

Project Performance Report

Overview

Period of Report (Dates)	6/1/2022 - 12/5/2022
Project Title	Adapting to climate change through integrated water management in Panama
Project Summary	Panama is considered a highly vulnerable country to climate change impacts. Panama experiences a series of extreme weather events including intense and protracted rainfalls, windstorms, floods, droughts, wildfires, earthquakes, landslides, tropical cyclones, tsunamis and ENSO/El Niño-La Niña events. Panama is considered one of the countries with the largest water resources, approximately 35,000 m³ of renewable freshwater resources per capita. This relative abundance scenario hides a series of regional and seasonal limitations, specifically those associated to the most arid region of the country known as the “Arco Seco”. This relative water abundance scenario and increasing conflicts are aggravated by climate variability and extreme weather events, mainly droughts and floods, where users and authorities have a lack of means and information to face them timely and effectively. This project situates water management at the center of the adaptation efforts, promoting climate resilience and vulnerability reduction through enhancing food and energy security, based on an integrated water resources management approach that highlights the water-energy-food-climate change adaptation nexus. To do this, the project will focus efforts in two river watersheds, Chiriquí Viejo and Santa María, both prioritized in light of its water resources, its importance for energy and food production at a national scale, and the existence of unsolved conflicts among water users. The overall objective of this programme is to establish climate resilience water management to enhance food and energy security at the national level, including an integrated and community-based approach in the Chiriqui Viejo and Santa Maria Watersheds. Specifically, the programme will be addressing the following objectives: •Increasing climate change and variability adaptation capacity in agriculture, livestock and energy production sectors; •establishing climate resilient water management instruments with

	integrated and community based approach;•strengthening local national capacity for monitoring and decision making to reduce and respond to risks associated to climate change; and•raising awareness and establish a knowledge exchange platform to respond to and to reduce impacts of climate related events.
Database Number	AF00000086
Implementing Entity (IE)	Fundacion Natura
Type of IE	National Implementing Entity
Country(ies)	Panama
Relevant Geographic Points (i.e. cities, villages, bodies of water)	Chiriquí Viejo and Santa Maria Watersheds
Name of Implementing Entity Focal Point	Rosa Montañez / Vilna Cuéllar

Project Milestones	
AFB Approval Date	10/5/2016
IE-AFB Agreement Signature Date	6/20/2017
Start of Project/Programme	6/6/2018
Actual Mid-term Review Date (if applicable)	
Original Completion Date	6/5/2021
Revised Completion Date after approval of extension request (if applicable)	12/5/2022

Were there any approval condition for this Project?

No

List each approval condition, if any, and report on the status of meeting them	
Category of condition	
Condition or Requirement	
Current Status	
Planned actions, including a detailed time schedule	

List (only) inception report/ extension request(s)/ MTR that have been prepared for the project and provide date(s) of submission for each

Inception workshop report, Inception article "Adapting To Climate Change Through Integrated Water Management in Panama" in Natura Panamá web page: <http://www.naturapanama.org/fondo-de-adaptacion/> Adaptation Program Video (Initial) Work plan and budget 2018, 2019 and 2020 Environmental and Social Safeguards workshop report for executing entities Quarterly Program Progress Reports 1st, 2nd, 3rd and 4th PPR of the program Webinar Panama on the Road to Adaptation: Capacity Building Book on Sustainable Livestock Farming and Adaptation to Climate Change Technical Documents: Technical sheets of the sustainable livestock adaptation measures implemented. 2022. Guidelines for replication at the national level of rainwater harvesting systems. April 2022 Technical manual for the design of rainwater harvesting systems (SCALL). 2022 Guide for training in rainwater harvesting systems for subsistence producers, under the learning-by-doing system. Dec. 2021 Guide on soil conservation. 2021. Guide on genetic improvement of coffee. 2021 Guide on fertilization and nutrient balance in coffee plantations. 2021 Guide on gender and climate change. 2021 Guide on balanced design of agroforestry systems. 2021 Guide on monitoring coffee diseases. 2021 Guide on understanding climate change and how to face it. 2021 Technical guide to agroecological management and irrigation system in rice cultivation. 2022 Technical guide to agroecological management and irrigation system in the orchard. 2022 Technical booklet for the production of organic fertilizers and efficient microorganisms. 2020. Technical Primer of Good Practices for Integrated

Management of the Coffee Drill Bit. 2020 Pest and Disease Monitoring Plan. 2020 Guide for the agroecological production of naranjillas. June 2021 Guide for the agroecological production of orchids. June 2021 Detailed diagnosis, development of a climate vulnerability study and a climate change adaptation plan for the Santa María River watershed. 2020 Study of current and future vulnerability to variability and Climate Change pre-design of Adaptation measures in the Santa María River Basin. 2020 Climate Change Adaptation Plan for the Santa María River Basin. 2020 District Water Security Plan of the Highlands of Chiriquí. 2021 District Water Security Plan of Santa Fe, province of Veraguas and the Study of Water Balance and Environmental Flow of the Gallito River. 2021 Panama Crop Soil and Climate Zoning Report. 2022 Risk diagnosis identifying potential threats, historical events and their impacts, and communities threatened and vulnerable to meteorological events, Chiriquí Viejo River Basin. 2021 Manual for the design, installation, operation and maintenance of community early warning systems for floods and landslides in the Chiriquí Viejo basin. 2021 Action protocols for each basin on the early warning system. 2021 Risk diagnosis identifying potential threats, historical events and their impacts, and communities threatened and vulnerable to meteorological events, Santa María River Basin. 2021 Manual for the design, installation, operation and maintenance of community early warning systems for floods and landslides in the Santa María River basin. 2021 Action protocols for each basin on the early warning system. 2021 Infographics: Trees in Livestock Systems, Livestock and Climate Change, Restoration of Tree Cover in Pastures, Division of Pastures and Rotational Grass, Living Fences, Electric Fences, Forage Bank, Silvopastoral Systems. Use of coffee hybrids as a breeding strategy to face the adverse effects of the climate. Fertilization and nutrient balance in coffee plantations. A measure for improving production and adapting to climate change Conserving the soil of the coffee plantation is also adapting to climate change. Importance of trees and balanced design of agroforestry systems in coffee farms for adaptation to climate change. Monitoring of coffee diseases to strengthen resilience to climate change. Systematizations: Systematization and lessons learned from the project Adaptation measures for sustainable livestock breeding in the middle and lower basin of the Santa María River. Systematization of adaptation experiences and lessons learned during the implementation of the rainwater harvesting system in the Chiriquí Viejo and Santa María river basins. Systematization of experience and lessons learned from the process of adaptation of production systems to the effects of climate change, including the incorporation of results from the 3 different irrigation models with the application of efficient and low-cost technology. Systematization of the adaptation experiences implemented by the project including lessons learned. 2022 Systematization of improved sectoral support through climate finance instruments in the Santa María and Chiriquí Viejo River Basins in the Republic of Panama. 2021 Systematization of a process of socialization of the concept of financing for ecosystem-based adaptation and adaptation to climate change. December 2021. Systematization of the Detailed Diagnosis, Development of a climate vulnerability study and a Climate Change adaptation plan for the Santa María River Basin. December, 2020. Systematization of the specific objectives of the project for the Implementation of an Early Warning and Monitoring System for Areas at Risk of Floods and Landslides in the Chiriquí Viejo Watershed. 2021 Press Releases La Prensa. 18 January Nov. 2022. Systems to obtain mist water. La Crítica digital. 17 January, 2022. New technology to capture water arrives in the country <https://www.critica.com.pa/nacional/nueva-tecnologia-para-captar-agua-llega-al-pais-620960> La Crítica. 15 Nov. 21. Melquiades Vásquez Rainwater Harvesting. <https://www.pressreader.com/panama/critica/20211115/281814287111960> Webinar Agroforestry: Strategy for Adaptation to Climate Change in Panama. Sustainable Livestock.

List the Website address (URL) of project

<https://adaptación.miambiente.gob.pa>

Project Contacts			
National/Regional Project Manager/Coordinator	Name	Email	Date
National Project Manager	Vilna Cuéllar	vcuellar@naturapanama.org	6/30/2017
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Executing Agency	Juan Carlos Rivas	jcrivas@sinaproc.gob.pa	3/2/2020

Financial Data

Disbursement of AF grant funds	
Cumulative total disbursement from Trustee to IE as of date (\$)	\$9,967,559.00
Estimated cumulative total disbursement from IE to EEs as of date (\$)	\$9,809,853.12
Project disbursement rate (%)	100
Project execution rate (%)	106.68
Add any comments on AF Grant Funds	Of the cumulative investment income, USD\$46,738 was used to strengthen products
Investment Income (\$)	\$0.00
Cumulative Investment Income since inception (\$)	\$0.00

Expenditure Data	
Output	Amount (\$)
1.1 Concrete adaptation measures implemented for household water security	\$46,589.76
1.2 Pilot climate smart farming projects implemented	\$334,351.16
1.3 Pilot diversified financing and income source models implemented in vulnerable population areas	\$121,635.54
1.4 Concrete adaptation measures implemented for sustainable cattle ranching	\$57,048.00
1.5 Enhanced sectorial support through climate financing instruments	\$27,484.97
2.1 Analysis for climate change vulnerability done in prioritized areas at the Chiriqui Viejo and Santa Maria River Watersheds	\$0.00
2.2 Developed technical criteria for granting water use concessions and permits in order to reduce/avoid conflicts among users and increase ecosystem resilience in response to climate-induced stress	\$0.00
2.3. Increased hydrological security in prioritized areas at the Chiriquí Viejo and Santa María rivers watersheds, in line with advances of the National Plan for Water Security	\$63,437.87
3.1 Designed and in operation the National System for Climate Data (NSCD), by upgrading ETESA's existing network for recording climatic information from hydrographic watersheds	\$1,800.00
3.2 Established an early warning system to identify in advance, the necessary measures in case of hydro-climatic events that could affect food production and power generation	\$109,264.05
3.3 The NSCD interfaced and equipped with a joint node, with the Ministry of Agriculture Development, to generate and manage climatic information	\$197,160.46
3.4 Designed a monitoring and evaluation tool to assess effectiveness of climate change adaptation measures implemented by the program and national efforts	\$0.00
4.1 Improved awareness of watersheds vulnerability and participation of population groups in adaptation measures	\$67,115.83
4.2 Strengthened professional capacities for the climate data analysis and processing, for different sectors involved	\$1,530.85

4.3 Strengthened professional capacities on water resources management by incorporating climate change adaptation approach	\$16,305.12
4.4 Systematized and disseminated experiences on climate changes adaptation, nationwide	\$272.98
4.5 Portal for Climate Change Adaptation in Panama, implemented	\$76,387.49
IE fee (\$)	\$156,780.21
Execution cost (\$)	\$224,534.91

Planned Expenditure Schedule

Output	Projected Cost (\$)	Estimated Completion Date
0	\$0.00	12/5/2022
IE fee (\$)		\$0.00
Execution cost (\$)		\$0.00

Actual co-financing (if the MTR or TE have not been undertaken this reporting period, do not report on actual co-financing)

Does this Project have Co-Financing ?	Yes
How much of the total co-financing as committed in the Project Document has actually been realized? (\$)	
Estimated cumulative actual co-financing as verified during Mid-term Review (MTR) or Terminal Evaluation (TE). (\$)	\$1,477,432.96
Add any comments on actual co-financing in particular any issues related to the realization of in-kind, grant, credits, loans, equity, non-grant instruments and other types of co-financing.	Co-financing is not presented in the project document. The implementing entities and NGOs provided co-financing for the implementation of the products.

Risk Assessment

Identified Risks

List all Risks identified in project preparation phase and what steps are being taken to mitigate them

Identified Risk	Current Status	Steps taken to mitigate risk
E-1 Could climate variability affect the production cycle of the project (eg. change of season or increased rainfall, extended dry season) and therefore the achievement of the expected quality, quantity and time? For example, would tree species to be planted be suffering an alteration in the project calendar (production of seedlings, planting date, and survival rate after planted?) Would rice crops be suffering	Moderate	• Constant verification of the program to avoid negative impacts on the production cycle (rescheduling of planting dates and quantities). • Preventive control of pests and diseases to keep plants healthy and obtain better development. • Fertilizations to the soil when the rainy season begins so that the ground would have good humidity and thus avoid nutrient losses and plant burn.

for lack of water to allow expected yields?		
E-2. Could the adverse weather conditions affect the schedule for installing i) water harvest systems, ii) hydro-agro meteorological stations, iii) EWS?	Low	During this phase, the following systems had already been installed: i) water harvesting systems, ii) hydro-agro meteorological stations, iii) early warning systems.
E-3. Are infrastructure elements (named in E-2) in zones susceptible to seasonal flooding or landslides, flooding rivers or other environmental phenomena that may affect the works?	Low	The project did not undertake any actions in areas prone to seasonal floods or landslides, river floods, or other environmental phenomena that could affect the execution of its work. Therefore, agro-meteorological station installation was carried out according to technical criteria.
E-4. Could the program generate adverse environmental impacts?	Low	The program did not generate any adverse impacts on the environment.
E-5. Are the program areas susceptible to fire (whether caused by human or natural actions)?	Low	Although the sites are not typically susceptible to fire, the executing agencies remain vigilant to address any emerging risks promptly. Moreover, they are conducting regular awareness-raising activities to ensure that all project stakeholders know about the potential risks and the necessary prevention measures.
E-6. Could the presence of pests in the program areas affect the production process? (i.e. agroforestry systems, agro-silvo pastoral systems, rice / orchids crops)	Moderate	Pests can affect the development of program activities, which is why a proactive approach is maintained to respond promptly. For example, the agroforestry projects in the Santa Maria and Chiriqui Viejo river basins hold constant monitoring for pest and disease surveillance, allowing for better decision-making using economic thresholds and agroclimatic variables based on surveillance and incidence rates. -Improved species and varieties were used, along with integrated pest management. The training was provided on pest identification, management, and control, as well as the preparation of organic fertilizers for use in the plots. - Agroclimatic tables were developed by provinces where the project is being executed, providing recommendations to the producers. Agroclimatic bulletins were also developed and disseminated, summarizing the recommendations of the agroclimatic committees for the agricultural and livestock sectors and the respective adaptation measures. -We continue with weed management practices (removing hosts through cleanings) and good nutrition practices (application of granular and foliar fertilizers in combination with organic pesticides for preventive and curative use through spraying)."
E-7. Could changes in the context (ex. large infrastructure projects, changing government policies, etc.) affect the relevance of the project to achieve the environmental goals set?	Moderate	The Project maintained its relevance until the end; no changes in government policies or other changes prevented the achievement of the environmental objectives set.
E-8. The scale of the program is not appropriate in the context of the level of the threat and the pressure that is intended to	Low	The project was appropriately scaled and designed based on the needs identified by key stakeholders. The selected sites were relevant, and the program results have positively impacted the communities, effectively addressing the food security concerns of

address?		producers and their livestock. Furthermore, beneficiaries have reported additional income due to their participation in the project. The project results are linked to increasing adaptive capacity to climate change and variability in the agriculture and livestock sectors and improving institutional capacity and awareness of climate change adaptation. The project has also strengthened local and national monitoring and decision-making capacities, crucial in reducing and responding to climate change risks.
I-1. Is there scarce information that prevents Natura Foundation to mitigate or take the risks to which it is exposed in the program?	Low	Fundación Natura implemented various measures to ensure effective communication and information flow to mitigate or assume the risks associated with its program. Sufficient information exists because we can access a wide range of data sources. For example, we receive information from executing entities, NGOs, and producer partners as we have established communication channels with these stakeholders to gather information on potential risks. Additionally, constant communication with government entities and civil society demonstrates a proactive approach to risk management. This approach has helped us identify and mitigate risks before they become critical. Finally, communication between the implementing entities, NGOs, beneficiaries, and Fundación Natura has ensured that risks are identified and managed effectively. In addition, it enables a collaborative approach to risk management, where all stakeholders can contribute to identifying and addressing any risks that may arise. In general, Fundación Natura has a comprehensive approach to risk management, which is essential for the success of its program.
I-2. Is there insufficient information that prevents the implementing organizations to mitigate or take the risks to which it is exposed in the program?	Low	The communication channels between the executing entities, producer partners, executing entities, and the NIE were kept working effectively. Therefore the stakeholders were able to communicate and share information regularly. Moreover, the program had mechanisms to ensure that sufficient and timely information was available in any risk situation, and stakeholders could act quickly to correct or eliminate any situation that may pose a risk. The executing agencies, including MIDA, MiAmbiente, ETESA, and SINAPROC, had experienced technical personnel who provided information and early alerts on any situation that may arise during program execution. This highlights the importance of having qualified and experienced personnel who can identify potential risks and take appropriate actions to manage them. Overall, the program's efforts to maintain adequate information and communication mechanisms, along with experienced technical personnel, allowed it to proactively approach risk management, which is critical for ensuring its success.
I-3 Other information risks	Low	There were no information risks during the project. Institutional and community stakeholders provided sufficient and timely information in the project intervention areas, facilitating decision-making and execution of actions.
S-1. Is the program in an area of actual or potential conflicts over natural (land, water) resource use?	Moderate	There are risks in the Chiriquí Viejo river basin and the upper part of the Santa María river basin (potential hydroelectric and wind energy zone). Through the website of the Adaptation Fund Program hosted on the Ministry of Environment's server, the

		project generated technical and scientific tools and information available nationally, which facilitates decision-making to mitigate or resolve possible conflicts that may arise.
S-2. Are there tense situations between stakeholders needed to be solved to implement the program?	Low	This local workforce has a knowledge base and experience from previous projects. The executing non-governmental organizations strengthened the local staff's capacity to carry out and supervise activities in the field. Also, the technical teams of the executing entities (MIDA, Mi Ambiente, y SINAPROC) were strengthened on adaptation to climate change and specific project issues.
S-3. Does the local workforce lack the necessary profile to implement the program?	Low	This local workforce has a knowledge base and experience from previous projects.
S-4. Is there an adequate level of training of involved individuals and communities to implement the program? Consider, skills training and the ability to react proactively to address the problems that can be encountered in implementing the program.	Low	The beneficiaries had previous knowledge obtained from initiatives carried out in their communities. In addition, actors' capacities were strengthened through training, field days, and the exchange of national and international experiences, which made it easier for them to participate, contributing to the achievement of the activities and objectives that were expected. Each component executed training plans for producer partners and executing technicians. The topics covered included climate change, agroecological management of naranjilla and orchids, vegetative reproduction of orchids, principles of organic fertilization, soil management, installation and management of nurseries, pest and disease control, theoretical-practical training in rainwater harvesting, drip irrigation systems, division of pastures, rotational grazing and electric fences, protection and management of water, fodder banks, livestock, and biodiversity, demonstration of management methods for grasses and scattered trees in pastures, gender, environmental and social safeguards, among others. During the COVID pandemic, the methodology to carry out these pieces of training was adjusted, as allowed by the Ministry of Health (virtual or limited face-to-face capacity). Training sessions were limited to a maximum capacity of 10 people at each event.
S-5. Are key actors or beneficiaries highly unlikely to continue in the process of the program in the short, medium and long term?	Low	The beneficiaries' interest in the activities carried out under the project has increased. Beneficiary partners are committed, trained, and skilled in the different modalities of climate change adaptation projects. In component 1 of the project, most of the stakeholders are replicating good adaptation practices on their farms; in the second component, the two district water security plans of the municipalities of Santa Fe and Tierras Altas have been incorporated into the annual municipal work plans (established according to the resolutions: Municipal Resolution No.15 of November 15, 2021 - Municipality of Santa Fe and Municipal Agreement No.100. In the second component, the flood early warning system has been institutionalized in the Emergency Operations Center attached to SINAPROC; progress is being made in the design for monitoring and evaluating the effectiveness of climate change adaptation measures in the ten prioritized sectors "Nationally Determined Contributions"; in component three, the agro-climatic roundtables continue to be developed; and in the fourth component of knowledge management, information is available through the Climate Change Adaptation Program's web page.

S-6. Are there current or potential projects (hydropower, mining, roads, or other) that could transform the land use and thereby affect the participation of direct or indirect beneficiaries of the program?	Low	During the execution of the program, no evidence was available regarding the existence of this type of project that would transform the use of the land in the intervention areas, nor was there any impact on the participation of direct and indirect beneficiaries.
S-7. Could there be social or behavioral patterns resulting from the presence of labor introduced through the projects (mentioned in S-6) that could transform land-use and bring problems to communities that may affect the program implementation and the intended transformation?	Low	There are no projects or knowledge of potential projects that could change land use and create problems affecting program implementation and expected results.
S-8. Is there a lack of leadership in the program areas, especially amongst the young people, that might affect the program?	Low	On the contrary, the Program encouraged youth participation by forming the Naranjilla Project youth group "Amigos del Río Gallito" (Friends of the Gallito River). This group is made up of sons and daughters of producer members. The young people support their parents in training, environmental education activities, and the hydro-agroforestry shed project on the Chiriqui Viejo River. All of the above has strengthened social relations between parents and children and, in general, within the family, linking family activities at home and on the farm. -In the livestock projects, young people actively participate in farm activities as part of the family. Conversely, the male and female youth population has generally been migrating to urban cities due to the lack of opportunities in rural areas. In recent years, this trend has been beginning to reverse. Some of those who migrated have returned to their communities due to the unemployment situation in the country, produced in part by the COVID pandemic.
S-9. Are the communities and beneficiaries of the program indifferent to the problems that affect them in order to find solutions?	Low	No. The stakeholders with whom the program was implemented supported the proactive initiatives they led in the communities. Participating families are motivated and empowered to contribute to local development in harmony with the environment and social cohesion with key regional stakeholders.
S-10. Can a lack of partners for the program (that can take a leadership role and mobilize action to create local cohesion and participation to the program and its processes), be possible?	Low	No. The expected number of partners participated, and as the program was implemented, the demand for participation increased. Therefore, participation and funding are fundamental elements for the project's sustainability.
S-11. Are there no conditions for the empowerment and leadership of communities, organizations and / or key individuals -with gender considerations- after completion of the processes	Low	The key stakeholders had an organizational base at the beginning of the program. The Fundación Natura-supported program strengthened the empowerment and leadership, learning, and experience of community organizations and key stakeholders, with gender considerations, so that their initiatives are expected to be sustainable in the long term. For example, in the communities of the Chiriqui Viejo River watershed and the Santa

provided from the Natura Foundation?		Maria River watershed, there are associations formed among women and others that include both men and women. These groups work to promote the development of their communities. Their efforts translate into higher quality products and increased income generation, which in turn contributes to improving the living conditions of the local population. This improvement is especially evident in the areas of health and education.
S-12. Is there a scarce inclusion of prior, free and informed stakeholders at the various stages of design or implementation of the program?	Low	On the contrary, stakeholders had significant prior, accessible, and informed participation in each project phase, from design to systematization of experiences. The design phase was based on various existing public policies related to climate change and on the recommendations of key stakeholders and civil society leaders. In addition, it included a broad consultation process in the watersheds with the beneficiary population, managers, and technicians of the executing agencies -MIDA, MI Ambiente, ETESA, SINAPROC- and organized civil society. During the implementation phase, dissemination activities were carried out to inform producer partners, watershed committees, and climate change committees about the project and the start of each component. Likewise, the progress of the different program products has been shared through the watershed committees and in meetings with the executing agencies. Key stakeholders also participated in the systematization activities. The final presentation of the program to producer partners is scheduled for March 2023 in both watersheds.
S-13. Is there any indigenous population in the area of program implementation that would require further efforts to ensure its proper participation?	Low	There were no indigenous communities in the project area. However, a seasonal indigenous population came to harvest coffee. This population participated in awareness-raising activities, field days, and training sessions on agroforestry and irrigation projects. In addition, they have experience in providing information and recommendations for some of the consultancies that have been carried out.
S-14. Is there a potential lack of receptivity to the information and activities generated by the program due to absence of awareness, among the beneficiary institutions and stakeholders, about the climate related origin of the problem, instead of considering it is a result of deficient management of natural resources?	Low	The program was well received by the entities directly involved in it and other stakeholders in the agricultural sector. The fact that other actors have expressed interest in replicating the good practices implemented by the producer partners is a testament to the program's success in promoting sustainable agricultural practices that are resilient to climate change. The continuous process of dissemination and sensitization carried out by Fundación Natura and the executing entities is commendable, as it ensures that the knowledge and experiences gained from the program are shared widely and can be applied in other contexts. The involvement of the MIDA's inter-institutional Committee on Climate Change for the agricultural sector is also a positive development. It allows the program's actions to be disseminated more widely and integrated into broader policy frameworks. The program has positively impacted and successfully promoted sustainable agricultural practices resilient to climate change.
L-1. Is the area of the program suitable and free from conflicts over land tenure? Or it isn't?	Low	The program area was deemed suitable for implementing livestock and agroforestry projects, and the absence of land tenure problems facilitated the smooth implementation of the program, allowing intended beneficiaries to enjoy its benefits. Requiring key actors involved in these projects to present their land titles is a good practice that helps ensure the land is used

		legally and respects the rights of landowners. Similarly, defining the permits that key actors must obtain to use the land areas promotes transparency and accountability in program implementation. Overall, the program has taken appropriate measures to address land tenure issues and ensure responsible and sustainable program activities.
L-2. Could the lack of an environmental license to implement the program in any or all phases affect its performance?	Low	• The program develops agroecological projects that aim to adapt to and mitigate climate change, and therefore, they do not require any environmental license to operate. • Coordination and monitoring meetings with executing entities and partners continue to ensure that, in case of regulation changes, all commitments regarding environmental licenses are met according to the different types of projects. • The executing entities on the ground verify that compliance is met. • Disbursements are made as all local permits and compliance regulations are met. • The monitoring and evaluation system indicates any changes in the status of licenses, permits, and strategies for addressing any possible risks.
L-3. Are permits and / or required licences in the different phases of the program clearly identified? Can these not be obtained or fulfilled on schedule, and within the scope, and budget of the program?	Low	The products established in the Adaptation Fund Program did not generate significant environmental impacts, nor did they affect environmental protection criteria, so environmental impact studies were not required. The Terms of Reference included a section on the Legal and Regulatory Framework of the project or consultancy's subject matter, which was followed to ensure compliance.
L-4. Are there inadequate public security conditions for implementing the program?	Low	The main concern is that cattle and equipment have been stolen from some of the silvopastoral project's farms. Steps have been taken to coordinate with security forces and activate a vigilant producer program. The local community has also raised awareness of the problem and encouraged them to report suspicious activity. These efforts to prevent theft create a sense of shared responsibility and increase the likelihood of identifying and apprehending those responsible. By working together and taking proactive measures, it is possible to minimize the impact of theft and maintain project success.
Ec-1. Does the program fail to generate viable economic alternatives or conditions for the participation of key stakeholders, including individuals?	Low	Public consultations have been conducted since the project's design phase, as this ensures that local needs and perspectives are considered. Also, viable economic alternatives have been identified, as this can help promote the project's sustainability by generating income for local stakeholders. Implementing agroforestry and livestock projects provide a source of food and income. Therefore, it is vital to ensure that these projects remain relevant and that local stakeholders are engaged and committed to their success. Purchasing fence posts directly from producer partners and other local producers has been a great way to support the local economy and promote sustainability. This approach can create a more resilient and self-sufficient community by reducing the dependence on external suppliers. The project takes a holistic approach by considering economic, social, and environmental factors. Therefore, it is essential to continue to engage with local stakeholders and monitor the project's impact to ensure that it remains relevant and effective in meeting local needs.
Ec-2. Does the program lack of	Low	The program provided financial support to beneficiaries and

a component that provides some economic support to achieve a viable long-term success of the actions, processes and ensures continued environmental impacts from the program?		implementing entities to help them successfully implement the projects. In addition, the program provided a variety of goods and services necessary for project implementation, such as training, advice, technical materials, and other essential items. In addition to providing financial support, the program also emphasized training and the development of long-term relationships with key stakeholders to promote sustainability. Working closely with producer partners helps them improve their marketing efforts and achieve better results. The program supports on-the-ground project implementation and promotes sustainable development through strategic investments in key areas. By providing support and resources to beneficiaries and implementers, the program can ensure that projects are successful and positively impact the communities they serve.
Ec-3. Is there a current or potential presence of land speculation arising from improving farms, attracting buyers who could transform land use or reverse the progress and achievements of the program?	Low	The executing entities, producer partners, Natura technicians, and other allies indicated they were unaware of any land speculation. At the beginning of the program, the EE signed agreements with the associated producers to guarantee that the farm would not be sold, at least in the medium term. With the implementation of suitable practice measures for adaptation to climate change established by the Program, it has been possible to show families the economic and environmental benefits that can be obtained by continuing and replicating what has been achieved. Moreover, with the return of young people to rural areas, there is a greater likelihood that the program's good practices will continue.
Ec-4. Is the population of the area influenced by factors of access to service facilities and job offers which makes them less interested in the program?	Low	In the upper part of the CHRSM, there are no initiatives that make the producer partners less interested in the program. In the lower and middle part of the Santa María river basin and the Chiriquí Viejo Basin, there are shops, mills, dairies, hydroelectric plants (Chiriquí). The creation of sources of income, market opportunities, and specific training (in agroforestry issues, orchids, orange trees, livestock, among others); will have a direct impact on the communities that will help the population to remain in the area and will discourage the search for employment options outside the communities.
O-1. Is there insufficient involvement and coordination among institutions to maintain EWS, hydro stations, as well as the forest cover and ecosystem features that help prevent (among other impacts) floods and erosion?	Moderate	Improved internal coordination within MIDA, which facilitated the completion of projects in compliance with the Program's goals. The executing entities maintained coordination and teamwork to comply with the agreements. For example, MIDA and MiAmbiente worked in coordination to prepare the zoning map using climate scenarios (MiAmbiente) and soil data for crops (MIDA) and climate data (ETESA); the early warning system for floods in the two basins has been incorporated into the national prevention system coordinated by ETESA and SINAPROC. Improved internal coordination was observed between the Agroecology and Climate Change Unit and the regional agencies of MIDA. The agreement between MIDA-ETESA continues its implementation.
O-2. Do implementing organizations lack the strengths, skills and institutional capabilities in administrative, financial and technical areas to implement	Low	Fundación Natura provided administrative support to the institutional executive bodies to facilitate the procurement of goods and services. Technical capacities were strengthened in social and environmental safeguards, project monitoring and evaluation, implementation of technical training plans (forestry, agroforestry, climate change adaptation, among others) and

the projects?		participatory agroclimatic technical roundtables to meet the goals of the National Climate Data Systems Office.
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Critical Risks Affecting Progress (Not identified at project design)

Are there any critical risks with a 50% or > likelihood of affecting progress of project? Yes

Identify Risks with a 50% or > likelihood of affecting progress of project

Identified Risk	Current Status	Steps taken to mitigate risk
Pandemic	High	The country, in this period, managed to reduce the impact of the COVID pandemic. As a consequence of the COVID-19 pandemic, the following adjustments or changes have had to be maintained: - Rescheduling of monitoring visits to producers for positive cases. - Teleworking continued at the NIES, EE, and NGO levels (virtual meetings and virtual work) at times of increased contagion, following the provisions of MINSA and the Fundación Natura Security Committee. - Biosafety kits were distributed during training and other program activities.

Risk Measures

Were there any risk mitigation measures employed during the current reporting period? If so, were risks reduced? If not, why were these risks not reduced?

In mid-November, health authorities reported that the country was entering the sixth wave, evidenced by the increase in the positivity of the disease and the number of deaths per week. According to the most recent weekly report on the pandemic, between December 18 and 24, 2,817 new cases and 13 deaths due to covid-19 were registered in Panama, raising the number of infections to 1,023,778 and the number of deaths due to the disease to 8,568. During the current period, the Program implemented risk mitigation measures. Specifically, the Program continued to enforce the standards defined by the MINSA health authorities to address the COVID-19 pandemic. These measures included: • Biosecurity measures • Use of masks • Social distancing • Workshops and Virtual meetings. As a result of the impact of COVID-19, an extension of the agreement period was requested. This extension period allowed for the successful completion of all Program components and the systematization of best practices and lessons learned as part of knowledge management.

ESP Compliance

Section 1: Identified ESP Risk Management

Was the ESP risks identification complete at the time of funding approval? No

1.Compliance with the law

Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	Yes
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	"Little compliance with the country's environmental legislation and regulations (national laws, regulations

	and specifications) (L3)"
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	National environmental laws, regulations and specifications that comply with the safeguards for different types of projects were identified, which are included in the terms of reference.
List the monitoring indicator(s) for each impact identified.	"Number of environmental laws included in the terms of reference. "
State the baseline condition for each monitoring indicator	0
Describe each safeguard measure that has been implemented during the reporting period	*Previous safeguards are still applied and monitored. *The programme has complied with the inclusion of environmental requirements in the technical specifications or terms of reference.
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	No residual impacts identified
Describe remedial action for residual impacts that will be taken	No residual impacts identified
2.Access and equity	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	Yes
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	* The target population is not fully trained with gender equality. (I1)
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	"* Guaranteed the participation of men and women under the defined criteria of the program activities. *The participation of the beneficiary communities in the program's activities was ensured through personal calls and invitations. * Co - designed adaptation measures, between executors and community members. * Access to and socialization of the information corresponding to the different projects was facilitated. "
List the monitoring indicator(s) for each impact identified.	"* Population trained by sex. * Public calls on sites with easy population access. * # of youth in program activities to develop community leaders "
State the baseline condition for each monitoring indicator	0
Describe each safeguard measure that has been implemented during the reporting period	Previously applied safeguards were followed up: * Selection criteria (gender, education, socioeconomic and environmental) have been included to guarantee the participation of the communities in the calls for proposals and events carried out within the program. * Calls for projects and consultancies which were open to the general public. * Gender mainstreaming is considered at all stages of the project.
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	No residual impacts identified

Describe remedial action for residual impacts that will be taken	No residual impacts identified
3.Marginalized and vulnerable Groups	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	Yes
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	"Inequality in access to water for use by human and domestic consumption and productive activities. "
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	"*Alternatives for water access are established for farms, such as protection of water sources for productive use through tree planting; *preparation of a diagnosis of farms in critical situation of access to water; *Identification of solutions for the area: watering holes, wells (drilling, restoration or installation of pumps with solar panels); *Training on water issues. "
List the monitoring indicator(s) for each impact identified.	"# of farms with water access guaranteed by the program
State the baseline condition for each monitoring indicator	0
Describe each safeguard measure that has been implemented during the reporting period	During the closure period, monitoring continued on the safeguards previously implemented to help reduce the risk associated with inequality in access to water for productive and domestic use among beneficiaries, particularly those in the most vulnerable situations. During this period, beneficiaries continued to care for and monitor the planted native trees, helping to maintain the conditions necessary for their establishment and long-term survival. In addition, the Ministry of Agricultural Development (MIDA) continued monitoring the beneficiary farms. These farms were included in MIDA's internal monitoring records from the beginning of the project, which allowed for continued technical support and monitoring of the implemented measures, even after the project's closure.
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	The monitoring conducted during the project closure period did not identify any situations that significantly compromised the effectiveness of the measures previously implemented. Therefore, the residual risk is considered manageable through the established maintenance and monitoring actions, as well as the continued involvement of the relevant institutions and beneficiaries.
Describe remedial action for residual impacts that will be taken	At project closure, it was established that any potential residual impacts that could affect the benefits achieved will be addressed through the monitoring mechanisms of the competent institution,

	the Ministry of Agricultural Development (MIDA), as well as through the maintenance activities that will continue to be carried out by the beneficiaries. In this way, the measures implemented are expected to be sustained over time, while allowing for the timely management of any situation that may arise after project completion.
4.Human rights	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	No
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	
List the monitoring indicator(s) for each impact identified.	
State the baseline condition for each monitoring indicator	
Describe each safeguard measure that has been implemented during the reporting period	
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	
Describe remedial action for residual impacts that will be taken	
5.Gender equality and women's empowerment	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	Yes
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	"The local workforce lacks the academic profiles necessary to implement the program activities. (S-3)."
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	* Training for technical teams without distinction of gender, race, creed.
List the monitoring indicator(s) for each impact identified.	"*Number of executing entities with technical team fulfilling the academic profiles, experience and knowledge in the area of the program *Number of projects with a technical team meeting the academic,

	experience and knowledge profiles of the area *Number of trainings for technicians and producer partners"
State the baseline condition for each monitoring indicator	"0 0 0"
Describe each safeguard measure that has been implemented during the reporting period	*Previous safeguards are still applied and monitored: * MiAmbiente, MIDA, ETESA, and SINAPROC maintain technical teams with vast experience in program topics in their regional and local offices, with gender equity. * Local technicians hired to carry out projects or consultancies meet the profile (academic experience and knowledge of the project area). * Training has been provided to technicians and program partners in the different projects and consultancies.
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	No residual impacts identified
Describe remedial action for residual impacts that will be taken	No residual impacts identified
6.Core labour rights	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	No
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	
List the monitoring indicator(s) for each impact identified.	
State the baseline condition for each monitoring indicator	
Describe each safeguard measure that has been implemented during the reporting period	
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	
Describe remedial action for residual impacts that will be taken	
7.Indigenous people	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	No

List the identified impacts for which safeguard measures are required (as per II.K/II.L)	There are no indigenous communities in the program area, so no risks have been identified.
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	No mitigation measure had to be implemented in the reporting period
List the monitoring indicator(s) for each impact identified.	No mitigation measure had to be implemented in the reporting period
State the baseline condition for each monitoring indicator	0
Describe each safeguard measure that has been implemented during the reporting period	No safeguards were activated during this period.
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	does not apply
Describe remedial action for residual impacts that will be taken	does not apply

8. Involuntary resettlement

Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	No
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	
List the monitoring indicator(s) for each impact identified.	
State the baseline condition for each monitoring indicator	
Describe each safeguard measure that has been implemented during the reporting period	
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	
Describe remedial action for residual impacts that will be taken	

9. Protection of natural habitats

Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	No
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	
List the identified impacts for which safeguard	

measures are required (as per II.K/II.L)	
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	
List the monitoring indicator(s) for each impact identified.	
State the baseline condition for each monitoring indicator	
Describe each safeguard measure that has been implemented during the reporting period	
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	
Describe remedial action for residual impacts that will be taken	
10.Conservation of biological diversity	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	No
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	No
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	
List the monitoring indicator(s) for each impact identified.	
State the baseline condition for each monitoring indicator	
Describe each safeguard measure that has been implemented during the reporting period	
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	
Describe remedial action for residual impacts that will be taken	
11.Climate change	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	Yes
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	Massive vegetation fires caused by anthropogenic factors (E5). The presence of pests in the program

	area affects the production process (agroforestry, silvopastoral, and other systems); (E6).
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	*Activating fire protection measures during the period has not been necessary. *In the case of pests, applying organic fertilizers for pest and disease control continues.
List the monitoring indicator(s) for each impact identified.	Number of maintenance visits for pest and disease control
State the baseline condition for each monitoring indicator	0
Describe each safeguard measure that has been implemented during the reporting period	No fire protection measures had to be applied during the reporting period. Four maintenance operations were carried out on the plots where adaptation measures were applied in agroforestry projects.
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	No fire protection measures had to be applied during the reporting period.
Describe remedial action for residual impacts that will be taken	No fire protection measures had to be applied during the reporting period.
12.Pollution prevention and resource efficiency	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	Yes
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	Environmental laws and regulations are not complied with. (L3)
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	Elaborate plans for the prevention and management of waste and contamination for projects of component 1 that require it.
List the monitoring indicator(s) for each impact identified.	Number of waste and pollution prevention and management plans developed
State the baseline condition for each monitoring indicator	0
Describe each safeguard measure that has been implemented during the reporting period	During the project closure period, no additional safeguard measures were required. However, the continued implementation of the waste management and pollution prevention measures previously established on the farms of producers who required them was verified. At project completion, beneficiaries continued to apply appropriate waste management and pollution prevention practices on their farms, ensuring continuity of the measures promoted during project implementation.
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	Monitoring conducted during the project closure period confirmed that waste management and pollution prevention measures continued to be applied on the farms where they were required. No

	instances of environmental non-compliance or significant residual impacts associated with the generation or improper management of waste and pollutants were identified. The residual risk is therefore considered low and manageable through the continued application of the practices established by the beneficiaries
Describe remedial action for residual impacts that will be taken	As no significant residual impacts related to waste management and pollution were identified at project closure, no additional corrective measures were required. Producers will continue to apply the waste management and pollution prevention practices implemented during the project on their farms, helping to maintain the environmental conditions achieved and prevent potential future impacts.
13.Public health	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	Yes
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	Yes
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	Environmental laws and regulations affecting public health are not complied with (L3)
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	Does not apply in the period
List the monitoring indicator(s) for each impact identified.	Does not apply in the period
State the baseline condition for each monitoring indicator	0
Describe each safeguard measure that has been implemented during the reporting period	Does not apply in the period
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	Does not apply in the period
Describe remedial action for residual impacts that will be taken	Does not apply in the period
14.Physical and cultural heritage	
Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	No
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact	

that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	
List the monitoring indicator(s) for each impact identified.	
State the baseline condition for each monitoring indicator	
Describe each safeguard measure that has been implemented during the reporting period	
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	
Describe remedial action for residual impacts that will be taken	

15.Lands and soil conservation

Are environmental or social risks present as per table II.K (II.L for REG) of the proposal?	No
During project/programme formulation, an impact assessment was carried out for the risks identified. Have impacts been identified that require management actions to prevent unacceptable impacts? (as per II.K/II.L)	
List the identified impacts for which safeguard measures are required (as per II.K/II.L)	
List here the safeguard measures (i.e. avoidance, management or mitigation) identified for each impact that are supposed to be (or had to be) implemented during the reporting period. Please break down the safeguard measures by activity.	
List the monitoring indicator(s) for each impact identified.	
State the baseline condition for each monitoring indicator	
Describe each safeguard measure that has been implemented during the reporting period	
Describe the residual impact for each impact identified - if any - using the monitoring indicator(s)	
Describe remedial action for residual impacts that will be taken	

Section 2: Monitoring for unanticipated impacts / corrective actions required

Has monitoring for unanticipated ESP risks been carried out?	Yes
Have unanticipated ESP risks been identified during the reporting period?	No
If unanticipated ESP risks have been identified, describe the safeguard measures that have been taken in response and how an ESMP has been prepared/updated	

Section 3: Categorisation

Is the categorisation according to ESP standards still	Yes
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relevant?	
If No, please describe the changes made at activity, output or outcome level, approved by the Board, that resulted in this change of categorization.	

Section 4: Implementation arrangements

What arrangements have been put in place by the Implementing Entity during the reporting period to implement the required ESP safeguard measures?	Fundación Natura, in its capacity as the Implementing Entity, monitored compliance with environmental and social requirements through the review of the final technical and monitoring reports submitted by each executing entity, verification of the safeguard measures implemented, and monitoring of the environmental and social risks identified during project implementation. As part of this process, Natura conducted on-site monitoring visits to the intervention sites, both scheduled and unscheduled, to verify that the activities carried out and the safeguard measures implemented were consistent with the information reported in the corresponding reports. At project closure, field visits were also conducted jointly with the executing entities and beneficiaries to verify the status and continuity of the measures implemented, as well as compliance with the applicable environmental and social requirements. The document review and field verifications confirmed compliance with the ESP during the project closure period. In addition, no new environmental or social risks or significant residual impacts requiring additional corrective measures were identified. Measures requiring continuity are being maintained through actions undertaken by the beneficiaries and, where applicable, through the regular monitoring mechanisms of the competent institutions.
Have the implementation arrangements been effective during the reporting period?	Yes
What arrangements have been put in place by each Executing Entity during the reporting period to implement the required ESP safeguard measures?	During the project closure period, the executing entities continued to monitor compliance with the applicable legal and regulatory framework, as well as the environmental and social safeguard measures implemented as part of project activities. This monitoring was carried out through their regular technical assistance and support mechanisms for beneficiaries in the areas of intervention. Regional and local agency technical staff included periodic monitoring visits to beneficiary farms and project sites in their regular work plans, including monthly visits where applicable, to provide technical assistance and verify the continued implementation of the measures established. Coordination and follow-up meetings were also maintained with the executing entities and their regional offices involved in the project's thematic areas. These meetings provided an opportunity to review progress, address

	situations identified during field visits, and reinforce technical guidance provided to beneficiaries. At project closure, these actions confirmed that safeguard measures requiring continuity had been incorporated into beneficiaries' practices and into the regular technical assistance and monitoring mechanisms of the competent institutions, thereby supporting the sustainability of the measures implemented.
Have the implementation arrangements at the EEs been effective during the reporting period?	Yes

Section 5: Projects/programmes with unidentified sub-projects (USPs). This section needs to be completed only if the project/proramme includes USPs.

Have the arrangements for the process described in the ESMP for ESP compliance for USPs been put in place?	Yes
Is the required capacity for ESMP implementation present and effective with the IE and the EE(s)? Please provide details.	Yes
Have all roles and responsibilities adequately been assigned and positions filled?	Yes
Has the overall ESMP been updated with the findings of the USPs that have been identified in this reporting period?	Yes

Identified USPs in the reporting period	Application of ESMP to the USP	ESP risks identified for the USP	Has an impact assessment been carried out?	Consultation held for risks and impacts identification for USP	Gender disaggregation to identify risks and impacts	Safeguard measures identified for the USP	Monitoring indicator(s) for each impact
No	No	No ESP risks were identified	No	No	No	We have no new measures	We have used the same indicators described in the approved document

Section 6: Grievances

Was a grievance mechanism established capable and known to stakeholders to accept grievances and complaints related to environmental and social risks and impacts?	Yes
Were grievances received during the reporting period?	No

List all grievances received during the reporting period regarding environmental and social impacts; gender related matters; or any other matter of project/programme activities	For each grievance, provide information on the grievance redress process	Provide the status/outcome
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GP Compliance

Section 1: Quality at entry

Was an initial gender assessment conducted during the preparation of the project/programme's first submission as a full proposal? No

Does the results framework include gender-responsive indicators broken down at the different levels (objective, outcome, output)? Yes

List the gender-responsive elements that were incorporated in the project/programme results framework

Gender-responsive element	Level	Indicator	Baseline	Target	Rated result for the reporting period
Output 1: Enhanced climate change resilience for improved food, water, and energy security in target watersheds.	Output	No. of people with improved access to water from water harvest systems implemented in targeted watersheds	0	125 women in both of the targeted watersheds.	Good
Output 1.1: Concrete adaptation measures implemented for household water security	Output	Number of people trained on the use and maintenance of the WHS	0	50 women trained on the use and maintenance of the WHS.	Good
Output 1.2: Pilot climate-smart farming projects implemented	Output	Number of people in targeted communities that benefit from climate-smart agroforestry systems implemented	0	At least 50 women, benefit from the climate smart agroforestry systems implemented at the Caisan River Sub-watershed in CVRW	Good
1.3.a Implementation of agroforestry and soil conservation systems - 200 hectares (mainly	Output	Number of people that benefits from the climate resilient shaded coffee agroforestry systems	0	At least 50 women, benefit from the climate smart agroforestry systems implemented	Good

shaded coffee with beans) in the upper section of the watershed		established			
1.3.b Creating capacities for operating orchid and “naranjilla” crops, as well as establishing the correspondent commercialization scheme at the Rio Gallito Sub-Watershed.	Output	Number and percentage of women and men who receive training	0	16 women will receive training	Good
Output 1.4: Concrete adaptation measures implemented for sustainable cattle ranching	Output	Number of women that benefits from the climate resilient cattle ranching projects	0	90 women	Good
Output 1.5 Enhanced sectorial support through climate financing instruments	Output	Number of women farmers that receive technical assistance on access financing sources for climate change adaptation activities	0	4 women farmers from each of the two target watersheds	Good
Output 2.1 Analysis for climate change vulnerability done in prioritized areas at the Chiriquí Viejo and Santa María rivers watersheds	Output	Number of women that participated in the update consultation process	0	100 women participating in the update consultation process.	Good
3.2 Established an early warning system to identify in advance, the necessary measures in case of hydro-climatic events that could affect food production and power generation	Output	Number of women trained and with built capacities on the use of the EWS	0	At least 50 women trained on how to reduce risks to extreme weather events by understanding/using the EWS	Good

Output 3.2 Established an early warning system to identify in advance, the necessary measures in case of hydro-climatic events that could affect food production and power generation	Output	Number of women trained and with built capacities on the use of the EWS	0	At least 6 women staff members trained to respond to and mitigate impacts of climate related events must be woman	Good
4: Awareness raised and a knowledge exchange platform established to mitigate impacts of climate change related events.	Output	No. of people aware of target watersheds vulnerability analyses	1800	125 women will receive technical information delivered by the programme	Good
4.1.c: Socialize the SMRW and CHVRW vulnerability analyses to facilitate the implementation of identified adaptation measures	Output	Number of people that participated during socialization of SMRW and CHVRW vulnerability analyses	0	At least 600 women participating	Good
4.2.a Offer a Climate Modelling Course with special emphasis on future scenarios impacting food-energy generation activities (at least 45 participants)	Output	Number of people trained on climate modelling and future scenarios impacting food-energy generation activities	0	At least 14 women participating in the event	Good
4.2.b Offer an international course on Adaptation to Climate Change: Role of Ecosystem Services (45 participants)	Output	Number of people trained on adaptation to climate change and the role of ecosystem services	0	At least 14 women participating in the event	Good

nationwide, including stakeholders in the two prioritized watersheds)					
4.3.a Offer an international course on participatory and integrated watershed management emphasizing conflict management skills	Output	Number of people trained on participatory and integrated watershed management emphasizing conflict management skills	0	At least 12 women trained on participatory and integrated watershed management emphasizing conflict management skills	Good
4.3.b Offer an international course on ecosystem-based adaptation at marine-coastal zones	Output	Number of people trained on ecosystem-based adaptation at marine-coastal zones	0	At least 6 women trained on ecosystem-based adaptation at marine-coastal zones	Good
4.4.b 10 workshops will be held at national level - 1 per province- to present the document (4.4.a)	Output	Number of people who attended workshops at each province of the country	0	At least 150 women	Good
4.5.a Communication strategy and systematization of experiences from the program	Output	Number and percentage of women and men who receive technical information delivered by the programme	0	number of woman with enhanced capacity in climate change	Satisfactory
4.5.c: Compilation and synthesis of materials for different audiences - farmers, institutions, academia, etc.- on adaptation to climate change (knowledge products)	Output	Number of knowledge products generated and made available to different users by the program Number of people reached by knowledge products from the program	0	600 women and 1400 men will receive specific knowledge products delivered by the programme; ii) 7 knowledge products targeted at women, by content area	Satisfactory
4.5.f Experience exchanges	Output	Number of people trained	0	30 women trained in	Good

activities at the local level, including at least one international pasantía (guided visit):		from technical exchanges		exchange activities at the local level (number of beneficiaries: core impact indicator)	
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Section 2: Quality during implementation and at exit

List gender equality and women's empowerment issues encountered during implementation of the project/programme. For each gender equality and women's empowerment issue describe the progress that was made as well as the results.

Gender equality and women's empowerment issues	Rated result for the reporting period	Provide justification of the rating provided
Empoderamiento de las mujeres a través de proyectos de agro-perforación y ganadería	Satisfactory	The incorporation of women in the projects permeates everything they have learned in their families and supports the incorporation of their children and husbands in the development of these productive activities. The women receive resources from the sale of products, for example: sale of naranjilla marmalade, sale of orchids, marketing of surplus vegetables from their family gardens. The circular economy is being promoted; purchases of materials and food services for different events are made by producer members who receive direct income from the project.

Section 3: Implementation arrangements

What arrangements have been put in place by the Implementing Entity during the reporting period to comply with the GP	The gender plans remain in force and are being followed up by the technical staff of the executing agencies and regional offices. In the specific case of the completed irrigation project, it had a positive impact, particularly on women, by providing them with the necessary water resources to contribute to agricultural production in home gardens for food production at home, thus contributing to the food security of the producer members and their families. Environmental and social safeguards and gender policies continued to be monitored.
Have the implementation arrangements at the IE been effective during the reporting period?	Yes
What arrangements have been put in place by each Executing Entity during the reporting period to comply with the GP?	The executing entities continue to incorporate women, making their contributions visible in the adaptation activities and measures implemented and in the decision-making processes in all productive projects. Through training and sharing of experiences, women have gained a greater awareness and appreciation of natural resources, focusing on producing and marketing orchids and naranjillas and implementing irrigation systems for home gardens. These initiatives have recognized women's potential to generate additional income.
Have the implementation arrangements at the EE(s)	Yes

been effective during the reporting period?	
Have any capacity gaps affecting GP compliance been identified during the reporting period and if so, what remediation was implemented?	Yes Comments: Despite the efforts made in the livestock projects, there is still a need for a higher level of awareness and information to allow greater participation of women in the different processes. Similarly, it is necessary to continue training local technicians in gender issues.

Section 4: Grievances

Was a grievance mechanism established capable and known to stakeholders to accept grievances and complaints related to gender equality and women's empowerment?	Yes
Were grievances received during the reporting period?	No

List all grievances received through the grievance mechanism during the reporting period regarding gender-related matters of project/programme activities [6]	For each grievance, provide information on the grievance redress process used	Provide the status/outcome
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Comments

Rating

Implementing Entity

Project components/outcomes	Alignment with AF outcomes	Expected Progress	Progress to date	Comments	Rating
Component 1. Outcomes: Enhanced climate change resilience for improved food, water, and energy security in target watersheds	Outcome 6	The results of the project "Improving the climate resilience of agricultural production in the Upper and Lower Chiriqui Viejo River Basin (CHRCHV) by securing water resources and establishing irrigation systems with efficient and low-cost technologies" were presented. The 50 water harvesting systems target has been reached, with ten systems installed during this period.	Completed		Highly Satisfactory
Component 2. Outcomes: Improved water governance and natural resources management in prioritized	Outcome 1, Outcome 4	Delivery of final products of the component Include the monitoring and evaluation (M&E) system to evaluate	Completed		Highly Satisfactory

watersheds by mainstreaming climate change data		the effectiveness of climate change adaptation measures as a module in Panama's National Climate Change Platform. Activity completed Follow-up and maintenance of installed stations Implementing early warning systems for floods in the Santa Maria River Basin and the Chiriqui Viejo River Basin.			
Component 3. Outcomes: Increased preparedness in target watersheds and reduced risk for disasters among vulnerable communities nationwide Outcomes: Improved access to data for informed, timely decision-making regarding climate variability risks	Outcome 1, Outcome 2	Continuing to strengthen the technical knowledge on agroclimatological topics.	Completed		Highly Satisfactory
Component 4. Outcomes: Improved institutional capacity, knowledge management, and awareness on climate change adaptation	Outcome 2, Outcome 3	Update the Program Portal Finalize national and international experience exchanges.	Completed		Highly Satisfactory

Please provide the Name and Contact information of the person(s) responsible for completing the Rating section

Name	Email
Vilna Cuéllar	vcuellar@naturapanama.org

Please justify your rating. Outline the positive and negative progress made by the project since it started. Provide specific recommendations for next steps.

1. During this period, the outputs proposed for completing the components implemented by MIDA were finalized. The strengthening of the technical team of the Agro-Environment and Climate Change Unit and other MIDA directorates and beneficiaries has contributed to the sustainability of the agro-climatic technical roundtables. 2. MiAmbiente achieved the results established for the components it has implemented. The results are being used to generate greater resilience to climate change. The results of the program are disseminated through the media and in the results presentation events in each watershed prioritized by the program. Internally, MiAmbiente is managing to place a link from the program's portal to Panama's Climate Transparency platform. 3. The program supported installing and commissioning of climate and hydrological stations for real-time observations. This decision was based on analysis and planning by ETESA (now Instituto de Meteorología e Hidrología de Panamá - IMHPA), MIDA, MiAmbiente, and Natura. Observations are directly transmitted via satellite, allowing for early information to facilitate informed decision-making on climate variability risks. Stations were installed in national production areas to meet specific agrometeorological information needs, thus strengthening local capacity to adapt to climate change in the country's watersheds. 4. The EWS was designed using state-of-the-art meteorological and hydraulic models with a monitoring network of hydrometeorological parameters for the two priority basins of the program. The EWS in the Chiriqui Viejo river basin was tested during heavy rains and floods in the CHRChV. This system supported the SINAPROC and ETESA authorities. It was also tested at the CHRSM, providing updated information.

Executing Entity / Project Coordinator

Project components/outcomes	Alignment with AF outcomes	Expected Progress	Progress to date	Rating	
"Reduced exposure to climate-related hazards and threats"	Outcome 1	Completing the consultancy with the International Center for Tropical Agronomy (CICA) for the development of the agricultural zoning map.	Completed		Highly Satisfactory
Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	Outcome 2	To strengthen the National Climate Data System, a robust IT structure was established in the Climate Change Directorate of the Ministry of the Environment. This structure allows for the storage and processing of climate change adaptation data. In addition, it can house the appropriate computer platforms and equipment to develop climate change scenarios to guide planned decision-making. Equipment was acquired for the maintenance of meteorological stations. The National Agroclimatic and Statistical Data System (Agroclimatic Node) continues to provide information to producers and decision-makers through agroclimatic bulletins. These bulletins offer recommendations for the agricultural and livestock sectors.	Completed		Highly Satisfactory
Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	Outcome 3	Internal coordination is being carried out within the Climate Change Directorate of the Ministry of Environment to include program results on Panama's National Climate Transparency Platform. The modules for the Diploma in Climate Change Adaptation for the Agricultural Sector were developed. The curriculum and modules were evaluated and approved by the Academic Vice-Rector's Office and the Vice-Rector's Office for Outreach at the Specialized University of the Americas.	Completed		Highly Satisfactory
Increased adaptive capacity within relevant development sector services and infrastructure assets	Outcome 4	"The stations are currently transmitting agrometeorological and hydrological information via satellite. IMHPA continues with the agreements with the producers for the maintenance and security of the stations located on their farms. "The	Completed		Satisfactory

		stations are currently transmitting agrometeorological and hydrological information via satellite. IMHPA continues with the agreements with the producers for the maintenance and security of the stations located on their farms.			
Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	Outcome 6	During this period, 50 water harvesting systems will be completed: 25 in the Santa María River basin and 25 in the Chiriquí Viejo River basin. The training plan, based on the project's prioritized actions, will be finalized. The document systematizing the experiences and lessons learned will be finalized. Monitoring of the adaptation measures implemented in the agroforestry plots will continue.	Completed		Highly Satisfactory

Please provide the Name and Contact information of the person(s) responsible for completing the Rating section

Name	Email	Institution
Rodrigo Luque / Enilda Medina / Luz Graciela De Calzadilla / Juan Carlos Rivas	rluque@mda.gob.pa / emedina@miambiente.gob.pa / lcalzadilla@hidromet.com.pa / jcrivas@sinaproc.gob.pa	MIDA / MiAmbiente / ETESA / SINAPROC

Please justify your rating. Outline the positive and negative progress made by the project since it started. Provide specific recommendations for next steps.

1. The products implemented by MIDA have ended with good results. In technical monitoring with the regional teams, it has been observed that the adaptation measures implemented with the Programme have been replicated. This indicates that they have been internalized by the beneficiaries and producers who did not participate in the Programme. 2. The program completed the implementation of the products under the responsibility of Panama's Ministry of Environment. They are supporting adaptation strategies in the country. Some of them were strengthened. 3. ETESA. The stations were incorporated into the National Network of Hydrometeorological Stations, contributing to the generation of timely data on climate risks for decision-making. 4. SINAPROC. The products requested in the consultation have been delivered. The simulations have been carried out with the main actors in each basin. The EWS is part of the national civil protection system.

Other

Project components/outcomes	Alignment with AF outcomes	Expected Progress	Progress to date	Rating
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Please provide the Name and Contact information of the person(s) responsible for completing the Rating section

Name	Email
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Please justify your rating. Outline the positive and negative progress made by the project since it

started. Provide specific recommendations for next steps.

Overall Rating

Overall rating

Highly Satisfactory

Please justify your rating. Outline the positive and negative progress made by the project since it started. Provide specific recommendations for next steps.

MIDA: The products implemented by MIDA have ended with good results. In technical monitoring with the regional teams, it has been observed that the adaptation measures implemented with the Programme have been replicated. This indicates that they have been internalized by the beneficiaries and producers who did not participate in the Programme. MiAmbiente: The program completed the implementation of the component products under the responsibility of the Panamanian Ministry of the Environment. Some of them were reinforced. ETESA: The stations were incorporated into the National Network of Hydrometeorological Stations, contributing to the generation of timely data on climate risks for decision-making. SINAPROC: The products requested in the consultation have been delivered. The simulations have been carried out with the main actors in each basin. The EWS is part of the national civil protection system.

Project Indicators

List of indicators

Type of Indicator (indicators towards Objectives, Outcomes, etc...)	Indicator	Baseline	Progress Since Inception	Target for Project End
Outputs	Number of households with improved access to water from water harvest systems installed (number of beneficiaries: core impact indicator)	0	50	50 households with water harvest systems installed (20 SMRW y 11 CHVRW)
Outputs	Number of people trained on the use and maintenance of the WHS	0	120	100 people trained on the use and maintenance of the WHS, of which at least 50% will include women. (number of beneficiaries: core impact indicator)
Outputs	Technical document developed and adopted by the Ministry of Environment	0	1	1 technical document produced and adopted by the Ministry of Environment for

				reference for future replication of this WHS model.
Outputs	Number of farms with agroforestry projects established	0	25	At least 20 farms with climate smart agroforestry (shaded coffee mainly) projects successfully established
Outputs	Number of people in targeted communities that benefit from climate-smart agroforestry systems implemented	0	125	At least 100 people, of which 50% are women, benefit from the climate smart agroforestry systems implemented at the Caisan River Sub-watershed in CVRW
Outputs	Lineal meters of riparian reforestation successfully established	TBD (exact area of existing riparian forest in targeted communities will be determined in the general baseline survey).	9733	6000 lineal meters of riparian reforestation successfully established
Outputs	Diagnostic for irrigation needs completed	0	1	One irrigation needs diagnostic for Cerro Punta and Divalá production areas
Outputs	Number of hectares of climate resilient irrigation systems established	0	26.6	At least 75 hectares of climate resilient irrigation systems at Cerro Punta and Divalá
Outputs	Number of farmers that received technical assistance	0	137	80 farmers
Outputs	Document of the analysis of water footprint for rice crops	0	1	It was impossible to find a local consultant to prepare this document. At the international level, several attempts were made to hire specialists in this field without success. Mi Ambiente, with its technicians and a consultant, prepared a water footprint diagnosis for the Santa María and Chiriquí Viejo river basin.

Outputs	Number of farms with FMP (farm management plans)	0	110	40 farms of approximately 5 hectares each with FMP
Outputs	Number of hectares with climate resilient agroforestry and soil conservation systems established	0	200	200 hectares of agroforestry schemes (mainly shaded coffee with beans)
Outputs	Number of hectares with climate resilient agroforestry and soil conservation systems established	0	480	At least 200 people benefit from the climate resilient shaded coffee systems
Outputs	Percentage of income increase in targeted population households (40 farms)	B/.76.11 mensual	20%	Percentage of income increase by source in targeted population households
Outputs	Number of people trained on establishment and management of orchid and naranjilla crops	0	14 naranjilla producers 4 orchid producers	14 naranjilla producers and 4 orchid producers (100% women), fully trained on crops management and commercialization
Outputs	Number of business plans designed	0	2	2 business plans designed and in operation (one for naranjilla and one for orchids)
Outputs	Marketing agreements with potential buyers	0	5 signed agreements	At least 2 market agreements established for naranjilla and 2 market agreements for orchids
Outputs	Number of hectares with sustainable cattle ranching models	0	600	600 hectares with sustainable cattle ranching models established and in operation
Outputs	Number of FMP developed	0	120	120 farm management plans
Outputs	Number of people that benefits from the climate resilient cattle ranching projects	0	607	At least 600 people benefit from the climate resilient and sustainable cattle ranching projects (10% women)
Outputs	Study and technical recommendations on climate financial	0	1	1 study-review on current credit products offered to

	products designed			agriculture and energy sectors; including technical recommendations on climate financing instruments
Outputs	Number of business plans developed to establish and operate renewable energy projects, including the correspondent FMP	0	4	4 business plans for small scale renewable generation projects (hydro, solar, etc
Outputs	Number of farmers that receive technical assistance on access financing sources for climate change adaptation activities	0	19	16 farmers, 8 from each of the two target watersheds (gender disaggregated target will be determined once the baseline survey is completed, ensuring full compliance with Gender Policy of the Adaptation Fund)
Outputs	Number of microfinance institutions mapping document developed	0	1	1 document with microfinance institutions mapping on both watersheds
Outputs	Number of microfinance institutions interested/willing to participate in training on MEbA	0	17	At least 2 microfinance institutions and/or cooperatives
Outputs	Number of microfinance institutions trained to design climate change oriented finance products	0	17	Number of microfinance institutions trained to design climate change oriented finance products
Outputs	Number of microfinance programmes with MFI and cooperatives designed implemented	0	1	At least 2 microfinance programmes offered by MIFs and/or cooperatives
Outcomes	No. of water security instruments developed for implementation by districts and the national level that	0	8	8 instruments developed and adopted by incumbent regional/national institutions to

	respond to climate-induced challenges			respond to new conditions resulting from climate variability and change
Outcomes	No. of people benefiting from management instruments designed and approved by incumbent authorities, which allow improved and sustainable access to water resources in a changing climate scenario	0	116,322	At least 114,000 people. Include population from target communities, watersheds (combined population of the CHVRW and SMRW)
Outputs	Update of the document of SMRW management plan	0	1	Updated Santa María River Watershed (SMRW) Management Plan including the climate change's dimension
Outputs	Number of people that participated in the update consultation process	0	183	At least 200 people participated in the process, ensuring participation of 50% men and 50% women.
Outputs	Vulnerability analysis document completed for the CHVRW	0	1	Updated- improved CHVRW Management Plan, including analysis of the climate change dimension
Outputs	Number of people that participated in the update consultation process	0	545	At least 200 people participated in the process, ensuring participation of 50% men and 50% women.
Outputs	Technical criteria document developed for granting water use concessions and permits for both watersheds	0	2	2 technical criteria document for granting water use concessions and permits (one for each watershed) developed and validated with the Ministry of Environment and the Ministry of Agriculture
Outputs	Number of	0	3	10 awareness

	awareness meetings with local population and responsible parties in the process of granting water use permits			meetings completed with local population and responsible parties in the process of granting water use permits
Outputs	Number of people that participated in the process of developing the technical document with criteria for granting water use permits for agriculture and power generation	0	45	80 people are consulted between MiAmbiente and MIDA technicians at the national level and the Chiriquí Viejo and Santa María River Basin Committee (made up of government institutions, NGOs, local governments)
Outputs	Technical recommendations document delivered to responsible parties for adjustments needed to improve hydrological cycle at both watersheds	0	1	1 technical document with recommendations for improving or restoring hydrological cycle at both watersheds, delivered to and validated by the Ministry of Environment and the Ministry of Agriculture
Outputs	Number of water security district plans designed	0	2	2 hydrological security district plans designed and adopted by 2 districts of target watersheds
Outputs	National map for agriculture and livestock production developed	0	1	1 national map for agriculture and livestock production developed, adopted and widely published by the Ministry of Agriculture Development (MIDA)
Outputs	A National System for Climate Data designed and in operation	0	1 National System of 45 stations f	1 National System of 45 stations for Climate Data, with upgraded ETESA's network for recording hydro-

				agro meteorological information from hydrographic watersheds
Outputs	Number and type of targeted institutions with increased capacity to minimize exposure to climate variability risks	1	4	4 institutions (ETESA, MiAmbiente, MIDA, SINAPROC) with access to information for decision making to reduce national exposure to climate variability risks
Outputs	Number of new stations installed	72	45 agrometeorological stations y 4 hydrological stations	45 agrometeorological stations y 4 hydrological stations
Outputs	Number of EWS for floods/droughts fully operational	0	2	Two fully operational EWS in the target watersheds (floods).
Outputs	Number of communities included in the CHVRW early warning system	0	44	TBD, but at least 10 communities from CHVRW watershed
Outputs	Number of people trained and with built capacities on the use of the EWS	0	106	At least 100 people trained on how to reduce risks to extreme weather events by understanding/using the EWS
Outputs	Number of staff trained to respond to and mitigate impacts of climate related events	0	33	At least 20 staff members trained to respond to and mitigate impacts of climate related events
Outputs	Number of communities included in the SMRW early warning system	0	12	At least 10 communities from SMRW watershed
Outputs	Number of people trained and with built capacities on the use of the EWS	0	137	At least 100 people trained on how to reduce risks to extreme weather events by understanding/using the EWS
Outputs	Number of staff trained to respond to	0	34	At least 20 staff members trained to

	and mitigate impacts of climate related events			respond to and mitigate impacts of climate related events
Outputs	Joint node of climatic information established between ETESA and MIDA	0	1	1 operational joint node of climate information established between ETESA and MIDA, generating climate change information
Outputs	Number of people trained and with built capacities on the management of the joint node	0	73	At least 20 staff trained and with capacities built to manage joint node and information on climate change
Outputs	Tool designed to assess effectiveness of climate change adaptation	0	1	1 tool designed to assess effectiveness of climate change adaptation measures at national level
Outputs	Number of workshops with public and nongovernmental stakeholders on the tool design	0	42	At least 3 workshops with public and nongovernmental stakeholders on the tool design
Outputs	Number of people from relevant stakeholders trained and with built capacities to use the assessment tool	0	188	At least 80 people trained and with built capacities to use the assessment tool
Outputs	Number of training sessions held	0	"21 working sessions 75 interviews in the Santa Maria River basin. 6 workshops. 208 surveys applied"	2 working sessions with the technical team and key implementing partners
Outputs	Percentage of project staff trained	0	100%	100% of staff trained
Outputs	Percentage of key implementing partners trained	0	100%	100% of key implementing partners trained
Outputs	Number of inception workshops with local and national stakeholders to present the approved programme; revisit programme rationale, scope, define shared visions	0	4	At least 2 local workshops, one for each watershed with local stakeholders; and 1 national workshop with government and civil society stakeholders to present the

	and operational arrangements for programme implementation.			Programme, identify synergies with other ongoing adaptation efforts/initiatives and define operational and coordination aspects
Outputs	Number of people that participated during socialization of SMRW and CHVRW vulnerability analyses	0	179,933	At least 2,000 people in both target watersheds
Outputs	Number of people trained on climate modelling and future scenarios impacting food-energy generation activities	0	46	At least 40 people trained on climate modelling and future scenarios impacting food-energy generation activities
Outputs	Number of people trained on climate modelling and future scenarios impacting food-energy generation activities	0	42	At least 40 people trained on adaptation to climate change and the role of ecosystem services
Outputs	Number of people trained on participatory and integrated watershed management emphasizing conflict management skills	0	44	At least 40 people trained on participatory and integrated watershed management emphasizing conflict management skills
Outputs	Number of people trained on participatory and integrated watershed management emphasizing conflict management skills	0	45	At least 20 people trained on ecosystem-based adaptation at marine-coastal zones
Outputs	Number of people trained on participatory and integrated watershed management emphasizing conflict management skills	0	1	1 document produced in print (500 units) and digital formats, broadly disseminated nationwide
Outputs	Number of news outlets in the local press and media that have covered this dissemination of experiences	0	12	At least 6 news outlets in the local press and media that have covered this dissemination of experiences
Outputs	Number of people	0	593	At least 500 people

	who attended workshops at each province of the country			(50 in each province)
Outputs	Systematization document developed	0	8	3 documents systematising the programme's experience
Outputs	Number of people reached by the communication strategy throughout the program	0	106,480	"2000 direct beneficiaries of the programme 116,281 indirect beneficiaries of the programme"
Outputs	Number of visits per month of the portal	0	1100	Approximately 1,100 people per month visit the portal.
Outputs	Percentage of favorable comments on usefulness of the portal	0	0	This indicator was difficult to quantify. There was a positive response to questions posed during workshops and meetings, indicating that they had been able to obtain important information that had helped them in their areas of work. It was not quantified on the portal.
Outputs	Number of knowledge products generated and made available to different users by the program	0	32	Not less than 20 products throughout the complete program execution
Outputs	Number of people reached by knowledge products from the program	0	2221	1200 people
Outputs	Number of people who benefit from the training on the use of the portal	0	1096	At least 500 people trained on the use of the portal
Outputs	Advisory technical committee established to orient the knowledge management process	0	1	Advisory technical committee established and operational to orient the knowledge management process
Outputs	Number of decisions made and implemented from	0	2	They assisted in the selection of participants for the

	advisory technical committee meetings			courses. The National Committee on Climate Change was deactivated. The deactivation of the National Climate Change Committee does not affect the sustainability of the project's results, as the implementing entities maintain their climate change units or offices active and continue to monitor them. The Ministry of the Environment, the Designated National Authority, maintains constant coordination with project stakeholders. For its part, Natura continues to participate in the project's implementation areas and maintains contact with the beneficiaries.
Outputs	Number of people trained from technical exchanges	0	300	At least 100 people trained in exchange activities at the local level (number of beneficiaries: core impact indicator)

Comments

Lessons Learned

Implementation and Adaptive Management		
Describe any changes undertaken to improve results on the ground or any changes made to project outputs (i.e. changes to project design)	Opportunities	There were no changes or modifications to the outputs. Initiatives were implemented to strengthen/improve program results, which is relevant to achieving sustainability. Tools and studies were developed, and equipment was acquired to

		improve decision-making. • Climate Change Scenarios: Vision 2030-2050-2070: This contribution was essential for developing a zoning map with future projections. • Acquisition of equipment for the National Climate Data System for Adaptation: This system aims to provide a comprehensive and up-to-date database that enables informed and timely decision-making to protect the population, the economy, and the environment from climate change. • Financial Structure of the Climate Change Adaptation Fund: The objective is to develop project modalities and a conceptual framework to prepare the country for local financing of climate change adaptation and resilience, in line with the challenges the government has set for itself. • Projection of the cost of climate change adaptation by 2050 in Panama in vital economic sectors: water, energy, and agriculture, specifically rice, corn, and beans. The objective was to develop a framework to determine the economic and financial costs of adaptation by 2050 in priority sectors. As a result, it established a baseline for estimating the financing needs for transformation in Panama, considering demand and potential losses associated with the impacts of climate change. It also serves as input for developing a methodology and economic estimates for other sectors through future projects to obtain the total national adaptation costs. • Water footprint assessment of the lower Chiriquí Viejo and Santa María basin: The objective is to quantify the impact of water resource use by developing a water footprint quantification methodology applied to river basins. The
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		goal is to reduce water consumption and its impacts by promoting a culture of quantifying and optimizing water resources for efficient water management. Enviar comentarios
Have the environmental and social safeguard measures that were taken been effective in avoiding unwanted negative impacts?	Opportunities	Having an environmental and social safeguards framework aligned with national legislation serves as a guide for developing program activities and enables achieving results. This has been made possible through the monitoring and verification by Natura technicians, executing entities, and NGOs to ensure compliance with established national and international standards.
How have gender considerations been taken into consideration during the reporting period? What have been the lessons learned as a consequence of inclusion of such considerations on project performance or impacts? List lessons learned specific to gender, detailing measures and project/programme-specific indicators highlighting the role of women as key actors in climate change adaptation.	Challenges & Opportunities	• The actions indicated in the previous report are maintained and strengthened. • Working with women leaders has been an excellent opportunity; they are instrumental in generating changes in their environments, making commitments, and fulfilling them to address and seek answers to relevant issues such as family, food, education, health, and the family economy. • Once women have increased their knowledge and strengthened their skills on the issue of climate change and its current and future impact on the agricultural and water sectors, they become natural allies for action.
Were there any delays in implementation? If so, include any causes of delays. What measures have been taken to reduce delays?	Challenges	The lack of full-time staff for program monitoring and the lack of full-time equipment available from the implementing entities (EEs) limited the program's field implementation. Furthermore, the lack of institutional transportation within the EE-MIDA agencies caused delays in field supervision. Joint visits were organized to address this issue, with the collaboration of NGOs, MIDA technicians, and Natura technicians. In the

		CRChV region, heavy rains caused erosion and crop losses on some farmers' plots. To mitigate these problems, reseeded was carried out and the height of ridges or plots was increased to effectively control erosion.
What implementation issues/lessons, either positive or negative, affected progress?	Challenges & Opportunities	Positive aspects • The 'learning by doing' methodology has effectively reinforced learning and increased knowledge among key stakeholders. • The involvement of local authorities in the preparation of technical documents for water resources planning and the management of their legal approval by local governments enables the use of scientific and technical information as an integral part of decision-making. • There is a commitment to the achievement of program results by the participants, including the technicians employed by the implementing agencies and the beneficiaries of all program components. • The agro-climatic and statistical node (including crop planting date forecasts, agro-climatic technical roundtables, and dissemination of recommendations through bulletins and social networks) has greatly been important to agricultural producers and decision-makers. It has improved economic outcomes by using climate data to guide decision-making and the establishment of planting season calendars. • The knowledge management component significantly empowers technicians, beneficiaries, and other stakeholders in climate change adaptation. It generates learning in adaptive management and increases awareness of the vulnerability of the watersheds prioritized by the program. • The involvement of community

		stakeholders from the beginning of the process enriched the information in the technical studies and analyses that led to the identification of climate vulnerability and the definition of adaptation measures. This added local experiences, anecdotes, insights, and hazard mapping to the knowledge base. Negative aspects • The insufficient number of staff assigned to the various products in the executing agencies affected implementation, as these staff had to divide their time between other tasks in the institutions, which involved the planning of follow-up and monitoring activities. • The intervention from different national directions within the executing agencies highlights the need for a solid and well-defined institutional coordination framework. Such a framework should include precise roles and responsibilities to ensure smoother implementation. • The knowledge management committee has not fulfilled its expected role in the knowledge management processes of the program due to the restructuring of the National Climate Change Committee.
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Has the project already reached mid term or project completion?(yes/no).

Yes

Climate Resilience Measures	
What have been the lessons learned, both positive and negative, in implementing climate adaptation measures that would be relevant to the design and implementation of future projects/programmes for enhanced resilience to climate change?	The potential for replicability of climate resilience measures undertaken in the program is high, based on the empowerment of key actors within the Chiriquí Viejo and Santa María river watersheds and the positive results achieved in their implementation. • The ownership of the program, mainly by the implementing agencies, local authorities, and community organizations, ensures the sustainability of the results. • Currently, adaptation measures implemented through the program are being

	replicated by participating and non-participating producers, both within and outside the program's area of influence. • The fact that Component I producers contribute in-kind counterparts throughout the implementation process of adaptation measures generates greater ownership throughout the program's development. It also allows for increased investment amounts, contributing to the sustainability of action. • With the new legislation on water management in carwashes (Law 246 of 13 October 2021), the feasibility of operating three water harvesting systems in carwashes has been demonstrated for the first time. There is, therefore, a high potential for the replicability of this initiative. • The technical information generated under Component 2 (vulnerability studies, adaptation design, district water security plans, water balance studies, etc.) has a high potential to be replicated in other basins, given the necessary funding and institutional will. • The implemented measures in the projects have been well received (electric fences, resistant grasses, soil, and water conservation measures, use of pest-resistant coffee varieties, efficient and low-cost irrigation, rainwater collection, crop associations, division of pastures into paddocks, among others). Therefore, there is a high potential for replicability within and outside the program's area. • The Agroclimatic Technical Tables (MTA) have generated interest and participation from climate and agricultural analysis stakeholders, and two provinces have been included for 2023. • Concrete adaptation measures are essential for partner producers outside the project areas experiencing climate change's adverse effects on their farms. When they see the positive results of these actions in the project, they request to be involved in new projects or visit farms to learn about and adopt the measures implemented.
What is the potential for the climate resilience measures undertaken by the project/programme to be replicated and scaled up both within and outside the project area?	
Readiness Interventions (Applicable only to NIEs that received one or more readiness grants)	
What have been the lessons learned, both positive and negative, in accessing and implementing climate finance readiness support that would be relevant to the preparation, design and implementation of future concrete adaptation projects/programmes?	• Financial support for preparing adaptation proposals is crucial to hiring specialists in the field at the national and international levels • This initiative contributed to reviewing the NIE's environmental and social policies, adjusting safeguards, and improving gender policy, allowing for proposal formulation and implementation process guidance.
How have the outputs (such as manuals, guidelines, procedures or the experience from providing peer support, etc) from employing readiness grants been used to inform institutional capacity needs, gender	The results generated through preparedness grants have been used as fundamental inputs to strengthen the design and implementation of climate change adaptation projects. Manuals, guidelines, procedures,

issues, and environmental and social aspects in developing and implementing concrete projects/programmes for enhanced resilience to climate change?	and lessons learned from peer support have made it possible to identify and address gaps in institutional capacities, especially in areas related to planning, risk management, and compliance with environmental and social safeguards. In terms of gender, the tools and guidance developed have contributed to incorporating gender-sensitive approaches at all stages of the project cycle, including identifying the differentiated needs of women and men, promoting the inclusive participation of vulnerable groups, and establishing specific indicators to measure gender equality outcomes. Furthermore, the knowledge outputs obtained have strengthened the integration of environmental and social considerations through the application of risk assessment and management procedures, stakeholder consultation mechanisms, and measures to prevent adverse impacts. These experiences have improved the technical quality of proposals and ensured that adaptation interventions are socially inclusive, environmentally sustainable, and aligned with the Adaptation Fund's policies and standards. Overall, the results of the preparedness grants have contributed to building lasting institutional capacities, facilitating the development of more robust projects, and increasing the resilience of priority communities and sectors to the effects of climate change. Specifically: • The manuals, procedures, and guides were regularly implemented in the program. • Some systems were strengthened with information obtained from the outcomes of the initial grants. • Environmental and social safeguards and gender policies were improved. • Support was provided on specific issues, such as integrating the gender dimension into project proposals.
Concrete Adaptation Interventions	
What have been the lessons learned, both positive and negative, in implementing concrete adaptation interventions that would be relevant to the design and implementation of future projects/programmes implementing concrete adaptation interventions?	Positive Lessons: • Comprehensive planning and effective collaboration: Experience shows that comprehensive planning and successful collaboration among key institutions and stakeholders are essential for achieving significant progress in climate change adaptation and risk reduction. In the country, these advances are reflected in the reduction of national exposure to climate risks, the strengthening of institutional capacities to address economic losses, and the promotion of greater local awareness and participation in adaptation processes. Furthermore, the adaptive capacity of key sectors and the resilience of ecosystems to the effects of climate change have improved. Improved policies and regulations, as well as the diversification of livelihoods for vulnerable communities, have been key aspects in consolidating these resilience measures. This experience demonstrates that coordinated, multisectoral action is essential to effectively address the challenges of climate change. • Alignment with national

	monitoring frameworks: The effective alignment of the program's monitoring and evaluation frameworks with Panama's national frameworks has proven to be a key strategy for significantly strengthening monitoring and evaluation capacity related to climate change adaptation. This alignment has facilitated better coordination and more efficient use of available resources, contributing to the proper monitoring of progress and informed decision-making regarding adaptation policies and actions. • Importance of local awareness: Experience has shown that it is essential to incorporate actions that ensure local understanding of the importance of addressing climate change. Awareness-raising activities prior to the selection of producer partners have been key, as they allowed for better assimilation of the measures proposed in the farm management plans, which significantly facilitated their implementation. This highlights how active participation and local understanding are crucial to the success of adaptation actions. • Strengthening technical capacities: Strengthening the technical capacities of both the staff of the implementing entities and local communities has been crucial to improving knowledge and application of key concepts and techniques in climate change adaptation and mitigation, as well as in watershed management. This process has facilitated the efficient development of project activities, ensuring not only their implementation but also their long-term sustainability. Ongoing training and knowledge transfer have proven to be essential elements for the project's success. • Relevance of community participation: For projects to be successful and replicable in communities, it is essential that they arise from their own needs and realities. Active community participation in identifying problems and solutions not only ensures the appropriateness of the measures but also fosters a sense of ownership and commitment. Furthermore, the implementation of adaptation measures must consider local characteristics, such as culture, traditions, and type of production, among other factors, ensuring more effective and lasting integration into both the communities daily lives and the project itself. • Active participation of all key stakeholders: The active participation of men, women, and youth in the planning and implementation phases of the projects has been crucial to achieving the project's positive and sustainable results. Including all key stakeholders from the outset contributes to solutions that are inclusive and represent the needs of the entire community, while promoting a sense of shared responsibility and commitment to project outcomes. • Transparency and Accountability: Maintaining high
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	levels of transparency and accountability regarding the work carried out and achievements has been key to generating greater commitment and trust from local authorities and other relevant stakeholders, such as the watershed committees. This approach not only strengthens participation and support but also ensures more effective and sustainable management of project resources and actions. • Success in inter-institutional coordination: Coordination between the implementing entities has been successful. This experience demonstrates the importance of inter-institutional collaboration in achieving the project's objectives, although it is recognized that improving internal coordination with these entities remains an important area for strengthening. Negative Lessons: • Improving internal coordination: Despite advances in inter-institutional coordination, experience has shown that internal coordination processes within executing agencies continue to be a challenge that requires time and effort. This challenge is exacerbated when several offices/directorates are involved in different regions or areas, and when there are variations in the levels of experience among the actors involved. The lesson learned is that, to improve efficiency in project implementation, it is crucial to optimize internal coordination processes. This not only reduces administrative procedures, but also ensures faster access to technical assistance and improves the efficiency of project implementation.
What is the potential for the concrete adaptation interventions undertaken by the project/programme to be replicated and scaled up both within and outside the project area?	The potential is high; producers, local governments, and executing entities have shown interest in expanding the program's products, among which we have: • Agro-climatic technical tables are implemented with wide acceptance by producers and technicians. Other provinces have requested MIDA to establish these tables that provide agricultural and livestock recommendations and sowing and harvesting dates of various farm products. The 3-month forecast is included. • Adaptation measures implemented for livestock farming. In the program area, these are being adopted on the farms of producers participating and replicated on the farms of producers not benefiting from the program. • Water harvesting systems for home gardens and enterprises (car washing). • Monitoring system for pests in agroforestry systems.
Knowledge Management	
How has existing information/data/knowledge been used to inform project development and implementation? What kinds of information/data/knowledge were used?	The data collected throughout the program's execution has been utilized for the following purposes: • Characterizing the river basins of Chiriquí Viejo and Santa María and developing various technical documents to assess vulnerability to climate change, pre-design adaptation measures, and water security plans, among others. • Identifying

	lessons learned from the implementation process of program components. • Developing a monitoring and evaluation system to track climate change adaptation in the country. • Creating relevant dissemination materials showcasing the results achieved in each program component. • Identifying delays in the execution process and designing and implementing measures to address them. • The information generated through projects or consultations (agroclimatic bulletins, good practice guides, posters, brochures, among others) allows for a more accurate determination of food production parameters, thereby reducing the consequences of climate variations on crops. • Publishing agroclimatic bulletins and sharing information on the behavior of climate variables by region; technical data is available on websites, and messages are shared on social media platforms like Instagram, Facebook, and YouTube. • Utilizing information from the Gender-Focused Participation Plan, Environmental and Social Safeguard Plan, Socioeconomic Reference Survey, Training Plan, Farm Management Plans, and Initial and Final Perception Surveys on the causes and effects of climate change conducted at the beginning and end of the projects. • Employing geospatial and precipitation data for modeling purposes to obtain possible planting and harvesting dates for various crops.
Has the existing information/data/knowledge been made available to relevant stakeholder? If so, what channels of dissemination have been used?	All the information, data, and knowledge generated during the program's implementation have been effectively communicated to stakeholders and key actors through various distribution channels, including: • Implement a communication strategy within the program's target areas in Coclé, Veraguas, Herrera, and Chiriquí to disseminate information about the adaptation program. • Conducting 72 workshops to share vulnerability analyses of the Chiriquí Viejo and Santa María Watersheds, facilitating the identification of adaptation measures. • Organizing 21 national-level workshops to share and disseminate systematized experiences on climate change adaptation nationwide. • Holding at least 20 national-level training workshops to educate key actors and stakeholders on using the adaptation program's web portal. The portal contains all the information, data, and knowledge generated within the program. • Production and distribution of various printed documents, including technical studies developed under the program, among stakeholders and key actors at a national level. • Creation and distribution of printed dissemination materials, such as infographics, highlighting vulnerability studies in the watersheds, sustainable livestock farming, and agroforestry systems to stakeholders in both watersheds. • Making information, data, and knowledge available to interested parties through

	radio announcements on famous Chiriquí Viejo and Santa María Watershed stations. Progress updates on the projects have also been presented to relevant basin committees, knowledge committees, interinstitutional committees on agricultural climate change, universities, and radio programs. • Sharing information on social media platforms and mobile phones (WhatsApp). • Sharing technical training documents or materials of interest through WhatsApp and email in print and digital formats. • Conducting webinars on program-related topics.
Please list any knowledge products generated and include hyperlinks whenever possible (e.g. project videos, project stories, studies and technical reports, case studies, training manuals, handbooks, strategies and plans developed, etc.)	Project deliverables can be accessed on the Adaptation Fund Program web page (https://adaptacion.miambiente.gob.pa.).
If learning objectives have been established, have they been met? Please describe.	• Systematization of lessons learned from Component 1 projects as part of knowledge management. Yes, the project design included Component 4 to enhance the awareness of the target population groups, aiming to create understanding and learning about the dimension of climate change adaptation. This objective was achieved through various methods, outlined below: • All projects or consultations included a knowledge management component developed as they were implemented. • Training technical staff from government and non-governmental institutions in climate modeling, focusing on future scenarios impacting food and energy generation activities and participatory integrated management of watershed areas. • Training of MIDA and MiAmbiente technicians in crop zoning. • Training of SINAPROC and ETESA technicians in Early Warning Systems for floods. • Training of key stakeholders in both watershed areas on climate change adaptation, specifically the role of ecosystem services, and at the national level on Ecosystem-Based Adaptation in marine-coastal zones. • Capacitation of critical stakeholders and the general population on systematized and disseminated experiences of climate change adaptation at the national level. • Development of webinars and workshops aimed at technical staff, key stakeholders, and the general population to provide training on various topics the program covers regarding adaptation and resilience to climate change. • Implement a radio strategy, social media engagement, and newspaper inserts to provide information about climate change adaptation and the program's results. • Development of knowledge products focused on climate change adaptation, serving as a foundation for replication in other projects, such as the participation plan with a gender perspective, environmental and social safeguard plan, training plan, agricultural management plans,

	socioeconomic and agricultural characterization report, and population perception report on the effects and causes of climate change. • Exchange of experiences among national and international partner producers. • Dissemination of various vulnerability analyses to spread information among communities and users in both watershed areas, allowing them to learn about and become familiar with the tools created to improve adaptive capacity to climate change.
Describe any difficulties there have been in accessing or retrieving existing information (data or knowledge) that is relevant to the project. Please provide suggestions for improving access to the relevant data.	To date there have been no problems accessing or retrieving existing information (data or knowledge) that is relevant to the project.
Has the identification of learning objectives contributed to the outcomes of the project? In what ways have they contributed?	The identification of learning objectives contributed successfully to the project's outcomes because they were designed to create awareness among key stakeholders, particularly technical staff and decision-makers, regarding the learning of climate change adaptation and the multiple benefits of integrating climate change into the design of locally relevant public interest projects to address the effects of climate change, especially on water resources. • The learning objectives have contributed to a more significant impact by enabling local knowledge creation and replicating this impact at other levels. The learning objectives are contributing to capacity development at the local level through organizations implementing projects under Component 1 and capacity development in organizations and NGOs in information analysis and processing for different sectors, as well as strengthening water resource management by incorporating an adaptation approach to climate change. • A total of 3,461 people have directly benefited from workshops and meetings, and through radio communication strategies, newspaper inserts, and social media, an estimated 1,088,857 people were reached, increasing awareness about climate change and adaptation. • As a result of this generated awareness, the legal approval of the technical documents generated under Component 2 was successfully achieved for the municipalities of Santa Fé in Veraguas and Tierras Altas and Caisán in Chiriquí. The information generated is utilized in designing projects and programs led by local authorities within the program area.
Innovation	
Describe any innovative practices or technologies that figured prominently in this project.	• First complete rainwater harvesting (car wash) systems for commercial use: This measure involves implementing rainwater harvesting systems designed explicitly for commercial car wash operations. It helps conserve water by collecting and storing rainwater for car washing, reducing dependence on

	freshwater sources. • Installation of the country's first fog collection system in Bajo Grande, Tierras Altas, Chiriqui province: This initiative is a model for future research and studies. Fog harvesting systems use special nets to collect water droplets from fog, providing a sustainable water source in areas with limited rainfall or access to other water resources. • Rainwater harvesting system through surface runoff with a waterproof trough: This system collects rainwater from the surface and directs it to a watertight drain for storage. It also incorporates a solar pump and panels to facilitate water flow to the beneficiary partner's milking sheds. This helps to ensure a reliable water supply for the milking process while using renewable energy. • Planting trees in livestock systems: This activity focuses on planting trees in livestock systems, particularly in strips or lines. Planting trees in this way can help reduce soil erosion, provide shade and shelter for animals, improve microclimatic conditions, and enhance the environmental sustainability of livestock production. • Installation of a biodigester on a pig production farm: A biodigester is a system that converts organic waste, such as pig manure, into biogas through anaerobic digestion. This initiative helps to generate renewable energy in the form of biogas, which can be used for various purposes, such as cooking, heating, or electricity generation, reducing dependence on fossil fuels. • Planting certified climate-resilient hybrid coffee seedlings: This measure involves planting certified climate-resilient hybrid coffee seedlings. By using these seedlings, farmers can increase their chances of successfully growing coffee despite climatic challenges, ensuring the sustainability of the coffee industry. • Processing Naranjilla fruit into juices and jams for commercial distribution: The processed products are commercially distributed in the priority area identified by the program. This initiative adds value to the Naranjilla fruit, promotes local agricultural products, and supports the development of local markets. • Maintaining these measures contributes to sustainability, water conservation, renewable energy generation, environmental protection, and agricultural development.
Complementarity/ Coherence with other climate finance sources	
Has the project been scaled-up from any other climate finance? Or has the project build upon any other climate finance initiative?	Yes
If you answered yes, kindly specify the name of the Fund/Organization.	The Monitoring and Evaluation System was strengthened, including Loss and Damage indicators, with resources from the United Nations Office for Project Services

Results Tracker

Goal: Assist developing-country Parties to the Kyoto Protocol and the Paris Agreement that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects and programmes in order to implement climate-resilient measures.

Impact: Increased resiliency at the community, national, and regional levels to climate variability and change.

Is this the mid-term or terminal project performance report? Terminal

Impact: Increased resiliency at the community, national, and regional levels to climate variability and change

Core Indicator: No. of beneficiaries

		Total	% of female beneficiaries	% of Youth beneficiaries
Baseline information	Direct beneficiaries supported by the project	0	0.00	0.00
Baseline information	Indirect beneficiaries supported by the project	0	0.00	0.00
Baseline information	Total (direct + indirect beneficiaries)	0	0.00	0.00
Target performance at completion	Direct beneficiaries supported by the project	2000	30.00	0.00
Target performance at completion	Indirect beneficiaries supported by the project	114281	40.00	0.00
Target performance at completion	Total (direct + indirect beneficiaries)	116281	35.00	0.00
Performance at mid-term	Direct beneficiaries supported by the project	1175	27.00	0.00
Performance at mid-term	Indirect beneficiaries supported by the project	41522		0.60
Performance at mid-term	Total (direct + indirect beneficiaries)	42697	13.50	0.30
Performance at completion	Direct beneficiaries supported by the project	2550	42.00	0.00
Performance at completion	Indirect beneficiaries supported by the project	114442		0.00
Performance at	Total (direct +	116992	21.00	0.00

completion	indirect beneficiaries)			
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Outcome 1: Reduced exposure to climate-related hazards and threats

Indicator 1: Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis

	Number of targeted stakeholders - Total	Number of targeted stakeholders - % of female targeted	Hazards information generated and disseminated	Overall effectiveness
Baseline information	0	0.00	Inland flooding	1: Ineffective
Target performance at completion				1: Ineffective
Performance at mid-term				1: Ineffective
Performance at completion	204	20.00	Inland flooding	2: Partially effective

Output 1.1 Risk and vulnerability assessments conducted and updated

Indicator 1.1: No. of projects/programmes that conduct and update risk and vulnerability assessments

	No. of projects/programmes that conduct and update risk and vulnerability assessments	Sector	Scale	Status
Baseline information	0	Multi-sector	Regional	1: No plans conducted or updated
Target performance at completion	8	Multi-sector	Regional	3: Risk and vulnerability assessments completed or updated
Performance at mid-term	7	Food security	Regional	3: Risk and vulnerability assessments completed or updated
Performance at completion	8	Multi-sector	Regional	3: Risk and vulnerability assessments completed or updated

Output 1.2 Targeted population groups covered by adequate risk reduction systems

Core Indicator 1.2: No. of Early Warning Systems

	No. of adopted	Category	Hazard	Geographical	Number of
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	Early Warning Systems	targeted		coverage	municipalities
Baseline information	0	2: Monitoring and warning service	Inland flooding	Local	0
Baseline information	0	2: Monitoring and warning service	Drought	Local	0
Target performance at completion	2	2: Monitoring and warning service	Inland flooding	Local	4
Target performance at completion	1	2: Monitoring and warning service	Drought	Local	2
Performance at mid-term	0	2: Monitoring and warning service	Inland flooding	Local	2
Performance at mid-term	0	2: Monitoring and warning service	Drought	Local	1
Performance at completion	2	2: Monitoring and warning service	Inland flooding	Local	4
Performance at completion	1	2: Monitoring and warning service	Drought	Local	2

Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses

Indicator 2: Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased

	Number of staff targeted - Total	Number of staff targeted - % of female targeted	Sector	Capacity level
Baseline information	0	0.00	Multi-sector	1: No capacity
Target performance at completion	60	20.00	Multi-sector	3: Medium capacity
Performance at mid-term	40	60.00	Multi-sector	1: No capacity
Performance at completion	470	24.00	Multi-sector	3: Medium capacity

Output 2.1 Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events

Indicator 2.1.1: No. of staff trained to respond to, and mitigate impacts of, climate-related events

	Total staff trained	% of female staff trained	Type
Baseline information	0	0.00	Public
Target performance at completion	60	10.00	Public

Performance at mid-term	40	60.00	Public
Performance at completion	470	60.00	Public

Indicator 2.1.2: No. of targeted institutions with increased capacity to minimize exposure to climate variability risks

	Type	Scale	Sector	Capacity Level
Baseline information	Public	National	Multi-sector	1: No capacity
Target performance at completion	Public	National	Multi-sector	3: Medium capacity
Performance at mid-term	Public	National	Multi-sector	2: Low capacity
Performance at completion	Public	National	Multi-sector	3: Medium capacity

Output 2.2. Increased readiness and capacity of national and sub-national entities to directly access and program adaptation finance

Indicator 2.2.1: No. of targeted institutions benefitting from the direct access and enhanced direct access modality

	Number of beneficiaries	Scale	Sector	Capacity Level
Baseline information	0	National	Other	1: No capacity
Target performance at completion	1	National	Other	4: High capacity
Performance at mid-term	1	National	Other	3: Medium capacity
Performance at completion	1	National	Other	4: High capacity

Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes

Indicator 3.1: Increase in application of appropriate adaptation responses

	Percentage of targeted population applying adaptation measures	Sector
Baseline information	0.00	Food security
Target performance at completion	70.00	Food security
Performance at mid-term	5.00	Food security
Performance at completion	85.00	Food security

Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities

Indicator 3.1.1: Percentage of targeted population awareness of predicted adverse impacts of climate change, and of appropriate responses

	No. of targeted beneficiaries	% of female participants targeted	Level of awareness
Baseline information	0	0.00	1: Aware of neither
Target performance at completion	2552	15.00	4: Mostly aware
Performance at mid-term	678	24.00	2: Partially not aware
Performance at completion	690	24.00	3: Partially aware

Output 3.2: Stenghtened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning

Indicator 3.2.1: No. of technical committees/associations formed to ensure transfer of knowledge

	No. of technical committees/associations	% of women represented in committes/associations	Level of awareness
Baseline information			
Target performance at completion			
Performance at mid-term			
Performance at completion	0		

Indicator 3.2.2: No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders

	No. of tools and guidelines	Type	Scale
Baseline information	0	Technical guidelines	National
Target performance at completion	8	Technical guidelines	Regional
Performance at mid-term	7	Technical guidelines	National
Performance at completion	15	Technical guidelines	National

Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets

Indicator 4.1: Increased responsiveness of development sector services to evolving needs from changing and variable climate

	Project/programme sector	Geographical scale	Response level
Baseline information	Food security	Local	2: Partially responsive (Lacks most elements)
Target performance at completion	Food security	Local	3: Moderately responsive (Some defined elements)
Performance at mid-term	Food security	Local	3: Moderately responsive (Some defined elements)
Performance at	Food security	Local	3: Moderately responsive

completion			(Some defined elements)
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Core Indicator 4.2: Assets produced, developed, improved or strengthened

	Sector	Targeted asset	Changes in asset (quantitative or qualitative)
Baseline information	Food security	2: Physical asset (produced/improved/strengthened)	1: Not improved
Baseline information	Agriculture	2: Physical asset (produced/improved/strengthened)	1: Not improved
Target performance at completion	Food security	2: Physical asset (produced/improved/strengthened)	4: Mostly Improved
Performance at mid-term	Agriculture	2: Physical asset (produced/improved/strengthened)	2: Somewhat improved
Performance at completion	Disaster risk reduction	2: Physical asset (produced/improved/strengthened)	3: Moderately improved
Performance at completion	Food security	2: Physical asset (produced/improved/strengthened)	4: Mostly Improved
Performance at completion	Agriculture	2: Physical asset (produced/improved/strengthened)	3: Moderately improved

Indicator 4.1.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability

Indicator 4.1.1: No. and type of development sector services to respond to new conditions resulting from climate variability and change

	Number of services	Type	Sector
Baseline information	0		Disaster risk reduction
Target performance at completion	1		Multi-sector
Performance at mid-term	1		Multi-sector
Performance at completion	3		Agriculture
Performance at completion	2		Disaster risk reduction

Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress

Indicator 5: Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress

	Natural resource improvement level	Sector	Type
Baseline information			
Target performance at completion			
Performance at mid-term			
Performance at completion			

Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability

Core Indicator 5.1: Natural Assets protected or rehabilitated

	Natural asset or Ecosystem (type)	Total number of natural assets or ecosystems protected/rehabilitated	Unit	Effectiveness of protection/rehabilitation
Baseline information				
Target performance at completion				
Performance at mid-term				
Performance at completion				

Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas

Indicator 6.1: Increase in households and communities having more secure access to livelihood assets

	No. of targeted households	% of female headed households	Improvement level
Baseline information	0	0.00	1: No improvement
Target performance at completion	328	24.00	3: Moderate improvement
Performance at mid-term	250	15.00	3: Moderate improvement
Performance at completion	451	42.00	3: Moderate improvement

Indicator 6.2: Increase in targeted population's sustained climate-resilient alternative livelihoods

	No. of targeted households	% of female headed households	% increase in income level vis-à-vis baseline	Alternate Source
Baseline information	0	0.00	From 0 to 0.5%	Cultivation
Baseline information	0	0.00	From 0 to 0.5%	Livestock production
Baseline information	0	0.00	From 0 to 0.5%	Agriculture
Target performance at completion	60	10.00	From 1% to 5%	Cultivation
Target performance at completion	120	2.00	From 5% to 10%	Livestock production
Target performance at completion	148	18.00	From 5% to 10%	Agriculture
Performance at mid-term	48	46.00	From 0 to 0.5%	Cultivation
Performance at mid-term	120	2.00	From 0 to 0.5%	Livestock production
Performance at mid-term	60	4.00	From 0 to 0.5%	Agriculture

Performance at completion	196	70.00	Above 50%	Cultivation
Performance at completion	120	16.00	From 1% to 5%	Livestock production
Performance at completion	135	24.00	From 1% to 5%	Agriculture

Output 6 Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability

Indicator 6.1.1: No. and type of adaptation assets created or strengthened in support of individual or community livelihood strategies

	Number of Assets	Type of Assets	Sector	Adaptation strategy
Baseline information	0	Social capital	Food security	Capacity development
Target performance at completion	1	Social capital	Food security	Capacity development
Performance at mid-term	1	Social capital	Food security	Capacity development
Performance at completion	1	Social capital	Food security	Capacity development

Core Indicator 6.1.2: Increased income, or avoided decrease in income

	Number of households (total number in the project area)	Income source	Income level (USD)
Baseline information	40	Cultivation	76.11
Target performance at completion	60	Cultivation	200.00
Performance at mid-term	60	Cultivation	140.00
Performance at completion	196	Cultivation	300.00

Outcome 7: Improved policies and regulations that promote and enforce resilience measures

Indicator 7: Climate change priorities are integrated into national development strategy

	Integration level
Baseline information	
Target performance at completion	
Performance at mid-term	
Performance at completion	

Output 7: Improved integration of climate-resilience strategies into country development plans

Indicator 7.1: No. of policies introduced or adjusted to address climate change risks

	No. of Policies introduced or	Sector	Scale	Type
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	adjusted			
Baseline information				
Target performance at completion				
Performance at mid-term				
Performance at completion				

Indicator 7.2: No. of targeted development strategies with incorporated climate change priorities enforced

	No. of Development strategies	Regulation	Effectiveness
Baseline information			
Target performance at completion			
Performance at mid-term			
Performance at completion			

Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies

Indicator 8: Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level

	Sector of innovative practice	Geographic Scale	Type
Baseline information			
Target performance at completion			
Performance at mid-term			
Performance at completion			

Output 8: Viable innovations are rolled out, scaled up, encourages and/or accelerated

Indicator 8.1: No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated

	No. of innovative practices/ tools technologies	Sector	Status	Effectiveness
Baseline information				
Target performance at completion				
Performance at mid-term				
Performance at completion				

Indicator 8.2: No. of key findings on effective, efficient adaptation practices, products and

technologies generated			
	No. of key findings generated	Type	Effectiveness
Baseline information			
Target performance at completion			
Performance at mid-term			
Performance at completion			