rehabilitated 0 ha of marshlands	+68 ha of mangroves strengthened through natural regeneration +36.8 ha of swamp forest rehabilitated 0 ha marshlands Coral reefs and seagrass: 0 ha	+2,856 ha of degraded mangroves in target coastal zones rehabilitated (total: 5,858.5 ha) +772 ha of degraded swamp forests rehabilitated (total: 4,187 ha) +232 ha of degraded marshlands rehabilitated	+11,427 ha of degraded mangroves rehabilitated (total: 14,429.5 ha) +3,088 ha of degraded swamp forests rehabilitated (total: 6,503 ha) +928 ha of degraded marshlands rehabilitated 9,287 ha of seagrass and 134 km of coral reefs improved	+882.29 ha of degraded mangroves rehabilitated (total: 14,429.5 ha) +541.6 ha of degraded swamp forests rehabilitated (total: 6,503 ha) +151.01 ha of degraded marshlands rehabilitated Total: 1,574.9 ha	On target to be achieved	Satisfactory (S)	Progress: 41% Significant progress compared to the first APR, but further efforts are needed to reach the mid-term target.
	Indicator 4: Change in expected loss of human lives and economic assets (USD) due to extreme climate-related disasters	USD 0	USD 0	USD 0. Rehabilitated mangroves will not provide benefits in the first 5 years due to insufficient structural stability for coastal protection	Rehabilitated mangroves will start providing benefits from year 7. Potential cumulative loss reduction: USD 17.8 million	Not measurable at mid-term	-	-	Not measurable at mid-term
	Indicator 5: Number of men and women reached by—or total geographic coverage of—early warning systems and other climate-related risk reduction measures established or strengthened	0	0	Rehabilitated mangroves will not provide benefits in the first 5 years due to insufficient structural stability	At least 135,504 people (66,873 women and 68,234 men) directly benefited from enhanced coastal protection services from restored ecosystems through Ecosystem-based Adaptation (EbA) investments	Not measurable at mid-term	-	-	Not measurable at mid-term

	Indicator 7: Number of men and women sensitized to climate threats and appropriate responses	0	336 men and 346 women	Total: 164,430	225,421 men and 219,372 women (total: 444,793)	Direct: 123,382 68,897 women 54,485 men	On target to be achieved	Satisfactory (S)	Progress: 75% Progress toward the direct beneficiaries target is on track.
Product 1: Rehabilitation of coastal ecosystems to improve climate impact adaptation and management	1.1 Number of hectares of coastal wetlands rehabilitated in target areas providing protection services	7,317.5 ha of mangroves	104.8 ha of degraded coastal wetlands in rehabilitation process	3,860 ha of degraded coastal wetlands rehabilitated	15,443 ha of degraded coastal wetlands rehabilitated providing coastal protection services	1,574.9 ha rehabilitated	On target to be achieved	Moderately Satisfactory (MS)	Progress: 41% Significant progress compared to first APR; efforts remain to reach mid-term target.
	1.2 Number of hectares of seagrass lost per year in target areas due to restoration of natural hydraulic processes and ecosystem functionality	9,287 ha with reduction of 65 ha/year	9,287 ha with loss reduction of 65 ha/year	9,026 ha with reduction of 65 ha/year	8,954 ha with reduction of 18 ha/year	9,547 ha (loss over 4 years of 260 ha) with reduction of 65 ha/year	On target to be achieved	Moderately Satisfactory (MS)	Progress: -27% Annual loss of 65 ha maintained as planned; mid-term loss target not reached.
	1.3 Number of km of degraded reef crests per year in target areas due to restoration of natural hydraulic processes	2.2 km/year. Annual loss rate: 1.7%	2.2 km/year. Annual loss rate: 1.7%	2.2 km/year	0.25 km/year	Not measurable	-	-	Indicator will be measurable at project completion.
	1.4 Number of hectares with salinity >1 g/l in intervention area	544,300 ha with salinity >1 g/l	544,300 ha with salinity >1 g/l	Reduction of saline intrusion in 5,443 ha; 538,857 ha with salinity >1 g/l	Reduction of saline intrusion in 16,329 ha; 527,971 ha with salinity >1 g/l	Increase by end of 2024 of 2,442 ha; 546,742 ha with salinity >1 g/l	On target to be achieved	Moderately Satisfactory (MS)	Progress: -14% Despite efforts by INRH and results in Ciego de Ávila province, saline intrusion increased

									due to external factors such as drought and precipitation; baseline update pending.
Product 2: Greater climate adaptation capacity in vulnerable coastal communities, governments, and economic sectors.	2.1 Number of people with knowledge and skills to adapt to climate change, disaggregated by community, government, and sector, considering gender and age groups	0	1,048 (528 women, 521 men, 0.2% of total beneficiaries)	133,437 (65,811 women, 67,626 men, 30% of project beneficiaries) with high capacity (evaluated by FLACSO)	444,793 people (219,372 women and 225,421 men) with high capacity (evaluated by FLACSO)	Direct: 123,382 68,897 women 54,485 men	On target to be achieved	Satisfactory (S)	Progress: 75% Data updated as of September 2025.
	2.2 Number of climate information products developed in response to local needs regarding ecosystem capacity to provide services for climate impact management	0	0	At least 2 per municipality considered relevant by users (at least one product meets women's climate information needs). Total: 14 products	At least 10 per municipality considered relevant by users (at least 3 products meet women's climate information needs). Total: 70 products	5 products	On target to be achieved	Moderately Satisfactory (MS)	Progress: 36% Based on field interviews and documentation; support needed for remaining product development.

	2.3 Number of municipalities incorporating ecosystem management in their development plans or strategies, territorial planning, coastal zone management, and disaster risk prevention	0	0	7 municipalities incorporated EbA in development plans (including financing mechanisms); 7 municipalities incorporated EbA in territorial management plans; 7 regulatory instruments for removing artificial barriers reflected in annual work plans	24 municipalities incorporated EbA in development plans and management plans; 24 regulatory instruments reflected	7 municipalities incorporated EbA	Achieved	Highly Satisfactory (HS)	Progress: 100% Evidence exists from Baraguá, Colombia, Manzanillo, San Luis, Venezuela, Florida, Santa Cruz del Sur, and Vertiente.

Product 1

For the achievement of the activities and milestones associated with the fulfillment of Product 1, the project considered the following implementation assumptions[12]:

• *The equipment required for the rehabilitation is available for use within the planned timeframe*. This assumption was only partially met, as most of the equipment was acquired within the expected timeframe, but its distribution and installation in the field were delayed due to fuel shortages.

• *Local actors actively participate in the design, implementation, monitoring, and adjustment of coastal rehabilitation activities.* This assumption is being fulfilled, as local stakeholders are highly engaged and actively participate in all phases of the project.

• *Adequate measures have been applied to ensure that, in the event of extreme phenomena, the ecosystem restoration process remains effective*. Although the necessary measures have been implemented, the restoration process is not yet complete, as time is required for the mangroves to grow and the ecosystems to recover.

• *Annual reduction rates of 0.2–0.5% for corals and seagrass beds are sufficient for these ecosystems to regain their protective function against storms and coastal erosion*. *The reduction of saline intrusion over 16,329 hectares (in 8 years) is significant for freshwater availability and agricultural activities, considering that it will lay the groundwork for the infrastructure required over the remaining 22 years*. This is a technical assumption that can be validated once the project's implementation impacts are verified.

In relation to the specific activities under Product 1, the main achievements reached at the time of this interim evaluation are summarized below:

Activity 1.1: Assess and restore the functions of coastal wetlands in the target sites through the reestablishment of hydrological processes. (estimated progress >40%)

Under this activity, the ecosystem profile was completed, including a hydrological analysis, baseline, diagnosis, and task schedule. This task has been completed for all seven sites. The Institute of Tropical Geography contributed to the mapping outputs and to defining the schedule for the ecosystem profile. A map viewer for the seven sites is available on the IDEMA platform.

A major milestone under this activity is the development of the mangrove health monitoring protocol, through which community brigades and forestry enterprises received training.

In addition, the main project investment has been directed toward restoring laminar water flow, made possible by the purchase of the necessary machinery. As of this interim evaluation, rainwater has been successfully redirected toward mangrove areas, thanks to the removal of anthropogenic barriers.

[12] *The information on the assumptions can be found in the project results framework (PRODOC; p.32).*

Activity 1.2: Rehabilitation of mangroves and swamp forests in target sites through natural and assisted regeneration to improve coastal protection.

Although progress cannot yet be measured—since mangrove rehabilitation takes at least five years and will need to be assessed during the final evaluation—the project has so far worked on 1,575 hectares (41% of the mid-term target). The start of fieldwork was delayed due to the preparation of the hydrological study and its subsequent approval by the GCF.

The project aims to reach 15,000 hectares, as work began in the most degraded and high-priority areas. Many other areas require less intervention, and rehabilitating a single channel can benefit large extensions of land.

In addition, the delivery of equipment to forestry enterprises has been completed 100%. The equipment includes: 5 trucks; 5 bulldozers; 11 Mitsubishi pickup trucks (one per intervention site, one for INRH—Activity 1.4, one for ICIMAR—Activity 1.3, and two for the Management Unit); 3 Toyota minibuses; 5 backhoes or excavators; 7 tractors with trailers; 12 motorcycles with sidecars for the agroforestry enterprise; 2 motorcycles for the Management Unit (for Component Heads); 145 chainsaws; 7 nurseries; 1 Renault mobile laboratory; Gloves, tools, machetes, files, and other supplies.

Activity 1.3: Record and assess the natural regeneration of coastal and marine ecosystems and their protective functions, based on the conditions provided by restored coastal wetlands.

As in the previous activity, it is not yet possible to measure progress at this stage. However, significant advances have been made toward its achievement—for example, the installation of four oceanographic stations financed by the project.

Laboratory equipment was delivered to:

i) ICIMAR
ii) Institute of Ecology and Systematics
iii) CINAC of Camagüey
iv) National Aquarium
v) University of Havana.

Deliveries included microscopes, balances, diving suits, total stations, and other instruments.

The laboratories are not yet fully operational, as some structural improvements and additional equipment purchases are pending, though a timeline has already been established. The needs of each laboratory were identified in detail with the participation of all involved actors.

Additionally, servers, antennas, and solar panels are being installed to establish connectivity systems between monitoring stations and the Knowledge Management Platform.

Finally, a community volunteer network has been created for the monitoring of seagrass beds and coral reefs, providing support for coral repair during climatic and anomalous events.

Activity 1.4: Improve water conveyance systems along selected basins to restore freshwater drainage in coastal ecosystems and aquifers, reducing and monitoring saline intrusion in selected sites. (estimated progress >40%)

Under this activity, the project has advanced in the rehabilitation of four water wells out of 57 planned (7%) and expects to complete another 11 before the end of 2025. Artificial barriers have been removed, including the cleaning of culverts to allow water flow. In addition, 26 recharge wells from the 1980s and 1990s in Ciego de Ávila are scheduled for rehabilitation.

Regarding the reduction of saline intrusion over 16,329 hectares, the first milestone is the development of a standardized measurement methodology, which is currently in its final stage.

Moreover, results from the saline intrusion line diagram at the end of 2024, compared with the previous year, show a slight increase of 2,442 hectares with salinity levels above 1 g/l across the analyzed area. The greatest increases were recorded in the provinces of Pinar del Río and Camagüey; however, the rest of the provinces showed reduced effects, with the most favorable results in Artemisa and Mayabeque. The following table shows variations in saline intrusion (in hectares) by location:

Table 4: Hectares of saline intrusion by province

Province	Area (ha) 2023	Area (ha) 2024	Difference
Pinar del Río	133,235.34	152,868.64	19,633.30
Artemisa	91,370.34	80,516.75	-10,853.59
Mayabeque	43,990.49	30,276.16	-13,714.33
Ciego de Ávila	26,740.15	25,377.20	-1,362.95
Camagüey	105,586.93	123,971.24	18,384.31
Las Tunas	104,821.04	102,604.57	-2,216.47
Granma	82,109.33	74,681.63	-7,427.70
TOTAL	587,853.62	590,296.19	2,442.57

Source: UNDP

The table above shows a decrease in saline intrusion at five (5) intervention sites and an increase only in Pinar del Río and Camagüey. However, the cumulative increase in these two provinces is greater than the cumulative decrease in the other five sites, resulting in an increase in the area affected by saline intrusion.

Product 2

With regard to the assumptions for the successful implementation of Product 2, the following have been identified:

- *The agreements signed between the project team and local and national entities are fulfilled.* This assumption is being met at the time of the interim evaluation (IE).

• *Local actors actively participate and show interest in engaging in capacity development activities*. There is clear evidence of successful involvement of local stakeholders, as well as a high level of commitment to the project's activities.

• *Social, political, and economic circumstances in the target municipalities and provinces do not change significantly throughout project implementation*. This assumption is being met at the time of the IE.

In relation to the specific activities under Product 2, the main achievements reached at the time of this interim evaluation are summarized below:
Activity 2.1: Develop a climate adaptation technical capacity-building program for coastal communities and local stakeholders (government and economic sectors) to enable adaptation actions and capacities. (estimated progress >80%)

The program was implemented by FLACSO, and the eleven (11) training modules developed were approved. In addition, annex classrooms have been established and fully equipped in the seven (7) intervention sites.

Within this framework, coordination was carried out with key municipal stakeholders, and 133,000 people have been trained (the mid-term target is 164,000 trained and 550,000 by project completion). A training plan for the next three months is in place, which would allow the mid-term target to be achieved by the end of the year.

However, there is currently no measurement of participant satisfaction or verification that the knowledge has been effectively acquired. It is therefore recommended to include such evaluations in order to measure real ownership and application, contributing to greater community engagement in mangrove restoration.

Activity 2.2: Integrate project-derived information (technical and community-based), early warning system data, and national datasets into a Knowledge Management Platform to provide climate information products for monitoring, evaluating, and informing coastal communities about local (community and ecosystem) capacity to manage climate change impacts. (estimated progress 35%)

Among the significant milestones achieved under this activity are the following:

A diagnostic assessment was carried out to initiate the design of the architecture for the Coastal Adaptation Knowledge Management Platform and its subsequent implementation, as well as to define the equipment needed for its data center. The platform will also host the learning module (MOOC).

Within the platform, the activity foresees the availability of:
i) the MOOC, and
ii) the monitoring system.

The monitoring system includes the development of climate information products for communities and will also contribute to strengthening the Early Warning Systems (EWS). These products will integrate not only project-generated information but also data from all monitoring stations and systems available across the 24 municipalities.

Further actions are still required for the full operationalization of the monitoring system, which faces challenges in being integrated within the same platform as the MOOC. In addition, as of this IE, there has been limited progress on developing the Coastal Resilience Evaluation Protocol (PERC), which is to be integrated into the Territorial Statistical Information System (SIET).

Activity 2.3: Integrate Ecosystem-based Adaptation (EbA) approaches into regulatory and planning frameworks at territorial and national levels to ensure the long-term sustainability of EbA conditions and investments for coastal protection. (estimated progress >50%)

Under this activity, a network of legal advisors for the project has been established, comprising more than 30 legal experts representing relevant economic and planning sectors, as well as different levels of government. The purpose of this network is to integrate EbA approaches into development plans and budget allocation mechanisms for coastal areas.

This network is currently working on a draft Cuban Technical Standard titled "Terms and Definitions for EbA in Cuba", which has been submitted for review. Once approved, it will be applied across sectorial and municipal regulatory instruments.

In addition, the network of legal advisors is in the process of drafting another Cuban Technical Standard titled "Technical Guidelines for the Establishment of Ecological Flow."

Table 4. Assessment for overall results

Evaluation of results	Rating
Relevance	6. Highly Satisfactory (HS)
Effectiveness	4. Moderately Satisfactory (MS)
Efficiency	4. Moderately Satisfactory (MS)
Assessment of the overall results of the project	4. Moderately Satisfactory (MS)

4.4.2 Obstacles remaining to achieve the project objective.

The project has strong foundations and has produced valuable results, particularly in community engagement and in the integration of social and environmental components. However, the challenge remains for the advances achieved within the territory—especially the technical ones—to be reflected at the national level. It is important to strengthen the correlation between the perceptions of local stakeholders and the available technical and scientific evidence so that the national team can respond in a timely manner and guide actions toward achieving the expected results.

There is also a need to continue promoting the inclusion of the EbA (ecosystem-based adaptation) approach in development policies and plans. Although progress has been made with the hiring of legal experts and this approach has been embedded in some municipalities, its practical application remains limited. Sustaining momentum in this regard will be crucial to prevent the project from remaining confined to the local level and to ensure that its contributions are consolidated within broader institutional frameworks.

Finally, a key issue is ensuring that the project's actions sustainably contribute to strengthening the livelihoods of the population. It is important that, toward the final stage, tools and capacities are consolidated which allow the generation of lasting economic and social opportunities, thereby guaranteeing the continuity of the results achieved and the well-being of the participating communities.

4.5 Project implementation and adaptive management

4.5.1 Management provisions

The project is implemented under the NIM modality, with implementation support services provided by UNDP, following national regulations and UNDP standard procedures for project implementation.

At the national level, the project is implemented by the Environment Agency[13], an entity attached to Cuba's Ministry of Science, Technology and Environment (CITMA), which acts as the national implementing partner. AMA is responsible for the overall execution of the project, resource management and ensuring that the expected results are achieved. UNDP retains ultimate responsibility to the Green Climate Fund (GCF) for the implementation, supervision, monitoring and evaluation of the project.

The AMA established inter-institutional agreements with the Ministry of Agriculture (MINAG), the National Institute for Water Resources (INRH) and the local governments for the execution of activities financed through national co-financing. It also has the technical support of FLACSO, which advises on social and environmental risk management and gender issues.

At the territorial level, the Provincial and Municipal Coordination Teams — comprised of representatives from the Ministry of Science, Technology and Environment (CITMA), MINAG and INRH — are responsible for implementing the plans defined by the National Directorate and for reporting monthly on local progress.

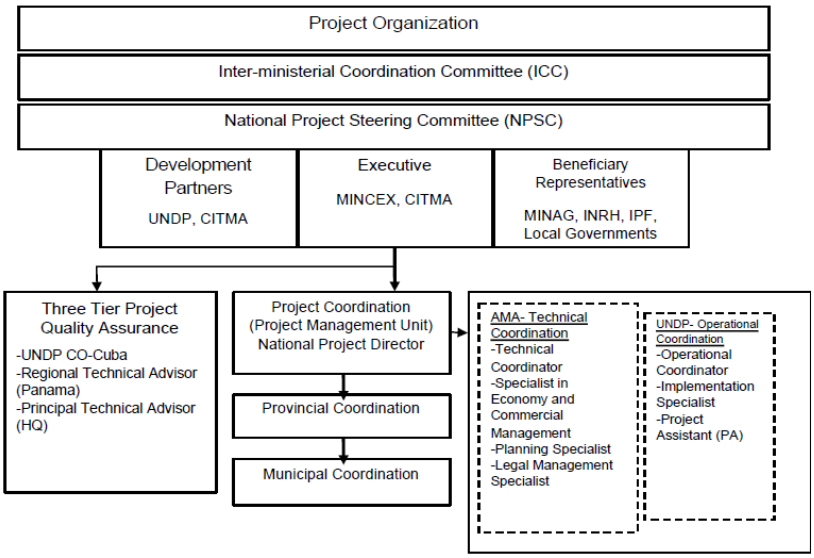
The project has a governance structure articulated across different levels (Figure 5). At the national level, the National Project Steering Committee (NPSC), or Project Board, is responsible for making strategic and corrective decisions to ensure the achievement of results. The NPSC is

[13] *From the fieldwork carried out, it became clear that AMA has hired the NGO IRIS to provide technical support for the implementation of the project in the territory.*

composed of representatives from the relevant ministries and national agencies, as well as the local governments.

From 2024 onwards, and in view of the accumulated delays in project implementation, the chair of the steering committee (NDA in Cuba) decided to increase the frequency of meetings, holding sessions every two months, with the aim of identifying additional adaptive management solutions to handle the implementation challenges. This is a noteworthy action in the project's adaptive management.

Figure 5: Project governance structure



Furthermore, the project has mechanisms that ensure community participation and the flow of information between local and national levels. This network allows the integration of monitoring results and territorial recommendations into local planning mechanisms and into the decisions of the National Project Steering Committee (NPSC).

With regard to the implementation quality of the United Nations Development Program (UNDP), it is worth highlighting the set of actions undertaken to ensure efficient execution in compliance with the norms of the Green Climate Fund (GCF). The UNDP team actively accompanied processes for the procurement of equipment, materials and supplies, and managed the financial transactions necessary for timely advancement of activities.

It also provided support in contracting logistics for workshops and other procurements under the NIM modality, contributing to the proper operational organization of the project. On top of this are the communication efforts aimed at showcasing the results achieved, the continuous monitoring of fulfilment of the planned objectives, verification of compliance with the conditions established by the GCF, and the rigorous application of due-diligence procedures. Together, these actions reflect a solid technical and administrative support that backed the achievement of the expected results.

For all the above reasons, it is considered that both the quality of the UNDP's implementation and the execution quality of the Environmental Agency (AMA) have been satisfactory as of this interim evaluation.

Table 5. Assessment for adaptive management

Evaluation of results	Rating
Quality of UNDP implementation/supervision	5. Satisfactory (S)
Quality of implementation by the implementing partner	5. Satisfactory (S)
Assessment of overall project results	5. Satisfactory (S)

4.5.2 Work planning

The high level of commitment and technical quality of the Management Unit team, as well as of the institutions linked to the *Mi Costa* project, is noteworthy. From the highest authorities down to the technical and operational field teams, a strong sense of ownership and responsibility is evident. The members feel proudly part of the project and give their utmost effort to fulfil the objectives and commitments made to the Green Climate Fund (GCF) and the United Nations Development Program (UNDP).

At the provincial and municipal level, the same degree of involvement is observed—among both local authorities and the new economic actors, community leaders, and the local population. Children, youth, adults and older people participate actively, reflecting a growing environmental awareness. This commitment is manifested through participation in forestry brigades, community conservation actions, and the transmission of knowledge about environment and climate change from pre-school through secondary education.

The strong commitment of all actors has enabled the project to overcome the limitations derived from a challenging context. Factors such as fuel shortages, lack of electricity and limited connectivity restrict the operational capacity of the Management Unit, despite constant efforts to mitigate these impacts. Teams have to plan visits to territories well in advance in order to secure the necessary fuel, although sometimes visits cannot be carried out. Equally, the lack of electricity and connectivity affects the functioning of meteorological, oceanographic and hydrological stations, sensors and monitoring equipment in general, which are not always able to transmit data in real time. In many cases, provincial technicians must adjust to these conditions and work during the night or early morning, taking advantage of the times when they have power to carry out reports and maintain the operational continuity of the project.

4.5.3 Financing

The financing provided by the Green Climate Fund (GCF) to the project demonstrated clear and strategic additionality, by funding critical equipment that helped to reduce Cuba's technological gap in climate matters. This, in turn, made viable the implementation of the national strategy "Tarea Vida" and the commitments assumed for climate change adaptation and mitigation under the Paris Agreement.

The role of GCF financing was also expressed through its catalytic function to mobilize public actors, generate institutional and operational improvements, and strengthen the debate on ecosystem-based adaptation (EbA) in the country and the development of normative instruments.

In conclusion, it is found that the GCF funds enabled actions aligned with international standards and with the commitments assumed by Cuba, with the objective of closing critical gaps, facilitating synergies between sectors, and increasing the resilience and adaptation of coastal communities to the impacts of climate change.

4.5.4 Coherence in the delivery of climate finance with other multilateral entities

As highlighted in section 4.2 (Relevance), the Mi Costa project is strategically aligned with other interventions previously implemented by UNDP and financed by multilateral entities in Cuba, aimed at strengthening coastal resilience and ecosystem-based adaptation.

Among these, the project 'Reducing vulnerability to coastal flooding through ecosystem-based adaptation in the southern provinces of Artemisa and Mayabeque' stands out. Funded by the Adaptation Fund and implemented by UNDP, this experience is a direct precursor to Mi Costa, having generated methodologies, technical capacities and management tools that now guide the actions currently underway.

4.5.5 Project-level monitoring and evaluation systems

The project's Monitoring & Evaluation (M&E) Plan design is properly aligned with the guidelines and requirements established by the Green Climate Fund (GCF) and the United Nations Development Program (UNDP).

It includes all key instruments foreseen by both entities — such as the Inception Workshop, the Inception Report, the Annual Performance Reports (APR), the Interim Evaluation (IE), the Final Evaluation (FE) and the use of the GCF Tracking Tools at strategic moments.

Moreover, it provides clear mechanisms for systematic data collection, monitoring of progress vis-à-vis the results framework, updating the risk register and defining corrective actions when necessary. It also establishes the obligation of a management response to independent evaluations, thus strengthening learning and feedback during implementation.

In terms of planning and feasibility, the M&E design includes a logical schedule, defined responsibilities for each monitoring and evaluation instance, and an allocated budget covering essential activities such as workshops, evaluations and reporting — in line with the recommended practices of GCF and UNDP.

In terms of implementation, it is evident that the milestones of the monitoring and tracking system have been duly met; enabling the availability of information on both the project's successes and weaknesses throughout execution.

Table 6. Project tracking and monitoring systems

Type of M&E Activity	Responsible Parties	Planned	Actual
Inception Workshop	Executing Partner / National Project Director (NPD) / Operations Coordinator (OC) / Technical Coordinator (TC)	November 22–26, 2021	January 31 – February 4, 2022
Inception Report and Baselines	NPD / OC / TC	December 31, 2021	February 28, 2022; approved March 15, 2022
Risk Management (including Atlas Risk Logs)	NPD / OC / TC / UNDP Country Office	Recurring Activity	Recurring Activity
Monitoring and Reporting Requirements Oversight	NPD / OC / TC	Annually	2022 2023 2024
GCF APR	AMA / UNDP Country Office / NPD / OC / TC	Annually	2022 2023 2024
Lessons Learned, Case Studies and Knowledge Generation	National Project Director / TCs / Knowledge Management Specialist	Recurring Activity	
Monitoring of Safeguards Management Frameworks	Project Safeguards Officer and TCs through project monitoring systems (water quality, bio indicators, participatory surveys)	Ongoing	
Monitoring of Gender Action Plan	National Project Director / Project Gender Officer	Ongoing	
Monitoring of Stakeholder Engagement Plan	National Project Director / Project Safeguards and Gender Officers / OC / TCs	Ongoing	
Project Steering Committee Meetings	NPC / UNDP Country Office	At least annually	Project Board Meetings November 2022 November 2023 February, June, September, and November 2024 March and June 2025
Interim Evaluation	Independent Evaluators (contracted by UNDP)	Q4 2025	September 2025
Audit	UNDP Country Office	Upon UNDP request according to its policies	-
Final Evaluation	Independent Evaluators (contracted by UNDP)	Q1 2030	
Lessons Learned	Project Team / UNDP Country Office / UNDP-RSC	Annually and at project completion	Quarterly reports include a section on lessons learned.
Supervision Missions	UNDP Country Office and Management Unit	Four times per year	5 visits recorded in 2023 and 4 supervision visits in 2024.
Addressing Environmental and Social Claims	National Project Director / UNDP Country Office	Ongoing	Monitored through the UNDP ATLAS System
Learning Missions / Site Visits from GCF Secretariat	UNDP Country Office, Project Manager, and UNDP-GCF Team	-	Not conducted to date

Table 7. Assessment for the design and implementation of the M&E plan

Results Evaluation	Rating
M&E Design at Inception	5. Satisfactory (S)
M&E Plan Implementation	5. Satisfactory (S)
Overall Project Results Assessment	5. Satisfactory (S)

4.5.6 Stakeholder involvement

According to what is established in the Project Document (PRODOC), the actor map was developed through a public consultation process in which the decision-making arenas, institutional capacities and socioeconomic aspects of the different groups involved were analyzed. This input (Figure 6) made it possible to identify key actors with interests in the project and define their degree of relevance in each of the three components.

During the interim evaluation, it was observed that most of the project's actors have been involved, each contributing integrally to its implementation. In particular, the prioritized actors continue to play an active role consistent with what was planned in the initial design. However, there is a need for greater involvement of identified actors, such as INSMET, as well as Civil Defense, in a more active manner.

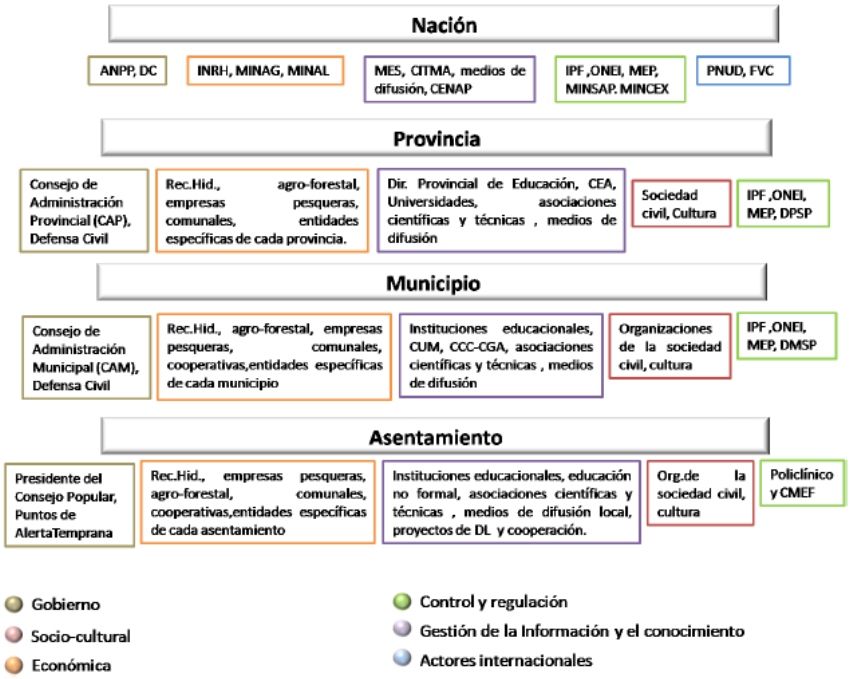
Noteworthy is the involvement of the branch schools dependent on the Ministry of Agriculture (MINAG) and the National Institute of Hydraulic Resources (INRH), which are registered with the Ministry of Education and have the capacity to accredit postgraduate courses. It was decided that the modules on Coastal Wetlands, Soils and Water Resources would be certified by MINAG and INRH, giving them a high level of credibility. The National Accreditation Board (JAN) is the entity authorized to certify the courses, and indeed these modules were accredited by JAN.

Analyzing the actor map, it is evident that, in the Governance component, the entities identified as most relevant participated — especially those linked to strengthening communication, participatory planning and climate change adaptation, as well as the management of associated ecosystem services. Among them are AMA, DMA and ICIMAR. It should be noted that the Municipal Administration Councils (CAM) and the Municipal Delegations of MINAG continue to play a central role in territorial implementation.

With respect to the operational component of the project, corresponding to Product 1 and focusing on ecosystem restoration activities, active participation was verified from the entities that had been classified as having the greatest operational relevance. These include AMA, ICIMAR, FLACSO, INRH, the Physical Planning Institute (IPF), the National Company for the Protection of Flora and Fauna (ENPFF), among others.

Finally, in the capacity-building component, which demands both strategic and operational competences, sustained participation was corroborated from the entities previously identified in the PRODOC: AMA, ICIMAR, FLACSO, INRH, Provincial Delegations of CITMA (DPCITMA), Provincial Administration Councils (CAP), Municipal University Centers (CUM), civil society organizations (Mass Organizations-OM), among others.

Figure 6: Stakeholder map



Source: PRODOC

In summary, there is significant coherence between the project's design and its implementation regarding the participation of the key actors identified. The use of the actor map as a management tool has contributed to maintaining a coordinated implementation and strengthening the links among the institutions involved in the different components of the project.

4.5.7 Social and environmental standards (safeguards)

From the analysis of the Environmental and Social Assessment Report (ESAR) (UNDP, 2024), it is evident that a detailed examination was conducted of the potential social and environmental risks associated with hydrological restoration and ecosystem-based adaptation measures along the southern coast of Cuba.

The project was classified as moderate risk (Category B), in accordance with UNDP's Social and Environmental Standards, as it involves localized potential impacts of limited magnitude that can be mitigated through good practices, management measures, and the participation of local stakeholders.

The evaluation process identified eight main risks, most of them classified as moderate, related to the restoration of wetlands, mangroves, and swamp forests; the possible introduction or proliferation of invasive species; impacts on habitats and protected areas; risks to the health and safety of communities and workers; as well as potential effects on access to resources and ecosystem services used by local communities. Furthermore, the risk of insufficient participation by key stakeholders and the persistence of gender stereotypes and gaps, which could limit the full participation of women in decision-making processes and project activities, was also recognized.

To mitigate these risks, the project developed an Environmental and Social Management Plan (ESMP), which includes specific protocols, such as the management of invasive species, ecological restoration using non-invasive techniques, and the prevention of soil and water contamination. Environmental and social monitoring plans, community training mechanisms, and communication strategies were also developed to strengthen local engagement.

AMA is responsible for supervising the ESMP, and with the implementation of a grievance mechanism at both local and national levels, these measures aim to ensure that the project not only minimizes negative impacts but also strengthens the social and ecological resilience of coastal communities in the face of climate change.

From the analysis of what was reported in the 2024 APR, it is highlighted that the commitments to apply environmental and social safeguards outlined in the ESAR have been fulfilled. The training and creation of multidisciplinary environmental and social safeguards teams in the 24 municipalities and the 7 intervention sites, under the leadership of the focal points identified in 2023, was the main task during the reporting period.

4.5.8 Reporting

During the implementation of the project, the reporting requirements established by UNDP and GCF were met. The Project Management Unit prepared and submitted the requested periodic reports in a timely manner, including technical, financial, environmental and social progress reports, as well as monitoring reports for each period.

The information presented was reviewed and validated by UNDP, ensuring consistency between the results achieved, the performance indicators and the goals established in the project document. The reports were submitted in a timely manner to the relevant agencies, complying with the required standards of transparency and accountability, and serving as the basis for the approval of disbursements and the evaluation of the overall progress of the project.

4.5.9 Communications

The project maintains continuous and fluid communication with the local communities involved, which have shown a high level of commitment and engagement at all stages of implementation. Through workshops, regular meetings, awareness campaigns, and participatory monitoring activities, the project has promoted the ongoing exchange of information, the strengthening of local capacities, and the ownership of results by the beneficiaries. This interaction has helped

consolidate trust between the implementing institutions and the coastal communities, as well as ensure the sustainability of the measures implemented. In this regard, it is important to highlight the role of the provincial teams of the Mi Costa project, who work permanently in the field and maintain a constant link with the coastal communities, generating social capital that contributes to improved project performance in the territory.

Additionally, the project systematically uses established institutional mechanisms for communication and information dissemination at both national and territorial levels. Official channels of CITMA, as well as provincial and municipal governments, have been employed to ensure transparent and coherent dissemination of project progress. These actions make it possible to keep all relevant stakeholders informed and facilitate inter-institutional coordination, in compliance with UNDP and GCF communication guidelines.

4.6 Sustainability

The following are the initial conclusions regarding the risks associated with the sustainability of the intervention and the strategies that the Management Unit plans to implement, based on fieldwork and documentary analysis.

4.6.1 Financial risks to sustainability

The project faces financial risks mainly associated with budget cuts, inflation, and economic instability in the country, which limit the availability of resources to sustain planned activities and retain technical staff. Added to this is the economic blockade, which hinders the timely acquisition of essential equipment and materials, affecting operational continuity. These adverse financial conditions reduce the project's capacity to sustain long-term investments and compromise the smooth execution of actions in the territories.

Strategy: The Management Unit continuously seeks to strengthen inter-institutional alliances and cooperation with government entities to ensure access to resources and address economic and financial constraints. It also promotes flexible planning that allows for the prioritization of strategic activities and the optimization of available resources, reducing vulnerability to possible budget adjustments or delays in financial flows.

4.6.2 Socio-economic risks to sustainability

In socio-economic terms, population migration from the intervention areas represents a significant challenge, as it weakens the social base and the project's capacity for continuity in coastal communities; it also limits the technical personnel available to carry out activities. Added to this are the electricity crisis and fuel shortages, which affect both the implementation of field activities (forestry, hydrological and monitoring) and the operation of irrigation systems and the quality of documentation of results. Demographic dynamics and population changes also affect the availability of local technical personnel, hindering the social and operational sustainability of the project.

Strategy: Active community participation is promoted and local capacities are strengthened in order to ensure ownership and continuity of actions at the territorial level. At the same time,

energy resilience measures are implemented, including improvements in technical equipment and resource use efficiency, as well as the search for sustainable mobility and energy alternatives to reduce dependence on fossil fuels.

4.6.3 Institutional and governance risks to sustainability

No significant risks have been identified that could affect the sustainability of the results achieved by the project. This is supported in particular by the alignment with the 'Tarea Vida' Plan and the working dynamics established by the government with regard to internationally funded projects, which demonstrates a commitment to the territorialisation of projects and multi-level coordination with institutional actors.

However, institutional risks linked to the fluctuation of technical staff, the overload of tasks on specific personnel, the frequent rotation of decision-makers in the territories, and the pressure on institutional capacities derived from the complexity of management must be taken into consideration.

Strategy: Continuous training programs are implemented, aimed at both technical staff and new decision-makers in the territories, with the aim of maintaining the coherence and technical quality of the project. In addition, greater coordination between the different levels of government and institutions involved is promoted, encouraging coordination and adaptive management mechanisms that enable an effective response to environmental and institutional risks that may affect the sustainability of the project.

4.6.4 Environmental risks to sustainability

The project faces significant environmental risks that could affect the continuity and impact of its actions. These include extreme hydrometeorological events, such as cyclones, flooding from heavy rains and prolonged droughts that deplete aquifers, as well as earthquakes in the eastern region, particularly in the strip that includes Granma, which represent uncontrollable risk phenomena. These events can damage infrastructure, affect managed ecosystems and limit the project's response capacity in critical situations in the territories.

Strategy: Environmental resilience and mitigation measures are adopted, including the improvement of technical equipment and the training of teams to anticipate and respond to extreme events. Adaptive management strategies are also promoted, integrating constant monitoring, early warning and preventive planning, so that project actions remain effective despite adverse environmental conditions.

Table 6. Sustainability assessment

Sustainability	**Rating**
Financial Resources	2. Moderately Unlikely
Sociopolitical	3. Moderately Likely
Institutional Framework and Governance	4. Likely
Environmental	3. Moderately Likely
Overall Likelihood of Sustainability	3. Moderately Likely

4.7 National appropriation

The Mi Costa project is highly ambitious and, at the same time, of great relevance to the Republic of Cuba. Its comprehensive approach spans from the highest levels of government to the coastal communities, which are most affected by the impacts of climate change. At the institutional level, there is a notable high level of commitment and deep technical and scientific knowledge among government authorities, directors of institutes and research centers, as well as the technical staff involved.

The Cuban socio-political context supports extensive territorial reach of actions, which represents a strategic advantage for project implementation. The existence of sustained political will and a coordinated institutional system enables a harmonized response among agencies and ministries to national calls, mobilizing structures from the central to the local level. This inter-institutional capacity creates favorable conditions for the efficient execution of scientific initiatives with territorial scope.

The project has seven community monitoring brigades that report relevant environmental events and strengthen local management. A high level of empowerment is observed in the communities, even reflected in the everyday language of their inhabitants. Raising awareness among girls, boys, and adolescents is a key achievement, as these actors will be the future leaders and entrepreneurs capable of sustainably leveraging natural capital.

Communities express a sense of belonging and commitment, demonstrating active participation in training processes and in identifying knowledge gaps. They do not expect individual benefits from the project but seek to engage and contribute to its development. In this sense, Mi Costa has become a hopeful project, capable of transforming attitudes, relationships, and forms of community organization. Some testimonies collected during the field mission reflect this:

"The project has brought life to the community. What we thought we had lost, Mi Costa has helped us recover. Caring for the mangrove is caring for our own home." (Mi Costa project beneficiary, personal communication, Júcaro, 2025).

"Mi Costa helped us change the paradigm we had about the environment. It made us understand that the more we work for the environment, the longer we will be able to remain in our community." (Mi Costa project beneficiary, personal communication, Pinar del Río, 2025).

The paradigm shift observed in the territories is profound. Communities have changed following the project's implementation, as reflected in the testimonies collected in the life story videos. Collective learning processes have generated new leadership—both formal and informal—that now energizes local participation. During Hurricane Rafael, for example, a resident prioritized protecting the project's Annex Classroom over her own home, reflecting the level of commitment achieved.

At the institutional level, the impact has also been transformative. At ICIMAR, the project marked a structural change in how research is conceived. Whereas the institution previously focused solely on scientific aspects, Mi Costa enabled the incorporation of social dimensions, gender considerations, and environmental safeguards into projects. Today, all departments of ICIMAR actively participate in this new interdisciplinary vision. Similarly, academic institutions such as FLACSO have strengthened their capacities in climate change, mangroves, and coastal resilience, while scientific centers have learned about inclusion and social aspects. Although these outcomes are not usually counted among direct beneficiaries, they reflect deep institutional learning that deserves recognition.

Finally, the implementation process also involved an "unlearning" exercise at both the community and institutional levels, revisiting traditional perceptions regarding gender, mangrove management, and coral bleaching. This process of collective reflection and reconstruction of knowledge constitutes tangible evidence of the national ownership of the Mi Costa project.

4.8 Innovation in results areas

The *Mi Costa* Project demonstrates substantial innovation across its results areas, mainly through methodological integration, the use of cutting-edge technology for monitoring, and the achievement of direct and demonstrable ecosystem benefits.

1. Socioeconomic Innovation and Capacity Building

The project has achieved key innovation in the social and economic realm by establishing a methodological link between social and environmental aspects, beyond direct results.

Social Awareness and Ecosystem Valuation: The project has achieved an innovative social outcome by raising community awareness about the direct benefits of mangrove and wetland conservation and restoration. This transforms the population's relationship with their environment.

Socio-Environmental Integration through Community Monitoring: A direct link between social and environmental aspects has been established through community monitoring, especially via volunteer brigades. During the proposal development and the first years of implementation, the focus was on how environmental actions benefit the social and economic aspects of the community. This approach allows understanding of community resilience dynamics and guides adaptive management.

Creation of New Local Direct Employment: Local initiatives generated jobs that did not previously exist, resulting in high satisfaction among direct beneficiaries. This employment generation within the climate change adaptation context is an innovative outcome in itself, directly linking ecological restoration with improved livelihoods.

Hydrological Restoration and Immediate Benefits: The hydrological study required by the GCF was completed, enabling the restoration of hydrological flows in wetlands through channel cleaning. This process is resulting in gradual wetland recovery, with tangible benefits already observed in sites such as La Coloma and Júcaro.

Flood Risk Reduction (Additional Benefit): Interventions in channel and water passage cleaning in coastal wetlands, aimed at restoring the hydrological cycle, have generated an additional benefit not initially planned: the reduction of flood risk in nearby settlements, such as La Coloma, by facilitating faster surface water runoff. This is an innovative risk management outcome that should be combined with the avoided damage study conducted.

Beneficiary Calculation Methodology: Although this methodology was developed during the proposal preparation phase, it represents an innovation in Cuba, resulting in a unified methodology that can be used to calculate direct and indirect beneficiaries of an initiative.

2. Technological Innovation and Strengthening Monitoring Capacity

A key innovation of the project lies in the investment in novel technology and the resulting enhancement of evidence-based decision-making capacity:

Closing the Technological Gap and Early Warning Systems: The significant investment in equipment and innovative technology with GCF funds will substantially help close existing technological gaps in certain areas. Specifically, the capacity to generate data for environmental condition monitoring and the strengthening of early warning systems on the island has been notably enhanced.

Installation of a Hydrometric Network: A network of hydrological and hydraulic monitoring stations (level, flow velocity, rain gauges, groundwater levels, salinity) will be installed. A particularly innovative achievement is that the installation of some flow sensors has enabled the development of a threshold-based alert system, allowing anticipation of critical flood situations. The data generated is already being used in the operations room of the National Institute of Hydraulic Resources (INRH).

Remote Sensing Monitoring and Marine Ecosystem Protocols: Monitoring methodologies using novel remote sensing tools have been developed in Cuba to efficiently and systematically assess wetland recovery. Additionally, specific protocols have been developed to monitor the state of interconnected marine ecosystems (such as seagrasses and corals), consolidating an integrated coastal landscape perspective.

Development of a Saline Wedge Study Methodology: A new methodology for studying the saline wedge has been developed and is in its final approval phase. It provides a common technical framework for characterizing saline intrusion in coastal aquifers, a key phenomenon in Cuba. This represents a methodological innovation that, although requiring validation of the already implemented automatic calculation algorithms, will standardize coastal water management.

3. Innovation in Data Integration and Digital Governance

The project is developing a Digital Platform with multiple dimensions, including an environmental monitoring system, a knowledge platform with training modules, and enhancements to early warning systems. Notably:

Multidimensional Environmental Monitoring System (EMS): The project is designing an EMS that will establish a direct link between sociology and the environment—an innovative methodological feature of the project. The EMS will interpret environmental indicators (water quality, ecosystem health) alongside social and economic variables (vulnerability, livelihoods,

governance). Its geospatial (GIS) architecture with a traffic-light model (green, yellow, red) is an innovative way to translate technical complexity into clear messages for municipal planning and immediate action.

Formalized Community Monitoring Mechanisms: Volunteer brigades and mechanisms for community monitoring have been developed, allowing the incorporation of qualitative data (risk perception, local practices) to complement institutional information, strengthening participatory governance of the system.

4.9 Unexpected results, both positive and negative

The *Mi Costa* Project has generated a series of unexpected results that have both positive and negative impacts on implementation and benefits. On the positive side, the creation of new local jobs in intervention areas stands out, which not only improves livelihoods but also contributes to the high level of satisfaction observed among direct beneficiaries. In terms of risk reduction, canal-cleaning interventions have had the additional unplanned benefit of reducing flood risks in nearby settlements (such as La Coloma) by speeding up the drainage of surface runoff water.

Additionally, there has been a significant effect of local ownership, as evidenced in the Municipality of San Luis, where the community has initiated restoration of a site on its own outside the project's intervention area, and in La Coloma, where the La Playita community has been sponsored by EPICOL for its mangrove restoration efforts.

Another key achievement is the identification of the country's coral types and those at risk, with this knowledge transferred to the government to guide protection measures. As a result, the national coral bleaching network has been strengthened, promoting research and channeling volunteer reports across the country.

An interdisciplinary collaboration among institutions that had not previously worked together has also been consolidated. As noted by the Director of ICIMAR, "we have learned to work in interdisciplinary groups, with institutions we had never collaborated with before." In addition, masters and doctoral theses have been developed to address the project's findings, and several local MSMEs have strengthened the sustainability of their businesses. In some territories, circular economy initiatives have emerged, including proposals for the relocation of landfills.

The project has also fostered significant social transformations within communities. Unplanned outputs have been generated, such as the collaboration with UNICEF Cuba for the application of the Climate Risk Index for Children, which was piloted by FLACSO specialists in areas where *Mi Costa* is being implemented.

However, some operational challenges have been identified that were not fully anticipated. Within the hydrological component, logistical issues have delayed the installation of equipment due to fuel shortages or lack of essential materials, and data transmission failures have occurred because of limited mobile coverage or power outages. The high complexity of maintaining the station network and the technical inadequacy of some sensors for Cuban environmental conditions (high salinity/humidity) represent sustainability challenges.

At the methodological level, the hydrological study did not sufficiently address flooding processes that can occur independently of the rehabilitation process, leaving an analytical gap. Finally, it has been noted that the new methodology developed for studying the salt wedge has

not been applied retroactively to historical data, which limits the ability to compare saline intrusion trends over time. Nevertheless, the development of this methodology is a highly positive unexpected result, as it has standardized the calculation of the salt wedge nationwide and facilitated its implementation. Lastly, as previously mentioned, the installation of sensors has been used in some locations to develop early warning systems based on flow thresholds.

4.10 Replication and Scalability

Therefore, it is considered necessary to explore the possibility of using UNDP/GCF resources to cover the purchase of critical equipment and supplies (such as fuel or photovoltaic equipment) essential for the teams' operations. While the government's budgetary commitment for infrastructure and equipment maintenance is secured, the lack of necessary supplies remains a risk.

In terms of replication and scalability, it is considered highly likely that the initiative could be extended nationwide, assuming a similar level of commitment from local governments in provinces not yet covered. It is essential to leverage the technical and scientific knowledge generated (such as the new monitoring network and the saline wedge methodology) to strengthen this type of activity in other parts of the island. However, scalability will focus more on knowledge and methodology transfer rather than on replicating large-scale equipment and machinery purchases. Finally, it is recommended to allocate project resources for exchanges with other countries in the region and to attract external experts who can support national technical teams in areas that require additional expertise.

Lastly, it should be noted that both the Digital Platform and the Environmental Monitoring System could be extended to the rest of the country, as scalability is being considered during the design and implementation of these tools.

4.11 Gender equality

According to the PRODOC, in 2014 women represented between 18% and 19% of workers in forest management. Women's presence and participation in forestry spans all types of occupations, including many traditionally considered male-dominated, yet their numbers remain much lower compared to men. They are also represented across all territorial forestry structures, whether in provincial or municipal forestry enterprises or in settlements. However, according to the latest national employment survey published in 2025, the sex distribution in the Agriculture, Livestock, Forestry, and Fishing sectors was as follows: men 84.3% and women 15.7%. Therefore, this has been a historical inequality upon which Mi Costa has sought to act.

The project developed a survey to better understand the role of women in the supply chains relevant to the project, including agriculture, fishing, the use of non-timber forest products, and forestry. The results showed interest among women residing in the project intervention areas in learning about different types of agricultural activities. At the same time, they responded positively to activities such as gender training workshops and those organized to promote employment opportunities for them.

As a result of these consultations, the following issues were also identified, with a greater negative impact on women:

a) problems with water supply and quality due to saline intrusion, and

b) equity gaps in access to employment.

These findings served the project as a starting point to incorporate diverse approaches and to be better positioned to address the identified challenges. These approaches focused on:

- Specific strategies to include/address women-headed households;
- A more nuanced, data-driven identification of gender gaps through the use of sex-disaggregated data in monitoring implementation results. This also includes accountability of individuals and institutions for outcomes that promote gender equality;
- Ensuring that awareness-raising and sensitization efforts are adjusted to more effectively reflect specific gender differences that may exist. In other words, the strategies of the Stakeholder Engagement Plan have been adopted, taking these differences into account;
- Inclusion of an Environmental and Social Safeguards Specialist with experience in gender mainstreaming and providing advisory support within the project to implement gender-related activities.

The project has included benefits aimed at addressing women's concerns, among them an increased availability of fresh water, which is being tackled through the restoration of the water filtration capacity of coastal wetlands. Likewise, training and capacity-building efforts will further support Cuba in its ongoing promotion of women's empowerment and economic inclusion, providing both men and women with equal opportunities to benefit from the project's activities. In addition, the project's Gender Action Plan includes targets to increase women's participation in the forestry sector.

The capacity-building activities, developed with the participation of the stakeholders involved, helped to improve understanding and management of climate change risks, as well as the functionality and conservation of ecosystems, for multiple actors, including local communities and women. Similarly, the creation of community monitoring systems and the inclusion of women and other key actors in monitoring and planning for climate change impacts and vulnerability will continue to promote equitable gender ownership of the process.

The following achievements can be highlighted:

- Regarding the commitment to achieve gender equality, the coordinated work in the nurseries (Activity 1.2) stands out, as it successfully integrated women who were previously unpaid domestic workers into formal employment. The opportunity to generate employment in the first place —and particularly in traditionally male-dominated sectors— represents a significant gain for gender equality. In addition, these

jobs allow women to balance domestic responsibilities with their personal and professional lives, providing an additional benefit offered by the project.

- The project is contributing to the development of actions in the territories aimed at promoting vocational training for girls in jobs related to the agricultural sector. The integration of agricultural-related activities and lessons directed at women and girls represents a meaningful starting point to expand their future employment opportunities at the local level.
- The inclusion of children in all project activities has contributed to the development of an environmental culture and the strengthening of tools to mitigate and adapt to the effects of climate change. Girls, boys, and adolescents actively participate in awareness-raising actions such as beach clean-ups, mangrove planting, and environmental festivals, ensuring the intergenerational transmission of principles of equity and conservation. This approach represents a positive aspect of the project, as it allows for direct engagement with the community while also influencing the formation of future generations.
- Principle of Leaving No One Behind: Beyond the gender focus, the project applies a broad inclusive principle; an example is the training provided to members of ACLIFIM, an organization of persons with physical-motor disabilities, enabling them to also cope with the impacts of climate change. These actions contributed to strengthening climate resilience among traditionally excluded groups by improving access to information, capacity-building, and community participation spaces, representing a good practice with potential for replication in other adaptation interventions.

The project values and equitably integrates traditional knowledge, particularly from the elderly, fostering an enriching dialogue between ancestral wisdom and scientific rigor.

Some of the project's strengths regarding the promotion and integration of the gender approach, as well as the advancement of gender equality, can be summarized as follows: first, many of the community leaders involved in the project are women who have benefited from training processes and, in several cases, have taken on the role of trainers or knowledge disseminators within their communities. Second, several leaders within the territorial government structure are also women, many of whom have participated in the project's training activities and have actively contributed as facilitators at both the community level and in territorial coordination spaces. Third, these actions are aligned with the National Program for the Advancement of Women 2021[14], decree that reinforces the country's institutional commitment to gender equality and ensures the sustainability of the project's results in this regard.

Challenges remain in the project, particularly in relation to strengthening the gender and equity approach in component 1, which has not achieved the same level of progress as component 2. The latter has had a significant impact in terms of training, with a majority of women

[14] *https://www.tsp.gob.cu/documentos/decreto-presidencial-198-programa-nacional-para-el-adelanto-de-las-mujeres*

participating, either as beneficiaries or as facilitators. However, these actions have not been sufficiently present in the technical components. On the other hand, there is recognition of the opportunity to continue incorporating a gender perspective across all areas of the project. In this regard, it is necessary not only to encourage greater participation by women, but also to move towards their empowerment, promoting their leadership, decision-making and equitable access to opportunities at all levels of intervention.

4.12 Impact of COVID

The impacts of COVID-19 in Cuba cannot be analyzed solely from a health perspective, but must be understood in light of the profound socioeconomic consequences it brought to the country. Measures to contain the pandemic caused a partial economic shutdown, exacerbating preexisting economic crisis conditions and creating a complex environment for the implementation of any development initiative.

The project design phase faced slight complexity due to temporary restrictions on physical movement for discussions and exchanges. However, this did not prevent the proper completion of the planning phase. Fortunately, the Mi Costa project began implementation at a time when these restrictions were ending, which benefited its execution, as it was not directly affected and initial activities could be carried out.

Reflecting the context in which it was formulated, the project document formally identified COVID-19 as a potential risk, given the uncertainty regarding its future evolution and possible impact on planned activities. However, evidence showed that this risk did not materialize. The project's inception workshop, with broad in-person participation (and virtual participation by international consultants) proceeded without incident, clearly demonstrating that Cuba was returning to normality. It should be noted that, ultimately, the greatest impacts on project implementation are due to the socioeconomic crisis currently experienced by Cuban society.

5. Findings, Conclusions and Recommendations

5.1 Findings

1. A new methodology for analyzing the saline wedge has been developed and is currently in the final stages of approval. Although initial application has begun, the methodology has not yet been applied retroactively, which limits the ability to conduct temporal comparisons and assess trends in saltwater intrusion over time.

2. The installation of multiple hydrometric stations and sensors—including water level and velocity sensors, rain gauges, wells, and multiparametric instruments—has significantly strengthened national monitoring capacity. Maintenance training has also been delivered, and data flows to the INRH situation room are operational. However, persistent challenges affect data transmission and equipment maintenance, largely due to constraints related to fuel availability, connectivity, and limited operational resources.

3. The activity aimed at implementing the Monitoring System, including the development of climate information products to support Early Warning Systems (EWS), lacks a clearly defined operational design. While the installation of monitoring stations provides valuable data, no coherent framework has yet been established to translate this information into actionable decision-making improvements. In addition, several cross-cutting challenges continue to undermine system sustainability, including technical failures caused by sensors not fully adapted to local environmental conditions, limited mobile coverage and electricity supply, and the complexity of maintaining an extensive network of stations.

4. The project faces financial risks driven by inflation and broader economic instability in the country. These conditions restrict the availability of financial resources needed to sustain planned activities and to retain qualified technical personnel, posing a risk to continuity and long-term performance.

5. The Environmental Monitoring System (EMS) represents a robust and innovative tool that integrates environmental and socio-economic indicators, effectively linking ecological processes with social analysis. Nevertheless, its full operability remains dependent on the consolidation of data update protocols and continued institutional strengthening to ensure system maintenance and effective use at the local level.

6. The Mi Costa Project's digital platform integrates three distinct components: the training module (MOOC), the EMS, and the climate information products. While this integrated approach supports knowledge sharing, the coexistence of multiple functions within a single environment introduces risks of technical and functional complexity by bringing together objectives and user groups with very different needs.

7. The project management unit is experiencing an overload of functions, compounded by a decline in specialized human capital at the national level. These factors may negatively affect implementation efficiency and pose risks to the project's technical sustainability.

8. Ensuring that project interventions contribute sustainably to the strengthening of local livelihoods remains a critical issue. As the project enters its later stages, it is essential to consolidate tools, capacities, and mechanisms that enable the generation of durable economic and social opportunities, thereby supporting the continuity of achieved results and the well-being of participating communities.

9. The national context continues to present significant challenges to project implementation, influencing timelines, operational capacity, and the execution of planned activities.

10. The current methodology for calculating beneficiaries does not sufficiently reflect Cuba's complex demographic dynamics, characterized by high levels of internal and external migration. This limits the accuracy of beneficiary estimates and the interpretation of coverage indicators.

11. At the time of the interim evaluation, the project has not yet demonstrated substantial progress in the full development and operationalization of the Monitoring System, including its community monitoring component, which remains at an early stage of implementation.

5.2 Conclusions

The project has proven to be an ambitious and strategic initiative for the Republic of Cuba, aimed at strengthening climate resilience from the highest levels of government down to coastal communities, which constitute the group most affected by climate change impacts. Its relevance lies in its comprehensive approach, multisectoral participation, and the strong commitment demonstrated by national authorities, research institutes, and the technical teams involved, whose scientific and professional standards are outstanding.

Nevertheless, the project's implementation faces a complex operational context. In Cuba, limited access to basic inputs such as fuel, electricity, connectivity, and spare parts imposes significant constraints on implementation. These limitations affect the operational capacity of the Project Management Unit, despite systematic efforts to anticipate and mitigate their effects.

Field missions require thorough planning and, even then, sometimes they must be canceled due to a lack of resources. Likewise, intermittent electricity and connectivity supply restrict the functioning of meteorological stations, sensors, and early warning systems, reducing the efficiency of environmental monitoring.

Power outages hinder the daily work of technical teams, particularly in rural areas, where the hours with electricity supply are fewer than those without. This situation forces professionals to reorganize their schedules, often connecting late at night or in the early morning to maintain reporting and operational communication.

Limited connectivity also affects training activities. Most courses must be conducted in person, which restricts territorial reach and the possibility of scaling up the project's impacts. Although the eleven courses designed by *Mi Costa* will soon be available in virtual format (currently only one is fully available online), their full use will depend on the availability of electricity and internet access.

These difficulties, combined with an initial delay in project implementation[15], resulted in slower progress during the first 18 months, particularly in Outcome 1, related to mangrove restoration. This has affected the achievement of the results initially expected by the project's midterm.

Despite these challenges, the level of commitment and technical quality of the Project Management Unit and associated institutions is remarkable. There is strong engagement from the highest authorities down to technical staff and field workers. All of them proudly identify as part of the *Mi Costa* team, each giving their best to ensure that the project fulfills its objectives and meets its commitments to the Green Climate Fund and UNDP. This dedication helps mitigate the contextual difficulties mentioned earlier and sustain progress under adverse conditions.

At the local level, in provinces and municipalities, a similar level of engagement can be observed among authorities, state-owned companies, community organizations, and the general population. Children, youth, and adults actively participate in reforestation and environmental education activities, demonstrating a growing awareness of the importance of climate change adaptation.

The project has also generated positive impacts in terms of local employment, creating new job opportunities that strengthen social acceptance and the sense of ownership among beneficiary communities. Moreover, GCF-funded investments in equipment have helped reduce the technological gap, improving national capacity for data generation and early warning systems.

The project has also taken into account the specific concerns of women in coastal communities, such as the need for greater access to fresh water, which is being addressed through the restoration of the water filtration capacity of coastal wetlands. In line with this, training and capacity-building efforts will further support Cuba in its ongoing promotion of women's empowerment and economic inclusion, providing both men and women with equal opportunities to benefit from the project's activities.

Additionally, the support provided by UNDP during implementation has been instrumental in mitigating the constraints faced by the Project Management Unit in terms of energy and

[15] *This was explained by delays in complying with the conditions established by the GCF related to conducting a hydrological rehabilitation risk study prior to the third disbursement; and adjusting the methodology for calculating beneficiaries as a condition of the second disbursement.*

connectivity access. In this regard, and as a regular practice, UNDP provides the PMU team with workspace and internet access at its office, facilitating the implementation of activities and helping to overcome these challenges.

In conclusion, if current conditions remain stable, *Mi Costa* is expected to achieve its final goals within the allocated budget. However, a further deterioration of the operational context could require additional measures, including strengthened support from UNDP to ensure the continuity and sustainability of the results achieved.

5.3 Recommendations

1. Retroactively apply the new saline wedge methodology, using historical data to establish temporal comparisons and evaluate trends in saline intrusion under different climatic and management conditions.

2. Strengthen the maintenance and operation of the network of hydrometric stations, ensuring the supply of basic resources (fuel, materials, connectivity, and spare parts) and the technical adaptation of sensors to environmental conditions in Cuba. Strengthen data transmission and storage protocols, promoting the use of alternative technologies in areas with coverage and energy limitations, such as radio frequency systems or autonomous solar energy.

3. Develop a pilot plan for impact-based predictions, integrating hydrological, meteorological and vulnerability information, with the participation of INRH, INSMET and Civil Defense. This approach will enable technical data to be transformed into more useful and action-oriented alerts. Formalize inter-institutional agreements and interoperability protocols for the exchange of information between technical entities and response systems, ensuring consistency between monitoring, forecasting and decision-making. Ensure the institutional and financial sustainability of the system by defining clear responsibilities for the maintenance of the various components, recurring budget allocations and continuous training mechanisms for technical staff.

4. Allocate resources to study the increase in carbon storage linked to the restoration of coastal ecosystems, aligning efforts for potential incorporation into the international carbon market and receiving compensation within the framework of blue carbon projects, thereby generating resources that will enable the sustainability of the Mi Costa project's actions.

5. Consolidate the EMS as an independent operational module within the platform, ensuring its regular updating, interoperability with other national databases, and active participation of local communities in monitoring; considering the support of international experts in its design and implementation.

6. Clearly define the architecture and governance of the platform, separating its three dimensions into distinct digital environments or domains (MOOC, EMS and climate information products), but maintaining their interoperability under common technical coordination. With regard to the MOOC, it would be useful to measure the increase in the population's resilience to climate change as a result of the learning modules.

7. It is suggested that an organizational review be carried out to redistribute responsibilities more equitably, strengthen technical teams in the territories, and establish transition mechanisms to ensure operational continuity in the event of personnel changes. If necessary, it is recommended that external experts be hired to strengthen the Management Unit. In addition, it is recommended that mechanisms for documentation and knowledge transfer be established. This may include operating manuals, training programs and digital repositories that facilitate the technical continuity of the project; the UNDP could lead these activities. Finally, it is suggested that exchanges be promoted with the provinces that have achieved the best results and progress in the context of the project, so that they can lead processes at the national level that serve as a guide for other jurisdictions.

8. Maintain and strengthen the link between project actions and territorial development plans. Through these plans, priority should be given to sustainable productive activities such as ecotourism, agriculture, and responsible fishing, capitalizing on the environmental benefits being developed by the project to generate sustainable income and jobs over time. In this regard, special emphasis should be placed on women and young people in order to safeguard the benefits provided by the project in relation to gender and generational perspectives. Promote the installation of autonomous solar photovoltaic systems. These can be used for weather stations and training spaces, but also for nurseries. This will facilitate the continuity of environmental monitoring and technical training, as well as the continuity of production and income generation through nurseries.

9. It is recommended to incorporate flexible mechanisms for project implementation that allow for adjustments to timelines, priorities, and implementation modalities in response to changes in the national context. This includes: Increasing continuous monitoring of project actions and results to enable timely and well-informed decision-making. This implies holding Project Board meetings every two months in order to: i) identify alternative scenarios, ii) establish response protocols for crisis situations, and iii) assess the relevance of reducing the number of planned activities—in either quantity or scope— based on criteria of impact, efficiency, and relevance. At some point, the Project Board should consider prioritizing certain provinces over others, with the aim of concentrating human and financial resources to fully achieve all project goals in two or three provinces that could serve as models for the rest. To do so, the project's scope in some provinces would need to be reduced, limiting the range of activities implemented in those areas.

10. It is suggested that the methodology for counting beneficiaries be adjusted to take into account the limitations of access to updated global figures and high population mobility. It is therefore recommended that the changes to the methodology set out in the document: 'Proposal for Updating the Methodology for Calculating Beneficiaries', drawn up by the Management Unit, be incorporated.

11. It is recommended that a roadmap be designed and that the process of implementing the Mi Costa project monitoring system be initiated as soon as possible. The possibility of obtaining direct technical support from the UNDP office in Cuba could be evaluated, hiring experts with UNDP resources.

5.4 Lessons Learned

The project demonstrates that:

- Ecosystem-based adaptation requires strong integration between science, governance, and community participation.
- Flexible and adaptive management approaches are essential in contexts of high uncertainty.
- Investment in local capacities and social ownership is critical for sustainability.
- Early integration of gender, inclusion, and LNOB approaches strengthens both impact and legitimacy.

1. ANNEX

6.1 ANNEX. IE assessment matrix

Evaluation Criteria Questions	Indicators	Sources	Methodology
Project Strategy: To what extent is the project strategy relevant to the country's priorities, national ownership, and the best path toward expected results?			
To what extent is the project aligned with national and sectorial priorities and policies?	Level of alignment of the project with national plans and strategies (environment, development, gender, climate change).	National and sectorial policy documents, project documents, interviews with decision-makers.	Document review, semi-structured interviews.
Does the project design adequately incorporate the needs of local communities?	Number and quality of consultations conducted during design, inclusion of community demands in the project.	Design workshop minutes, interviews with communities, reports from local partners.	Document review, semi-structured interviews, and focus groups.
How coherent is the project's Theory of Change with expected results?	Existence of a clear Theory of Change, consistency between inputs, activities, outputs, and impacts.	Project documents, planning reports, logical frameworks.	Theory of Change analysis, stakeholder validation.
Were risks and assumptions adequately identified and addressed in the design?	Number of risks identified and mitigated, quality of mitigation strategies.	Project risk matrix, planning documents, interviews with technical teams.	Document review.
To what extent does the project strategy contribute to international commitments (SDGs, Paris Agreement, and CBD)?	Number of international targets to which the project contributes, explicit alignment in documents.	International organization documents, project documents.	Alignment mapping, comparative analysis.
Does the project strategy promote national and local ownership and sustainability?	Level of national participation in design, complementary financing mobilized, evidence of institutional ownership.	Meeting minutes, financial reports, interviews with national institutions.	Semi-structured interviews, participation analysis, document triangulation.
Progress Toward Results: To what extent have the expected results and objectives of the project been achieved so far?			
To what extent have the outputs and intermediate results established in the logical framework been achieved?	Percentage of outputs and results achieved versus planned.	Monitoring and evaluation reports, project databases.	Quantitative analysis, document review.

What progress is observed in key environmental and social indicators?	Forest area conserved, number of beneficiaries, participation of women and Indigenous peoples, reduction in deforestation.	Project documents.	Quantitative analysis, document review.
What factors have facilitated or hindered achievement of results?	Number and type of internal/external factors identified.	Progress reports, interviews with implementers and partners.	Semi-structured interviews, context analysis.
Has the project generated any unintended (positive or negative) impacts?	Evidence of emerging, unplanned results.	Project reports.	Document review.
What evidence exists of changes in institutional or community capacities?	Number of trainings conducted, level of adoption of new practices.	Training records, project documents.	Semi-structured interviews.
What is the perception of beneficiaries and key stakeholders regarding result effectiveness?	Percentage of beneficiaries perceiving improvements in quality of life or environmental management.	Surveys, interviews, focus groups.	Structured surveys, qualitative analysis.
To what extent are the results attributable to the project and not to external factors?	Evidence of causality between activities and results.	Monitoring reports, counterfactual analysis (if available).	Contribution analysis.
Project Implementation and Adaptive Management: Has the project been implemented efficiently and cost-effectively, and has it been able to adapt to changing conditions so far? To what extent do project-level monitoring and evaluation systems, reporting, and communications support implementation?			
Has the project used financial resources efficiently and cost-effectively relative to the results achieved?	Budget execution rate, cost-effectiveness ratio.	Financial reports, audits, expense records.	Financial analysis, document review.
To what extent has the project governance structure been effective?	Clarity of roles and responsibilities, level of coordination among partners.	Statutes, meeting minutes, interviews with implementers.	Document review, semi-structured interviews.
How timely and of what quality have monitoring, reporting, and communication processes been?	Compliance with schedules, number of reports submitted, technical quality of reports.	Monitoring reports, official communications.	Document review, quality analysis.
Has the project demonstrated capacity to adapt to changing conditions?	Number of adjustments implemented in response to risks or contextual changes.	Revised plans, meeting notes, management reports.	Document review, interviews.

Have learning and feedback mechanisms been applied in project management?	Number of lessons learned documented and applied.	Learning reports, systematizations, workshop records.	Document review, lessons learned analysis.
Have monitoring and evaluation systems supported informed decision-making?	Evidence of M&E information used in management decisions.	M&E reports, decision meeting minutes.	Decision-making process analysis.
Has the level of participation of beneficiaries and stakeholders been sufficient and effective?	Number and diversity of actors involved, level of satisfaction with participation.	Workshop records, interviews, monitoring reports.	Semi-structured interviews, focus groups.
What good practices and lessons learned can be replicated in other contexts?	Number of practices replicated or disseminated.	Systematization reports, publications, interviews.	Experience systematization, replicability analysis.

6.2 ANNEX. Fieldwork Schedule

Monday, September 22	**Tuesday, September 23**	**Wednesday, September 24**	**Thursday, September 25**	**Friday, September 26**	**Saturday, September 27**	**Sunday, September 28**
14:00 – Meeting of the Evaluation Team (ET) with the Resident Representative and UNDP project team 15:00 – Inception meeting of the Midterm Evaluation	09:00 – Interviews with CITMA 11:00 – Interview with the Directorate of International Organizations of MINCEX 14:00 – Exchange meeting with the Project Management Unit (PMU) and key stakeholders	09:00 – Meeting with MINAG 11:00 – Meeting with FLACSO 14:00 – Meeting with INRH 16:00 – Interview with the Directorate of International Relations of CITMA	**Field visit to Ciego de Ávila**	**Field visit to Ciego de Ávila**	**Field visit to Ciego de Ávila**	**09:00** – Review of information by the evaluation team

Monday, September 29 Field visit to Pinar del Río	**Tuesday, September 30** Field visit to Pinar del Río	**Wednesday, 1 October** 09:00 Meeting with ATR and UNDP Cuba team 11:00 Review of information and preparation of preliminary report 15:00 Presentation of preliminary report and findings	**Thursday, October 2** Return flights for international consultants			

6.3 ANNEX. Checklist of documents to be reviewed in the IE according to the ToR

#	Documents	Receipt control
1	Funding Proposal	✓
2	Funded Activity Agreement (FAA)	✓
3	UNDP project document	✓
4	Results of the UNDP environmental and social assessment	✓
5	Baseline studies	✓
6	Initial project report	✓
7	All Annual Performance Reports (APRs)	✓
8	Progress reports and work plans from the various implementation task forces.	✓
9	Audit reports	✓
10	Monitoring reports	✓
11	All monitoring reports produced by the project.	✓
12	Financial and administrative guidelines used by the project team	✓
13	Operational guidelines, manuals, and project systems.	✓
14	UNDP country or countries programme document(s)	✓
15	Minutes of Project Board meetings and other meetings (e.g. Project Evaluation Committee meetings)	✓
16	Project site location maps	✓

6.4 ANNEX. List of informants

INTERVIEWEES IN THE FIELD

UNDP Team:

Fernando Hiraldo, Resident Representative

Grisel Acosta, Programme Officer, NCE

Oreste Perdomo, Project Coordinator

Michel Oms, Implementation Associate

Marietta Chávez, Financial Assistant

Ministry of Science, Technology and Environment (CITMA):

Maritza García, President of the Environmental Agency (AMA)

Lisbet Font, Director of International Relations, CITMA

Pedro Julio Ruiz, Specialist, Directorate of International Relations

José Fidel Santana, First Vice Minister, CITMA

José Manuel Guzmán Menéndez, Project Director

Roberto Núñez Moreira, Director of the Institute of Marine Sciences (ICIMAR)

Jazmín Núñez Luis, National Coordinator, Tarea Vida Project

Esther Salgueiro, Component 2 Coordinator

Israel Tamarit Herrán, Component 1 Coordinator

Leudis Lafita Sánchez, Project Administrator

Jessica Fernández Casañas, Director of Natural Resources, General Directorate of Environment, CITMA

Ministry of Foreign Trade and Foreign Investment (MINCEX):

Carlos Fidel Martín, Director Specialist, Directorate of International Economic Organizations (DOEI)

Jessie Coto, DOEI Specialist

Raúl Rodríguez, Specialist, Directorate of Cooperation Received by Cuba

University of Havana:

Maday Alonso, Vice-Rector for Research and Postgraduate Studies, University of Havana

Latin American Faculty of Social Sciences (FLACSO) Cuba:

Martha Rosa Muñoz

Arianna Rodríguez, FLACSO Cuba

Ministry of Agriculture (MINAG):

Arturo Forteza, Director, State Forestry Service

Georgina Díaz, State Forestry Service

Gabriel Brull, OSDE Flora y Fauna

Odalis Álvarez, OSDE Agroforestry

National Institute of Hydraulic Resources (INRH):

Fermín Sarduy, Director of International Relations

Yanet Triana, President of the Inland Waters Group (GIAT)

René Infante, GIAT Specialist

Authorities and Participants from Municipalities:

* Venezuela – Ciego de Ávila
* Júcaro – Ciego de Ávila
* Consolación del Sur – Pinar del Río
* San Luis – Pinar del Río
* Pinar del Río – Pinar del Río
* La Coloma – Pinar del Río

EPICOL – La Coloma Industrial Fishing Company

6.5 ANNEX. Semi-structured interview guide

Semi-structured interview guide[16]

Date	
Interviewees	
Name	
Position	
Tel.	
Email	

[16] *This guide contains general questions prepared by the consulting team for each evaluation criterion. In each interview, these questions will be tailored to the interviewee's profile, so not all of them will necessarily be asked.*

Introduction:

● Give a brief introduction of the person conducting the interview and thank the interviewee for their time.

● Concisely introduce the main purpose of the evaluation and the method through which information will be collected.

● Ask if the interviewee has any questions or doubts before formally starting the interview.

● Make it clear that all collected information will be kept strictly confidential and ask for permission to record the interview (for online interviews), specifying that it will be used solely for reference purposes.

General Information

What is your position and institutional affiliation?

How is your work related to the project, and since when have you been involved as a partner?

Project Strategy

1. To what extent is the project aligned with national and sectoral priorities and policies?

2. Does the project design adequately incorporate the needs of local communities?

3. How coherent is the project's Theory of Change with the expected results?

4. Were risks and assumptions adequately identified and addressed in the design?

5. To what extent does the project strategy contribute to international commitments (SDGs, Paris Agreement, Convention on Biological Diversity)?

National Ownership of Projects and Programs

6. Does the project strategy promote ownership and sustainability by national and local actors?

Progress Toward Results

Relevance, Effectiveness, and Efficiency

7. To what extent have the outputs and intermediate outcomes established in the logical framework been achieved?

8. What progress is observed in key environmental and social indicators?

9. What factors have facilitated or limited the achievement of results?

10. What evidence exists of changes in institutional or community capacities?

11. What is the perception of beneficiaries and key stakeholders regarding the effectiveness of results?

12. To what extent are the results attributable to the project rather than external factors?

13. Is the level of co-financing execution as planned? Have any additional co-financing contributions been incorporated that were not initially foreseen?

14. Has the project used financial resources efficiently and cost-effectively in relation to the results achieved?

Coherence in Climate Finance Provision with Other Multilateral Entities

15. Are there other donor-funded projects aligned with this intervention?

Unexpected Results, Both Positive and Negative

16. Has the project generated any unforeseen (positive or negative) impacts?

Project Implementation and Adaptive Management

17. To what extent has the project governance structure been effective?

18. How timely and of what quality have monitoring, reporting, and communication processes been?

19. Has the project demonstrated the capacity to adapt to changing conditions?

20. Have learning and feedback mechanisms been applied in project management?

21. Have the monitoring and evaluation systems enabled informed decision-making?

22. Has the level of participation of beneficiaries and stakeholders been sufficient and effective?

Replicability and Scalability

23. What good practices and lessons learned can be replicated in other contexts?

24. How is it planned for the results of the *Mi Costa* project to be transferred to other regions of Cuba and to other Caribbean countries facing similar challenges?

25. Which practices and knowledge are expected to be highly transferable, and which will pose the greatest challenges for replication due to technical, institutional, or financial complexity?

Risks to Sustainability

26. What are the main identified risks (economic, financial, institutional, environmental, socio-political) that could jeopardize the sustainability of project results in the medium and long term?

27. Beyond participation during implementation, is there evidence of concrete commitment from national or local actors to ensure the continuation and scaling-up of project initiatives after completion?

28. Are the strengthened institutional and community capacities robust enough to withstand institutional changes, economic fluctuations, or turnover of key personnel?

29. Beyond participation during implementation, what mechanisms have been established to ensure that local governments and coastal communities have the technical, financial, and motivational capacity to sustain project actions?

30. Has your institution/local government discussed or planned how to include the project's maintenance or replication of learned methodologies in future budgets?

Gender Equality

31. Could you provide examples of how the project's gender plan has been translated into concrete actions in the field?

32. Beyond gender, have other dimensions been considered to ensure equity in access to benefits and to prevent systematic exclusion of more vulnerable population groups (e.g., generational)?

33. What mechanisms have been established to ensure and measure the meaningful participation, leadership, and decision-making of women in all project spaces?

34. Is there evidence that the project's intervention has contributed to a significant increase in the representation and effective participation of women in formal and informal decision-making spaces related to coastal management and governance?

35. Regarding gender gap reduction, women's economic empowerment, and facilitating access and control over resources—are there tangible advances or results that can be attributed to the project?

Innovative Character in Result Areas

36. What specifically is the innovation introduced by the *Mi Costa* project?

37. What concrete results so far demonstrate that the project's innovative approach is working and offers advantages over conventional adaptation practices?

38. Do capacities, incentives, and regulatory frameworks exist for these novel approaches to be adopted, maintained, and scaled by key actors after the project ends?

39. Finally, is there any crucial aspect you consider important about the project that has not yet been discussed?

Guide for focus groups

Date	
People interviewed	
Community	

Introduction:

- Give a brief presentation of the person conducting the focus group and thank the interviewees for their time.
- Briefly introduce the main purpose of the evaluation, as well as the method through which the information will be collected.
- Ask if participants have any questions or doubts before formally starting the interview.
- Make it clear that all information collected will be strictly confidential.

General Information

– What is your position and institutional affiliation?
– How is your work related to the project, and since when have you been a partner in it?

Block 1. Knowledge and perception of the project

1. How did you first hear about the Mi Costa project?
2. What does this project mean to your community?

Block 2. Relevance and perceived benefits

3. What are the main benefits you, your family, or the community as a whole have received?
4. Which project activities do you consider most useful or important?

Block 3. Changes in the community

5. Have you noticed any changes in the coastal environment (beach, mangrove) since the project began?
6. Have the community's capacities to adapt to climate change improved (e.g., storm preparedness, ecosystem care, livelihoods)?
7. What social or economic changes have you observed (employment, community organization, tourism, etc.)?

Block 4. Participation and governance

8. How have you participated in the project's decisions or activities?
9. How easy or difficult has it been to participate?
10. Do you feel that the community has had a voice and influence in decision-making?
11. Which groups have been more involved and which less?

Block 5. Gender equity and vulnerable groups

12. Have women had opportunities to participate and make decisions within the project?
13. What specific benefits have women and youth received?
14. Were there any individuals or groups excluded from the activities or benefits?

Block 6. Sustainability and future

15. What do you think will happen with the project's actions once funding ends?
16. Which activities do you think the community can sustain on its own?
17. What support will be needed from the local government or other institutions to ensure continuity?

Block 7. Innovation and learning

18. Have you learned new things thanks to the project (techniques, knowledge, forms of organization)?
19. Which practices do you consider innovative and useful for other coastal communities in Cuba?

Block 8. Closing

20. If you could give advice to those managing the project, what would you tell them?
21. What important aspect do you think we haven't discussed that should be recorded?

Guide for preliminary observation

Observation Guide

Date:	
Time/Observation time:	
Place:	

I) Spatial context

– Type of place

– Accessibility

– Spatial layout

II) Characteristics and behaviors of the interviewees

– Number and characteristics of the people present (sex, skin color, age group, roles)

– Body language and gestures

– Tone of voice and speech patterns

– Degree of comfort/anxiety

III) Interaction and relational dynamics

– Hierarchical relationships

– Control of the conversation (leaders/community)

– Unexpected events

IV) Observed content versus spoken content

– Consistencies

– Contradictions

– Emphases, sensitive topics, topic avoidance

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