ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular Size Full Proposal

Country/Region: Panama
Programme Title: Strengthening climate resilience in livelihoods and coastal ecosystems of the Central Pacific of Panama.
Thematic Focal Area: Multisector
Implementing Entity: Fundación Natura
Executing Entities: Ministry of Environment, Ministry of Agricultural Development, Panama Aquatic Resources Authority (ARAP), Institute of Meteorology and Hydrology of Panama (IMHPA)
AF Project ID: AF00000289
IE Project ID: **Requested Financing from Adaptation Fund (US Dollars):** 10,000,000
Reviewer and contact person: Alyssa Gomes **Co-reviewer(s):** Dirk Lamberts
IE Contact Person: Rosa Montañez / Vilna Cuéllar

Technical Summary	The programme "Strengthening climate resilience in livelihoods and coastal ecosystems of the Central Pacific of Panama" aims to increase the resilience of the most vulnerable coastal communities and their livelihoods; communities located in the climate region of the *Arco Seco* of Panama and improve the management of high-value ecosystems such as blue carbon sinks in the Central Pacific of Panama, recognizing their value and contribution through the various ecosystem goods and services that they provide to the communities and the region. This will be done through the three components below: Component 1: Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions (USD 4,350,000); Component 2: Improve local and national capacity to face exposure to climate-related hazards and threats, through planning tools and risk reduction systems (USD 2,550,000); Component 3: Strengthen the capacity of key stakeholders and improve knowledge on climate adaptation and resilience at the local and national levels, with gender perspective (USD 1,516,977). Requested financing overview: Programme Execution Cost: USD 799,613

	Total Programme Cost: USD 9,216,590 Implementing Fee: USD 783,410 Financing Requested: USD 10,000,000 The initial technical review raised some issues, such as the use of USPs and compliance with ESP and GP, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical review found that most of the issues raised have not or not adequately been addressed. Issues remain with the use of USPs and compliance with the ESP and GP. In addition, the newly introduced request for the IE to provide certain execution services does not meet the relevant requirements. The third technical review finds that most of the issues raised have not been addressed. Issues remain with the use of USPs, compliance with the ESP and GP, and the request for the IE to provide certain execution services.
Date:	20 November 2024

Review Criteria	Questions	Comments Initial Technical Review (Sep. 2023)	Comments Third Technical Review (20 Nov 2024)	Response Natura (12 Dec. 2024)
Comments Second Technical Review (May 2024) **-**	1. Is the country party to the Kyoto Protocol or the Paris Agreement?	**Yes.**	**-**	
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Panama is particularly vulnerable to climate change because of its (i) low-lying coastal areas; (ii) areas exposed to floods, droughts, and desertification; (iii) fragile mountain ecosystems; (iv) disaster-prone areas and (v) an economy dependent on the income generated by navigation services and the use of fossil fuels.	**-**	

- - The proposal consists of 100 pages, with 93 pages of annexes. **CAR 2: Not cleared.** USPs are said to all have been fully identified. However, this is not the case, and added location-specific information is limited to location names or those of organisations involved. No additional information required to identify environmental and social risks has been provided. No changes were made to the descriptions of the mentioned USP activities, that all still start with their formulation.	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** A duly signed endorsement letter dated 6 December 2022 is included.	**Yes.** A letter of endorsement dated 18 November 2024 has been provided.	
	2. Does the length of the proposal amount to no more than One hundred (100) pages for the fully-developed project document, and one hundred (100) pages for its annexes?	**No.** The proposal amounts to 107 pages, with 62 pages of annexes. With the 11 point font size used scaled to 75 or 80 per cent, this corresponds to approximately 130 pages of proposal text (without the annexes) in a regular 11 point size font. **CAR 1:** Please adjust the proposal to comply with the page limitations.	The proposal consists of 100 pages, with 94 pages of annexes.	
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Yes.** The proposal is designed as a programme with a comprehensive approach to the complex process of adaptation rather than a sectoral or fragmented approach. The components are integrated, which will help to address and understand (to actuate and replicate) the complex and dynamic interrelationships between sustainable livelihoods and the use and protection of high value ecosystems, whilst	**CAR 2: Not cleared.** Activities in Outputs 1.1, 1.2, 1.3, 1.4, and 2.4 are considered USPs because they are not sufficiently defined where a robust ESP risk assessment is possible: - **Output 1.1 -** Although there is mention of pilot projects, they are not specified (e.g., 12 pilot community fishing projects developed with the incorporation of	A review of activities for products 1.1, 1.2, 1.3, 1.4 and 2.4 was carried out and 1: The different activities and their methodologies were described by product, considering the risks associated with the activities and the environmental and

CAR 3: Not cleared. Some inconsistencies have been addressed, others remain. **Yes.** Please see CAR 2. **CR 1: Not cleared.** E.g., for all three aquaculture and fisheries related activities (ostreiculture, tilapia farming and community fisheries), the cost effectiveness analysis has major deficiencies, reflecting the fragmentary description of the activities involved. **-**		generating actionable knowledge and tools for decision making for adaptation. The programme presents a combination of adaptation activities on the ground and actions to inform and influence decision-making processes in the sectors involved. The programme takes a deliberate and in part justified USP approach to several outcomes. USPs are included in Outputs 1.1, 1.2, 1.3, 1.4, and 2.4. The extent to which the USPs are not identified ranges from the final selection of a small group of direct beneficiaries for otherwise fully identified activities to generically identified interventions such as reforestation. In line with the guidance on the use of USPs, USPs for which both the activity and the location are not identified are inadmissible and must not be included in a project/programme as USP. This also applies to Output 2.4 – implementation of prioritized adaptation measures.	nature-based technologies, 10 pilot projects for efficient irrigation with the use of a water harvesting systems), instead they are directed towards selected beneficiaries in specified communities, - **Output 1,2** focuses on evaluating and strengthening value chains for various climate-smart products. The proposal is missing an explicit reference linking each business plan to the communities in output 1.1. By referencing output 1.1's locations and interventions, output 1.2 effectively avoids inadmissible USPs, as it would be clear where these value chains will be strengthened. - **Output 1.3** describes specific activities like the	social risks and their mitigation measures and the entity responsible for their follow-up and monitoring in accordance with the guide (https://www.adaptation-fund.org/wp-content/uploads/2022/10/PPRC.30.54-Updated-guidance-on-USPs-with-Annex.pdf) The methodologies and risks were reviewed by the technical teams of the executing entities and by the beneficiaries. The table where they are described was developed (Annex 2.2) Reference corrected and the certification

CAR 4: Not cleared. Some food quality and safety regulations have been included in the relevant section of the proposal. It does not however, describe how or to which project activities these are relevant, nor how the project will comply with them. -		**CAR 2:** Please revise the proposal to align the use of USPs with the guidance. Changes made in this resubmission have not been carried through throughout the proposal, resulting in several inconsistencies. E.g. the number of farm management plans to be prepared under Component 1 varies between 40 and “at least 60”. **CAR 3:** Please ensure consistency throughout the proposal.	management of rural aqueducts and installation of water harvesting systems with low-cost technology (20 systems planned). It also provides exact provinces, districts, and communities (tables 1.3.1 and 1.3.2), where these aqueducts and water systems will be implemented. While Output 1.3 provides clarity on the activities and locations, it does not fully meet the requirements for a robust ESS risk assessment. A robust ESS assessment would typically include M&E mechanisms to track environmental and social impacts over time. The proposal would benefit from specifying how it will monitor the water systems’ performance, track	is included (Annex 17).

			community satisfaction, or handle any emerging ESS risks during implementation. - **Output 1.4** describes the main activities (reforestation, enrichment, restoration) with a target area of 150 hectares, specifying the sectors and districts where these activities will take place. The proposal has not specified the reforestation techniques or methods that will be used (e.g., types of native species, community-based planting strategies). Furthermore, the risk assessment has not addressed any potential challenges or risks in these ecosystems. - **Output 2.4**: List all the communities where each cost-benefit study will	Certification is included indicating that the activities of 2.4 will be carried out in the areas of activities 1.1 (See Annex 17).

			occur or add a statement confirming they will take place in the Output 1.1 locations. This would reduce ambiguity about their purpose and geographic focus. **Please consider the following guidance on the use of USPs:** - The justification (i) needs to be provided on the reasons why an activity cannot be formulated at the design stage and (ii) must describe the specific benefits of not formulating an activity at that stage. It should further (iii) explain how these benefits outweigh the increased risk on non-compliance with the ESP and GP. - Emphasize that the risk assessment will be dynamic and revisited as specific sub-projects are defined within these	In the section arrangements for project / program implementation, it is defined how the PGAS will be monitored and in which instruments it will be presented.

			USPs. Describe this process in the Environmental and Social Management Plan (ESMP), and detail how risks will be reviewed and mitigation measures tailored based on the characteristics of each sub-project once specific sites or activities are determined. (https://www.adaptation-fund.org/wp-content/uploads/2022/10/PPRC.30.54-Updated-guidance-on-USPs-with-Annex.pdf). If the USP approach will not be used, then activities must be further identified in the proposal where a complete risk assessment is possible. **CAR 3: Cleared.** The inconsistencies have been addressed. **CAR12 (NEW):** The components and financing table lists activities.	Reforestation with native species from the areas where reforestation will take place, in compliance with MiAmbiente regulations and supervision by MiAmbiente. Annex 2.1 presents the information corresponding to reforestation with native species. Corrected.

			- Define clear Outcomes and Outputs and number them as per the details presented in the descriptions in the PART IIA. - Reorganize each component by outputs. List each component with its specific outputs and corresponding activities. - Provide cost allocation per output, allowing a clear understanding of budget distribution. Clarify Budget Allocation per Output: - Use Subcategories for Major Activities: For each output, categorize expenses for significant activities such as livelihood development, aquaculture projects, water management, aqueducts, reforestation, etc.	Corrected. Costs have been presented by Component, outcome, output and activities and subcategories have been established as requested. (See Annex 18).

			Specify target quantities for each activity (e.g., number of aqueducts, hectares reforested, number of livelihoods supported) in the results framework**.**	
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** The use of USPs makes that the economic, social and environmental benefits for some activities are to some extent hard to quantify at this stage. Nevertheless, the process and the justification for the selected outcomes and activities are such that the likelihood of providing such benefits is high. The proposal includes an overview of the expected benefits, with information on the expected beneficiaries. The proposal includes detailed criteria for the selection of beneficiaries for each outcome and output where that is relevant. These include, among others, considerations of vulnerability, gender and lack of opportunities. Gender-sensitive measures are included in all	**Yes.** Please see **CAR 2**.	The risks inherent to the activities and the social and environmental risks have been verified. Additionally, the activities of each product are specified. See Annex 2.1

		components, e.g., requiring the inclusion of social and gender experts as part of the programme staff and giving preference to households headed by women for the livelihood activities. Knowledge materials will contain specific material to address the vulnerability of women and measures to overcome this, and trainings will include a gender awareness section.		
	5. Is the project / programme cost effective?	**Unclear.** The proposal provides a logical explanation of the selected scope and approach and describes cost effectiveness from a sustainability perspective. The (limited) economic analysis provided does not support the claims of cost effectiveness. E.g., the tilapia culture activity, at the stocking densities described, is high-density, intensive aquaculture for which significant investments in operational equipment and expenses, and considerable skills and expertise are required. There is no suggestion in the proposal	**Unclear.** **CR 1: Not cleared.** The current cost-effectiveness analysis for aquaculture and fisheries activities indeed has gaps that need addressing. **Please consider the following:** - The cost-effectiveness analysis does not account for expected mortality rates in aquaculture. For instance, oyster farming often experiences a high mortality rate, particularly in the	Observations were corrected and Annexes 7 were replaced.

		that these are available or will be created. The economic analysis is very limited and does not provide any indication on the activity's cost effectiveness. Table 2.3.2 comparing the programme activities with "conventional adaptation options" provides few additional arguments for the cost-effectiveness of the selected programme. The alternative options used for comparison all are deficient in some way, rather than realistic best-practice alternatives. **CR 1:** Please clarify the cost-effectiveness of the programme, providing where possible quantified comparative figures with alternative options.	early stages of production, due to factors such as water quality and disease. Similarly, tilapia farming can have mortality rates ranging from 5–20%, influenced by environmental conditions, disease, and farm management practices. Not accounting for these rates may overestimate production yields and income projections. - The proposal does not provide comparisons with alternative interventions, such as alternative aquaculture species or alternative livelihood projects. Such a comparative analysis would better justify the cost-effectiveness of the chosen approach by showcasing how it	

			fares against feasible alternatives. - The analyses lack information on environmental factors and seasonality that could impact production cycles, such as temperature changes, water salinity, and weather patterns. - Related to output 1.4, the proposal lacks specifics on the types of reforestation and restoration techniques that will be implemented, such as the choice between natural regeneration, direct seeding, or planting nursery-grown saplings. Different techniques come with varying costs, survival rates, and maintenance requirements. Without this information, it is challenging to assess whether the	

			chosen approaches are financially viable or if they optimize resources effectively. Factoring in realistic mortality rates, alternative options, and additional production costs would strengthen the analysis and align it with cost-effectiveness principles.	
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Yes.** Compliance and consistency with national strategies, development plans and targets are explained.	**-**	
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and	**Unclear.** Table 2.35 presents relevant national technical standards for most activities, including many of the USPs. Many of the programme activities involve food production. However, only for a single	**CAR 4: Not cleared.** The standards applicable to the activities have been clarified in Annex 8. The provided section outlines the project's adherence to technical and regulatory standards, which is a	The implementation section establishes the monitoring periods of the technical standards as well as the instruments where

	Social Policy of the Fund?	activity (bee keeping) is there a reference to food standards. The table is followed by a footnote: “Note: Government entities or institutions are responsible for compliance with standards and policies for production, health, and management of agricultural products and by-products. The implementation of the program is planned so that the programmed productive activities are developed under the technical guidance and supervision of the competent entities of each technical standard.” **CAR 4:** Please include relevant national technical standards – in particular on food quality and safety – and outline how the programme will comply with them. Include a process to achieve the same for the USPs during implementation.	positive starting point. However, it primarily focuses on listing applicable laws, policies, and general institutional roles rather than detailing how each standard will be specifically applied and monitored in the context of the proposed project activities. No process is provided for compliance with relevant national technical standards for the USPs. **Recommendations for improvement:** - Please include a direct link between the listed standards and the project activities. It’s essential to explain how specific standards, such as those related to water quality or biodiversity conservation, will impact or guide each activity within the program. - Update Annex 8 to not only list applicable standards but to provide a	they will be presented.

			concise explanation of the relevance of each standard to specific activities, alongside a plan for their application in the project. - Integrate ESIA Procedures into the Compliance Framework. Clearly define which entity (NIE, executing entity, contractor) will oversee compliance, how often compliance will be monitored, and what documentation or reporting will be required to validate adherence to technical standards.	
	8. Is there duplication of project / programme with other funding sources?	**No.** Potentially overlapping projects/programmes have been identified, and synergies and actions without duplication are listed.	**-**	
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** The programme includes a specific component devoted to promoting adaptation learning and knowledge management at the national and local levels. The proposal describes how	**-**	

		experiences and lessons learned on the ground will be captured, outreach materials will be created of knowledge generated and a knowledge management strategy will be developed.		
- **CR 2: Not cleared.** The proposal includes information on consultations held but does not provide additional information on how beneficiaries and stakeholders involved in the USPs will be consulted during programme implementation. Please also see CAR 2. - - -	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** The proposal includes a description of the consultations that were held, their outcomes and how these were taken into consideration in the programme design. Consistent with the programme and USP approach, direct beneficiaries and stakeholders have so far only been consulted in a limited manner. The proposal will need to show how they will be consulted during the identification of the USPs and the implementation of the ESMP, including on gender considerations. **CR 2:** Please clarify how beneficiaries and stakeholders involved in the USPs will be consulted during programme implementation.	**CR 2: Not cleared.** The response states erroneously that all USPs have been identified. No additional information is provided on how beneficiaries and stakeholders involved in the USPs will be consulted during programme implementation. Please see **CAR 2**.	Corrected. For activities where the exact polygons are not specified, once they are defined, the risk assessment will be carried out.

	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Yes.** The proposal demonstrates the relevance of the programme activities in achieving its adaptation objectives that will help achieve these objectives without additional funding.	**-**	
	12. Is the project / program aligned with AF's results framework?	**Yes.**	**-**	
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes.** The proposal lists the economic, social, environmental, institutional and financial sustainability built in in the programme activities, as well as the arrangements through which this will be achieved.	**-**	
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Unclear.** The table presenting the risks identification findings has a footnote stating that it is limited to all fully identified activities. The proposal does not specify which activities may not have been included (please also see CAR 2). **CR 3:** Please clarify which activities have been included in the risks identification, taking into consideration the	**Needs improvement.** **Category B Classification:** The classification as Category B aligns with the project's nature, which includes small-scale, reversible impacts that should generally be manageable through appropriate mitigation measures. **CR 3:** Please see **CAR 2**.	

		USPs of Outputs 1.1, 1.2, 1.3, 1.4, and 2.4. Pending the above clarification, comprehensive risks identification and commensurate impacts assessment should have been carried out. The risk identification findings should be presented in Table 2.38 in a specific way, rather than as statements like “The project will comply with obtaining all permits. requested by the sectoral authorities for the development of the proposed activities”. Please also see CAR 4. The risks findings further include a number of programme implementation risks that are not ESP related risks. Certain risks findings are not in line with the ESP. E.g. the interpretation of ‘Marginalized and Vulnerable Groups’ is not in line with the definition provided in the ESP of “marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal	**CAR 5: Not cleared.** The very limited additional information that has been provided in Section II.K is of little relevance. Please see **CAR 2**. Additionally, the risk findings for a number of principles are unjustified. Please see below: - **Compliance with the Law:** There is no specific mechanism for ensuring continued compliance throughout the project duration, especially for activities delegated to executing entities. Consider including a robust compliance monitoring system, clarifying roles and responsibilities for ensuring all project components follow legal and regulatory requirements consistently. - **Marginalized and Vulnerable**	A review of the risks inherent to the activities and the social and environmental risks that complement this analysis was carried out. Please see Annex 2.1 This will be verified in the monitoring and a specific section is established in the report In the implementation section, it is specified that the monitoring will be carried out by the EE with competence in the activity/product and by Natura as the final responsible party.

		groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS". Risks findings related to natural habitats and biodiversity state that as those are programme objectives, no such risks exist. Several programme activities are intended to take place in such locations and thereby have relevant risks, regardless of their objective. The principle of Climate change is misinterpreted by identifying the risks of climate change impacts to the programme rather than the risk of "significant or unjustified increase in greenhouse gas emissions or other drivers of climate change" as specified in the ESP. Risks related to the principle on pollution prevention are inherent to the agriculture activities and the supported value chains. It is not limited to "solid waste that requires treatment".	**Groups:** The risk of exclusion and indirect impacts is not comprehensively addressed, and ongoing monitoring plans are needed. - **Conservation of Biological Diversity:** There is insufficient specificity for USPs on preventing biodiversity loss, particularly regarding the introduction of potential invasive species or non-native plants in reforestation. - **Pollution Prevention and Resource Efficiency:** A specific pollution management strategy is missing, especially for agrochemical use, which can affect soil, water, and biodiversity. - **Public Health:** This principle may require ongoing	In accordance with international conventions such as the Convention on Biological Diversity, reforestation with invasive species is not permitted in Panama. Natura complies with national and international regulations such as the Convention on Biological Diversity. Pollution Prevention The project does not promote the use of agrochemicals, it promotes agroecological alternatives such as the use of bio-inputs and it monitors that the beneficiaries do not use agrochemicals.

		CAR 5: Please include an overview of the environmental and social risks of the programme, in line with the ESP.	monitoring and mitigation measures to address any unforeseen health impacts, particularly concerning water quality and waste management. Some activities, such as aquaculture or the use of agrochemicals, may have indirect health implications, including potential effects on water quality. - **Natural Habitat Protection:** Insufficient clarity on how natural habitats will be protected with potential changes in activity scope for USPs. - **Soil and Land Conservation:** A detailed soil conservation strategy is missing for any larger-scale activities that may be defined as the project evolves.	Public Health: If there is any risk of waste, the Project includes the waste management plan. Natural Habitat Protection: The conservation of forest areas, water sources and biodiversity is promoted from the first visit to the beneficiaries and farm planning processes. It is included in the good productive practices, and its compliance is monitored. Soil and Land Conservation: FN's focus is on promoting sustainable production practices, which are inherent to the incorporation of good production practices that include water, soil

			A general gap exists across several principles in monitoring compliance and cost-effectiveness for newly defined activities under USPs.	and biodiversity conservation actions. (see Annex 2.1) All projects that merit it undergo soil analysis to subsequently define a soil conservation plan.

CR 3: Cleared. All project activities are understood to have been included in the risks identification. **CAR 5: Not cleared.** The risks identified (i) include activities that are USPs (please see CAR 2) and (ii) have mitigation and management measures considered in their identification. Overall, the identification of the environmental and social risks lacks substantiation and is incomplete. E.g., the proposal includes unspecified management measures to avoid negative impacts on cetaceans, while no	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	**-**	
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.** The Implementing Entity Management Fee is at 8.5 per cent.	**-**	
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.** The Execution Costs are at 8.5 per cent. **CR 5 (NEW 2nd REV):** Please clarify if the EEs are unable to provide the execution services mentioned. **CR 6 (NEW 2nd REV):** Please clarify how the respective responsibilities of the IE and the EEs will be stipulated, when the IE undertakes the whole procurement process and makes the payments for the goods and services provided and, mutatis mutandis, does the same for project execution personnel. **CAR 9 (NEW 2nd REV):** Please clarify the value of the goods, services and	**CR 5: Cleared**. The response sheet and the request letters by the EEs clarify that the EEs are all able to provide the execution services mentioned but that this may be more convenient when provided by the IE. There is insufficient justification for the IE to become involved in the execution of the project. **CAR 10 (NEW):** Please revise the proposal to reflect the roles of the IE and the EEs, and update the budgets accordingly. **CR 6: Cleared.** Please see **CAR 10**.	The notes request that Natura support the administrative management for the payments of acquisitions at the request of the executing entities. All the technical part and acquisition processes will be directly executed by the executing entities. Natura will only provide contracting and payment support for the acquisition processes. It will not technically execute any activity of the Project.

corresponding risks are mentioned. - -		personnel costs that will be provided by the IE, and adjust the EE fee to reflect the 1.5 per cent cap.	**CAR 9: Cleared** Please see **CAR 10**.	A new request letter is attached, indicating more clearly the justification for the request.
No. The revised proposal includes a request by the DA / Minister of Environment for the IE to provide certain execution services to the EEs for reasons of convenience. These services involve (a) procurement of goods and services and their payments on behalf of the EEs, and (b) hiring of personnel for the EEs for the execution of the project. The provision of execution services by an IE is subject to OPG ANNEX 7 and AF B.37/1c.	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.**	**Yes.** Fundacion Natura is an accredited NIE with the Adaptation Fund. Its accreditation expires on 6 September 2027.	

This includes that (i) the provision of execution services by an IE is on an exceptional basis, in case an EE estimates it is unable to provide such services; (ii) the responsibility for these services is stipulated, and (iii) in such case, the execution costs of the implementing entity are limited proportionally to the cost of the part of the project executed by the IE, capped at 1.5 per cent of the project cost (AF B.37/1c).				

CR 5 (NEW): Please clarify if the EEs are unable to provide the execution services mentioned. **CR 6 (NEW):** Please clarify how				

the respective responsibilities of the IE and the EEs will be stipulated, when the IE undertakes the whole procurement process and makes the payments for the goods and services provided and, mutatis mutandis, does the same for project execution personnel.				

CAR 9 (NEW): Please clarify the value of the goods, services and personnel costs that will be provided by the IE, and adjust the EE fee to reflect the 1.5 per cent cap.				
- **CR 4: Not cleared.** Please also see CAR 2. Please also see CR 6.	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	**Yes.** However, arrangements for the management of the USPs are lacking. **CR 4:** Please clarify how the USPs of outputs 1.1, 1.2, 1.3, 1.4 and 2.4 will be managed,	**CR 4: Not cleared.** Please see **CAR 2**. Please also see **CAR 10**.	

- **CAR 6: Not cleared.** Please also see CAR 2. - **Unclear.** Please see CAR 9. The execution cost has not been adjusted. **CAR 7: Mostly cleared.** Please make the required adjustments to the budget as per previous comment. **CAR 8: Not cleared.**		with particular emphasis on compliance with the ESP and GP.		
	2. Are there measures for financial and project/programme risk management?	**Yes.**	-	
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** The risks identification described in section II.K of the proposal has shown that the programme activities have environmental and social risks that require management. Those management provisions need to be presented in an Environmental and Social Management Plan (ESMP). In addition, the use of USPs requires a comprehensive ESMP including a process for risks identification and impacts assessment for the USPs. The information presented In Table 3.4 is limited to management measures for specific ESP principles while a *process* at programme level for managing these risks is lacking. Annex 5 – *Risk analysis and management process for USP in order to comply with the ESP and GP*	**CAR 6: Not cleared.** The very limited additional information that has been provided in Section III.C. Please see additional guidance under CAR5. Please see **CAR 2**.	

- **Not cleared – please see CAR 8.**		– is limited to activity 1.5.1, which no longer is part of the programme. This Annex de facto constitutes the programme ESMP but is deficient in several ways in that it i) is not comprehensive, ii) does not include a clear allocation of roles and responsibilities or a budget, and iii) lacks integration with the USP process and monitoring and reporting. The ESMP should also include the mitigation and management measures already identified in section II.K. and listed in Table 3.4. **CAR 6:** Please include an adequate ESMP.		
	4. Is a budget on the Implementing Entity Management Fee use included?	**Yes.**	**-**	
	5. Is an explanation and a breakdown of the execution costs included?	**Yes**. En el cuadro 3.10 se presenta un desglose de los costos de ejecución del programa.	**Unclear.** Please see **CAR 10**.	

	6. Is a detailed budget including budget notes included?	**Yes.** The detailed budget includes costs at activity level as well as budget notes. The numbers in the description of the activities do not always correspond to those in the description of the activities elsewhere in the proposal. Please see CAR 3. Several figures in budget tables throughout the proposal includes numbers with decimal figures. **CAR 7:** Please remove decimal figures from the budgets.	**CAR 7: Cleared.** As per the information provided in table 3.8.	
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	**Yes.** Arrangements for monitoring and evaluation are clearly defined, and the proposal includes a budgeted M&E plan. The use of gender-disaggregated data should be improved, as is the case throughout the proposal. "Complementary gender indicators" are provided in Annex 3.1, but these are not integrated in the proposal.	**CAR 8: Cleared.** As per the additional information in selected parts of the proposal, including the results framework (Table 3.6).	

		CAR 8: Please clarify, and revise as needed throughout the proposal, the use of gender-disaggregated data, indicators, and targets, drawing on data from the gender assessment.		
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	**Yes.** The M&E Plan is budgeted with breakdown of IE fees for supervision of M&E function.	**-**	
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	**Partially.** The programme's results framework lacks gender-disaggregated targets for components 1 and 2. Please see CAR 8.	**Yes.** As per the additional information in selected parts of the proposal, including the results framework (Table 3.6).	
	10. Is a disbursement schedule with time-bound milestones included?	**Yes.** The proposal includes a disbursement schedule that includes time-bound milestones relative to programme inception and the annual reporting requirement. **CR 7 (NEW 2nd REV):** Please update the disbursement schedule.	**CR 7: Cleared.** As per the information on p. 93.	

CR 7 (NEW): Please update the disbursement schedule.	11.			

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAM INFORMATION

Title of Project/Program	Strengthening climate resilience in livelihoods and coastal ecosystems of the Central Pacific of Panama
Country:	Panamá
Thematic Focal Area:	Costal Zone Management / Ecosystem based Adaptation.
Type of Implementing Entity:	National Implementing Entity
Implementing Entity:	Fundación Natura
Executing Entities:	Ministry of the Environment (MiAmbiente), Ministry of Agricultural Development (MIDA), Panama Aquatic Resources Authority (ARAP), Institute of Meteorology and Hydrology of Panama (IMHPA)[1]
Amount of Financing Requested:	US $10,000,000 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes ☒ No ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☒ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☐ This is the first submission ever of the proposal at any stage.

In case of a resubmission, please indicate the last submission date: ~~2/6/2023~~9/10/2024

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

[1] Note: other executors that will be selected to develop specific products and activities based on the short list are the Panama Tourism Authority - ATP, Local Governments and the public calls for some consulting services that were identified in the budget and in the table that describes the implementation of the agreements by product and executing entities.

Project / Program Background and Context

A. Brief information on the background of the problem to be solved and the general context of the Program

A1. The Problem: The Republic of Panama is in the narrowest part of Central American isthmus, with a privileged extension of coastlines from north to south. Its position and geographical characteristics have been determining, for centuries, for its function of facilitating the transit of goods between the Atlantic and Pacific oceans, and the provision of services related to trans-isthmic transport. In fact, about 5% of the world's maritime trade is facilitated by the Panama Canal, connecting more than 140 maritime routes from more than 80 countries. Panama has achieved high economic growth; However, it faces enormous challenges in terms of poverty, inequality in income levels, access to basic services and quality jobs (UNDP, 2015). These challenges are exacerbated by the country's vulnerability to the impacts of climate change. In fact, Panama has five characteristics recognized by United Nations Framework Convention on Climate Change (UNFCCC) to indicate countries particularly vulnerable to climate change: (i) low-lying coastal areas; (ii) areas exposed to floods, droughts, and desertification; (iii) fragile mountain ecosystems; (iv) disaster-prone areas; (v) economy dependent on income generated by navigation services and use of fossil fuels.

The country has an estimated population of 4,278,500 million as of 2020, comprising a political-administrative division of 10 provinces, 6 indigenous regions, 81 districts and 679 townships. The Panamanian Pacific coast is extensive and sinuous, with a length of 1,700.6 km. According to climate projections towards 2050 and 2070, it is expected that the potential impacts in coastal areas of Panama will be related to the increase in precipitation, greater events of drought and floods and a rise in sea level, mainly affecting mangrove areas, loss of coastlines, damage to coastal communities and damage to ecosystems and vegetation adjacent to the coastal system.

The most common threats reported in the Third Panama Climate Change Communication for coastal areas are sea level rise, strong winds, floods, droughts, landslides, and earthquakes. These threats are increased by the occurrence of extreme events produced by the El Niño climate phenomena. According to the document, “according to data from the Ministry of Economy and Finance of Panama (MEF, 2016) coastal areas in Panama are a priority sector for rural areas, in terms of their economic impact and as a fundamental element in the food security of its inhabitants. Fishing is one of the most relevant economic activities that take place on the national coastlines, it is indicated that the contribution of fishing in 2016 was 15,247.9 metric tons, representing a FOB value of 42,958.5 million Balboas. It should be noted that Fishing activity, measured by national exports, fell 4.4%, with the main decrease being perceived in the quantities of fresh, refrigerated, or frozen fish, which constitute 71% of the country's fish exports, also according to MEF data. On the other hand, the population in the coastal sector of the country is about 128,537 inhabitants approximately, of which the population dedicated to artisanal fishing is around 60,000 inhabitants. Taking into account the geographical and geopolitical situation of the coastal sector with large territories on both coastlines of the country, inhabited by a mostly qualified population within the extreme poverty districts, the aforementioned situation enables a higher risk ratio in the face of adverse phenomena of change climate."

As part of the process of preparing the 3rd Communication on Climate Change in Panama, various surveys were conducted with residents of the areas studied. In the case of the Central Pacific and the Arco Seco of Panama, it was found that coastal water sources are affected by saline intrusion in the event of floods and high tide events. Faced with this panorama, the vulnerability of the coastal inhabitants and economic sectors is threatened, in the face of changes in climate variability that, year after year, seem to intensify the extreme values of rain and temperature. The main damages reported and associated with climate events were the impact on housing and communication infrastructures of the fishing communities, such as housing, public buildings, roads, bridges, retaining walls, storm drainage systems, docks, ports, tourist areas. and recreational, equipment and transportation of artisanal fishermen. Likewise, damages caused by landslides, the occurrence of floods and marine intrusion were reported, which affected the permanence and maintenance of productive agricultural and livestock areas, including coastal vegetation, mangroves and associated wildlife. The evidence collected suggests a high expo sure of the coastal sector to climatic threats, particularly to the local perception of an intensification of extreme climatic phenomena expressed as sea level rise, strong winds, floods, and droughts (which show a greater repercussion at the local level, particularly given the scarcity of rain during dry months).

These threats impose probable serious impacts in aspects such as food security, health, and water security. For this reason, the government of Panama, through the Ministry of the Environment, has defined as a priority the need to increase the resilience of the most vulnerable coastal communities and their livelihoods; communities located in

the climate region of the Arco Seco of Panama, and improve the management of high-value ecosystems such as blue carbon sinks in the Central Pacific of Panama, recognizing their value and contribution through the various ecosystem goods and services that they provide to the communities and the region. For this reason, it has designed this proposed Program that allows: a) to generate greater resilience in vulnerable ecosystems and essential livelihoods, through concrete actions for the restoration and climate-smart management of marine-coastal ecosystems; productive diversification; and innovation for adaptation; b) improve local and national capacity to respond to climate threats by developing effective tools for science -based decision- making, as well as risk reduction systems with a nature-based approach; and c) build and improve climate governance and the management and appropriation of knowledge on the matter, at the local, regional and national levels, for the implementation of tangible adaptation and resilience measures to climate change.

The proposed Program is a direct response to the priorities established in the National Climate Change Strategy for 20502, regarding the coastal-marine areas of the Central Pacific of Panama. Specifically, these priorities respond to the country's need to advance resilience management in the communities of the Arco Seco of Panama; introduce adaptation into productive systems that sustain both the local economy and a large part of the national economy; and restoring and protecting fragile ecosystems that support local biodiversity, are livelihoods for food security, function as regulators-protectors of the coastline, and are sinks of blue carbon.

In addition, the proposed Program aims to promote concrete and tangible adaptation actions with a nature -based approach, diversification in livelihoods, generation of data that support effective and efficient decision-making in the medium and long term in the face of anticipated climatic threats; and that they constitute a portfolio of lessons learned that allow the model to be replicated in other coastal areas of Panama. To achieve this, a cross-sectional approach is proposed that addresses the links between food security, livelihoods of the coastal population, management and improvement of coastal ecosystems, and the governance of adaptation at the local and national levels. From the national scope, the proposal is aligned and contributes to the achievement of global objectives, such as the Sustainable Development Goals (SDG), the Paris Agreement and the Aichi Biodiversity Targets. They establish measures and encourage the 195 states that are party to the United Nations Framework Convention on Climate Change to establish commitments to reduce greenhouse gas (GHG) emissions through media mitigation, adaptation and resilience. of life and ecosystems in the face of the effects and impacts of global warming.

The Program is consistent with:

- National strategies and sustainable development plans such as the National Climate Change Policy (Executive Decree No. 35 of 2007) and its policy of mitigation and adaptation to climate change (Executive Decree No. 100 of 2020 and Executive Decree 13 1 of 2021).
- The National Climate Change Strategy, which establishes a roadmap to 2050 with the aim of guiding the country towards a low-carbon economy with mitigation and adaptation actions for sustainable economic, social, and environmental growth.
- The Strategic Government Plan 2019-2024 of Panama framed in objectives and goals agreed upon through a broad participatory and inclusive process called “National Consensus”. This consensus includes issues of Environment and Climate Change, disaster risk prevention and management, the promotion of actions that promote gender equality as a basis for a prosperous and sustainable development (SDG 5), among others.

A2. General and regional context

Surface: According to the Third National Communication on Climate Change, the Republic of Panama has an approximate area of 74,177.37 km². The Caribbean Sea is located on its North coast, while the Pacific Ocean borders the South coast; to the East it be riders Colombia and to the West with Costa Rica. The surface of the territorial sea is approximately 319,824 km². The strategic location of the Isthmus and its shape allow it a privileged stretch of coastline. The Pacific coast has a length of 1,700.6 km, being more extensive and sinuous than that of the Caribbean with an extension of 1,288 km. From the above, it stands out that Panama has the highest coast / area ratio among the continental countries of Latin America.

Human development and economy: According to the United Nations Development Program (UNDP)3, Panama's Human Development Index is the highest in Central America and one of the highest in Latin America; However,

[2] *Ministry of the Environment (2019). National Climate Change Strategy 2050. Government of the Republic of Panama. 157 p.*

[3] United Nations Development PROGRAM -UNDP (2015). Atlas of Local Human Development.

their analysis reflects that there are still shortcomings that must be addressed to promote a more comprehensive and inclusive human development. The Gross Domestic Product (GDP) has shown signs of the slowdown in the economy, varying from 5.6% in 2017 to 3.7% in 2018 and 3.0% in 2019; and GDP per capita during the period it has shown increases of 4.0%, 2.2% and 1.5%, in the years 2017, 2018 and 2019 respectively. There has been no inflation rate for several years. Another indicator to mention is the unemployment rate, which has increased from 6.1% in 2017 to 7.1% in 20194. These figures have undoubtedly varied to the year 2021 according to the impacts caused by the SARS-COV 2 pandemic, the magnitude of which has not yet been calculated with precision.

Regarding rural economies in Panama, they depend mainly on the primary sector as the main source of employment, representing 14.4% of employment at the national level despite their limited contribution to the national economy (2.7% of GDP). Most of the primary producers in Panama are men, only 9% of women (vs 20% of men) are employees of the primary sector5. According to FAO, more than 63% of Panama's producers depend on family farming, and this represents 70% of all rural livelihoods in the country6. Fishing is also an important activity, not only for the livelihood of the community but also in valuable exports that generated 128 million dollars in 20197. Most of all fisheries exports (commercial fishing) are carried out in the Pacific area, while that the Caribbean area focuses mainly on artisanal fishing for the local market.

Population and gender: Panama has a population of 4,278,500 inhabitants, estimated as of July 1, 2020, of which 50.1% are men and 49.9% are women; By age groups, it is observed that 32.6% of the population are under 18 years and 12.4% are over 60 years of age, which are part of the dependent population. By ethnic group, data from the 2010 Population and Housing Census indicate that 12% are indigenous and 9.2% are Afro descendant. Life expectancy in Panama for the year 2020 is 78.7 years, 75.8 years for men and 81.7 years for women8. According to the UNDP (2015), the gender inequality index (developed in 2010 to measure the disadvantages that women can experience compared to men in three dimensions: reproductive health, empowerment, and the labor market), reveals that women face important disadvantages in all the country's provinces and the losses in their human development exceed 54% in all cases. A dynamic of advances and losses in the three dimensions is highlighted; However, the size of the labor market is the only one that shows little variation and, in many cases, a tendency to worsen in many of the provinces. On the other hand, the empowerment dimension presents the highest gender inequality, since in no province does it exceed 0.5. Both dimensions require greater efforts to create policies that facilitate access, improve the quality of employment for women, and facilitate their political participation.

Landscape: The Panamanian relief is composed of highlands and lowlands. The highlands constitute approximately 30% of the territory (Storymaps, 2021), while most of the territory (70%) is made up of lowlands and hills less than 700 meters above sea level (including the extensive plains of Chiriquí, Veraguas, the Peninsula Azuero, Coclé and the coastal plains of the Caribbean).

Biodiversity: Panama has high biodiversity (it ranks tenth in the world considering its size). More than 65% of its territory is occupied by primary forest, which places it among the countries with the highest percentage of forest coverage. According to the National Institute of Statistics and Census (INEC)9, Panama is located in the region with the greatest biodiversity on the planet, among the six known centers of global biodiversity, with high altitude variations that, under tropical climate conditions, they favor a diversity of ecosystems. In addition to the species common to other regions of America, there are between 1,300 and 1,900 species of plants, 23 species of amphibians, 24 species of reptiles, 8 species of birds, and 10 species of mammals that are endemic or unique to the country.

Coastal ecosystems: Panamanian coastlines are also among the most diverse in Central America, with a variety of marine ecosystems that include mangroves, estuaries, sandy shores, and 76 different types of coral species, of which 58 inhabit the Caribbean. These ecosystems provide important protection against storms and coastal tides, as well as other ecosystem services for coastal communities. However, these ecosystems and their resources have

[4] Ministry of Social Development -MIDES (2020). II Voluntary National Report of the SDGs. Website: https://sustainabledevelopment.un.org/content/documents/26427Panama_Informe_Voluntario_Reducido_1_reduced.pdf

[5] Ibid

[6] FAO (2019). Review of the family farm. June 2021. Website

[7] SICA, 2021

[8] Ministry of Social Development -MIDES (2020). II Voluntary National Report of the SDGs. Website https://sustainabledevelopment.un.org/content/documents/26427Panama_Informe_Voluntario_Reducido_1_reduced.pdf

[9] National Institute of Statistics and Census -INEC (n / d). General geographic aspects of Panama. December 2021. Website

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been seriously threatened by pressure from human activities, including pollution and poor physical planning that has led to the construction of housing and public infrastructure along sensitive coastal areas[10].

Temperature: According to the INEC[11], due to the low latitudes in which the Panamanian isthmus is located, the climate of Panama is tropical, with a great influence from the movements of the Inter-Tropical Convergence Zone (ITCZ) to the topography, to the location or East- West disposition of the territory and access to two great oceanic masses. As part of the Inter-Tropical zone in the lowlands, temperatures in Panama are characterized by being constantly warm. The annual averages of temperature fluctuates between 24ºC and 28ºC and remain close to these values throughout the year. This regime of constantly high temperatures is a consequence of the low latitudes in which the isthmus is located; at these latitudes the thickness of the atmosphere traversed by solar radiation is less than in the middle and high latitudes and, the incidence of radiation is stronger.

Precipitation: On the Pacific slope, annual precipitation is estimated between 1,500 and 3,500 mm. It is characterized by a rainy season that begins at the end of April and persists until the end of November and its maximums are registered between June and October. Between December and the end of April there is a dry season with an almost total absence of rain. On the Caribbean slope, the uniformity of rainfall throughout the year stands out and in much of the area there is no defined dry season. In this slope the rainfall totals are high or very high, which very often exceed 4,000 mm per year; This is mainly due to the large contributions of humidity supplied by the permanently warm waters of the Caribbean, reinforced by the coastal marine currents[12].

Climate: The country is particularly prone to climate variability with rainfall and temperature patterns changing with sudden changes from year to year. The impact of El Niño-Southern Oscillation (ENSO) in both its warm and cold phases (La Niña) influences precipitation patterns according to their intensity. The impacts and modification of these climate patterns have an important effect on both the communities and the economy of Panama. According to statistical and meteorological records, since 2004 there has been an increase in the frequency of extreme events in the country, being hydro-meteorological events those that have mainly affected vulnerable ecosystems and populations13. Climate Change: According to the National Climate Change Strategy 205014, the climate change scenarios for 6 climate regions of the country use global climate models recommended by the IPCC (see map 1 and map 2). The main effects identified that are associated with climate change include risks from intense summer rains, long and / or more intense periods of drought, as well as rising sea levels. These impacts will result in the flooding of the coastal plains of both coastlines.

The same source points out that these threats already show evidence of negative impacts on sectors of national interest, with clear effects on the availability of water in summer, a greater demand for energy in the face of high temperatures, loss of crops and soils, loss of coastline in the event of storm surges, as well as damage to infrastructure and services. Additionally, the conditions of unequal opportunities to face natural hazards, the distribution of poverty, the need for greater monitoring of works or actions to counteract climatic effects, as well as the challenge of greater coordination among all stakeholders, make the conditions of vulnerability increase and are expressed to a greater extent in the population with limited resources, mostly adults or children in a state of poverty, as well as the need for more basic services and Programs to strengthen local capacities.

Coastal zones are one of the key national economic sectors for Panama. Among the current threats -from frequent to very frequent- in the coastal areas of Panama are drought, storms, floods, rise in sea level (waves, swells, floods or swell), intense winds and heat waves. Expected threats indicate that current threats are very likely to increase (rainfall deficit of up to 10% and changes in mean and maximum temperature of up to 3 ° C); that it is very likely that the sea level will continue to rise; and that it is very likely that he winds will intensify, although there is uncertainty associated with this behavior15. These threats impose probable serious impacts on aspects such as food security, health, and water security (see map 3).

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[10] Organización Internacional de los Bosques del Mundo (n / d). Bosque del Mundo en Panamá. Mayo de 2021.

[11] Instituto Nacional de Estadística y Censo -INEC (n / d). Aspectos geográficos Generales de Panamá. Diciembre de 2021.

[12] Ibid.

[13] Gobierno de Panamá (2017). Proyecto del Fondo de Adaptación: "Adaptación al Cambio Climático a través de la gestión integral del agua en Panamá. Marzo 2021. https://www.adaptation-fund.org/project/adapting-climate-change-integrated-water-management-panama/

[14] Ministerio de Ambiente (2019). Estrategia Nacional de Cambio Climático 2050.

[15] *Idem.*

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Map 1. Characteristics of the Climate Regions of Panama

Source: Ministry of the Environment (2019). National Climate Change Strategy 2050. Government of the Republic of Panama

Map 2. National scenarios of climate change, by climate regions of Panama, to 2050

Source: Ministry of the Environment (2019). National Climate Change Strategy 2050. Government of the Republic of Panama.

Sea level rise: According to Kwiecinski, B. and D'Croz, L. (2008)16, the rise in sea level during the 20th century was approximately 20 cm for the Panamanian Pacific. Furthermore, the statistical analysis indicates that for the Pacific coast of Panama the rise in sea level for each twenty-year period was increasing, varying from 1.70 cm in the first twenty years (1909-1929), to about 8 cm between the years 1988- 1999. In conclusion, the statistical analysis projects the rise in sea level on the Pacific coast of Panama by more than fifty centimeters, from the present to the end of the 21st century. On a global scale, the increase in the volume of water in the oceans due to climate warming was more than 15 cm in the last hundred years. Climate change is predicted to cause a sea level rise of about 30 cm by 2050, due to the melting of glaciers and thermal expansion of the ocean's surface layer17.

[16] *Kwiecinski, B. and D'Croz, L. (2008) climate change and its projection on sea level on the Pacific coast of Panama, Tecnociencia, 10 (2), pp. 95-101. Availab: https://revistas.up.ac.pa/index.php/tecnociencia/article/view/850 (. Accessed: December 23, 2021).*

[17] *Ministry of the Environment (2019). Third National Communication on Climate Change of Panama. Government of the Republic of Panama. 232 p*

Map 3. Main impacts of climate change, by climate regions of Panama, to 2050

Source: Ministry of the Environment (2019). National Climate Change Strategy 2050. Government of the Republic of Panama

Changes in Precipitation: In Panama, a relative reduction in accumulated precipitation is expected, particularly during the influence of El Niño16. The climate change scenarios, according to the Third National Communication on Climate Change, indicate a significant reduction in rainfall towards different time horizons. While a clear picture of annual precipitation change is not yet possible due to large model uncertainties, MCG projected changes in national dry season precipitation from -7% to + 7% by 2020, -12% to + 5% for 2050 and -20% to + 9% for 2080. This implies that the future climate will increase the variability and intensity of extreme events. According to one downscaling study (PRECIS), extreme precipitation events (more than 40mm per day) are expected to increase by up to half in the A2 emissions scenario18.

Increase in Temperature: The climate change scenarios for Panama point to a potential increase in temperature with changes in recent years that already show an increasing trend despite climate variability (data for the period between 1950 and 2006 and according to scenarios A2 and B2 on climate change19). Specifically, this increase is projected for 0.5 ° C at 1 ° C and 1 ° C at 2.5 ° C, respectively for the scenarios. The change tends to be most evident in the central and western provinces, including the province of Panama. For the years close to 2050 and especially to 2080, the temperature, under scenario A2 shows values of 1.5 ° C to 4.5 ° C, while under B1, it will increase only between 0.7 ° C to 2.6 ° C for the same period.

Regional context: The national climate change strategy 2050 (MiAmbiente, 2019) has identified 6 climate regions in the country20. The proposed intervention area for the Program is centered on the central Pacific climate area (from Arraiján to the mouth of the Parita River), made up for the most part by the so-called “Dry Arch”. This zone includes areas in the provinces of Panamá Oeste, Coclé and Herrera (see map 4).

Economy: The economy in the provinces of Coclé, Herrera and Panamá Oeste depends on the sectors of agriculture, livestock, forestry, and the fishing sector, which have gradually decreased in recent years due to climatic consequences. The GDP for the province of Coclé is 2.5%, for Herrera it is 1.3% and for the province of Panamá Oeste it is 6.2%.21. In the Chitré district, 3.95% of the economically active population is concentrated in the primary sector in activities such as agriculture, livestock, hunting and forestry; 9.38% are employed in the manufacturing industry; 9.32% work in construction; and 23.60% is dedicated to commerce and provision of services.

Coclé - Statistics from the Office of the Comptroller General of the Republic show that Coclé's GDP is distributed in the tertiary sector (55.4%), secondary sector (36.3%) and primary sector (24.3%). The relevant economic activities

[18] Vulnerabilidad, Reducción de Riesgos y Adaptación al Cambio Climático, Panamá. Perfil de país de adaptación y riesgo climático. Banco Mundial. 15 p.

[19] Autoridad Nacional del Ambiente (2012). Segunda Comunicación Nacional de Cambio Climático de Panamá. Gobierno de la República de Panamá. 158 p

[20] Ministerio de Ambiente (2019). Tercera Comunicación Nacional de Cambio Climático de Panamá. Gobierno de la República de Panamá. 232 p.

[21] Contraloría General De La República. Instituto Nacional de Estadística y Censo (2019). *Producto Interno Bruto Provincial, a Precios Corrientes y en Medidas de Volumen Encadenadas Con Año de Referencia* 2007: años 2016-19.

in these sectors are government; agriculture, livestock and forestry; Hotels and restaurants; transportation, storage and communications; and wholesale and retail trade (9.6%)[22]. The tourist potential is evidenced by its contribution to GDP and the diversity of hotels on the beautiful beaches of the Pacific coast and the large number of tourists. Mainly in the Antón district, there are important hotels with international fame such as: Decameron, Playa Blanca, Buena Ventura, Sheraton, Riu Playa Blanca and Bijao. In this sense, it is important to highlight that these hotel s contribute directly to the employment of the region, since they represent many jobs that improve the economy of the province. On the other hand, support for agrotourism farms is growing, generating economic benefits to the community, however, salary inequality persists in the Coclesan labor market, for equal work women do not receive equal salary[23]. The province of Coclé is recognized for being one of the regions of the country with the greatest development of aquaculture activities (shrimp production) distributed along the coast. This activity is also important in generating jobs. As for artisanal fishing, this is carried out mainly by residents of coastal areas, as a subsistence activity. The districts of the province with the greatest presence of this are the districts of Antón and Aguadulce within the study area[24].

Herrera - In this province, in the Monagrillo area, its main economic activities revolve around livestock, agriculture, pig farming, trade and fishing, aquaculture concessions. In the Boca Parita area and in Llano Bonito there are trade, fishing, aquaculture concessions, salt mines and pig farming[25].

Panama Oeste - In this area there is an important industry for the processing of fishmeal by Promarina S. A., around Puerto Caimito and the growing industrial development of different companies that produce many manufactured products. Agriculture, livestock and fishing are the most important primary activities in the province. Additionally, in the towns of Veracruz, Puerto Caimito and Vacamonte, where a port with great fishing activity is located. In this region there is an economic boom with the opening of shopping centers, supermarkets, warehouses, restaurants and banks, which respond to the demographic growth of these towns as bedroom cities of the capital. In Veracruz, Chame and San Carlos the tourist industry develops, with various beach hotels. In Capira and Chame, ecological tourism is developed, especially in the mountainous areas of the Campana National Park[26].

Population: The population according to the 2010 census[27] in the proposed Program area is distributed as indicated in table 1.1. See map 4 and map 6.

Table 1.1 Population by district and township in the program area

Province	District	Township	Inhabitants	Province	District	Township	Inhabitants
Panamá Oeste	San Carlos	San José	2,703	Coclé	Antón	Río Hato	13,676
		Higo	2,700			El Chirú	3,502
		La Ermita	1,564			Juan Díaz	2,634
		Las Uvas	1,578			Antón	9,736
		San Carlos Cab.	3,431		Natá	Natá Cabecera	5,974
	Chame	Chame Cabecera	2,392		Aguadulce	Barrios Unidos	9,337
		Nueva Gorgona	3,978			El Roble	8,276
		Las Lajas	3,296	Herrera	Chitré	Monagrillo	12,324
		El Líbano	200			Llano Bonito	9,713
		Punta Chame	421		Parita	Parita	3,723

Human development: Regarding the IDH, in the proposed intervention area the results are indicated in table 1.2.[28]

[22] Luzcando V., Viedma E. (2017) *Evolución de la economía de Coclé: modelo educativo de género y ecoturismo.* Guacamaya, 1. 85-94. ISSN 2616-9711

[23] Recopilación de información elaborada por las regionales de Herrera, Coclé y Panamá Oeste del Ministerio de Ambiente (2021).

[24] Idem.

[25] Ibidem.

[26] Ibidem.

[27] Instituto Nacional de Estadística y Censo (2010). *Censo Nacional de Población y Vivienda 2010*. Contraloría General de la República de Panamá.

[28] PNUD. (2020). Índice de Pobreza Multidimensional (IPM-C), a nivel de distritos y corregimientos, usando los Censo de Población y Vivienda de Panamá.

Table 1.2 Human development

Province	District	HDI[1]	Province	District	HDI[1]
Panamá Oeste	San Carlos	0.723	Coclé	Antón	0.689
	Chame	0.739		Natá	0.712
	Capira	0.659		Aguadulce	0.78
	La Chorrera	0.765	Herrera	Chitré	0.803
	Arraiján	0.798			

Risk factors: the climatic risks for the population in the provinces of Coclé, Herrera and Panamá Oeste include (i) the rise in sea level (see map 5); (ii) saline intrusion; (iii) coastal erosion and (iv) the increase in extreme events such as severe storms and droughts. It is important to note that the most evident effects of coastal erosion, related to the rise in sea level, are evident on the coastlines of the Antón district, specifically in communities such as Farallón, Juan Hombrón and Los Azules. In Herrera there has been a strong erosion of the river mouth areas of both the Rio La Villa and the Rio Parita. In the river mouth areas, you can already see the fall of trees of mangrove species, caused by coastal erosion, and by the impact of waves.

Regarding non-climatic risk factors, these include (i) the degradation of ecosystems, for example the elimination of mangroves for the establishment of infrastructures and other activities; (ii) the filling of areas that adjoin or are within the mangrove ecosystem zone; (iii) solid waste generation and poor disposal; (iv) the marked sedimentation that reaches the mangrove areas as a result of the activities carried out in the upper middle and lower watershed, and that there is no sewerage system for the final disposal of wastewater, which implies greater contamination of the ecosystem[29].

ENSO: Given the occurrence of climatic events with the Southern Oscillation known as "El Niño-La Niña" it is important to note that the impacts throughout the country are catastrophic but are especially severe in the proposed intervention area - the central Pacific of Panama. “Between 1982-1983, at the national level ENSO seriously affected agriculture with losses of US $ 14 million in livestock and US $ 6 million in crops. Then, in 1997 -1998, this phenomenon again produced losses that reached US $ 40 million. As an example, only milk production lost 7.4 million liters, which translates into US $ 1,847,263. Due to ENSO, agricultural GDP contracted by 3.7%. The 2001 drought event caused a reduction in the yields of many crops, as well as the production area of these, due to the uncertainty of the producers regarding the possible changes in the rain patterns of that period. Dairies were affected again, reducing their volume by 10.4 million liters, and losing 2,500 head of cattle. Then, the seasonal crops in Coclé and Herrera were affected by droughts during critical periods of production (July, August, September and October), when the most important volume of precipitation is expected, prior to the harvest season. As defined by the Ministry of Agricultural Development (MIDA), the most severe effects of the drought and ENSO in Panama are registered in Herrera, Los Santos, Coclé, Veraguas, the west and east of the province of Panama”[30].

List the main objectives of the Program

The goal of this Program is to increase the resilience of the most vulnerable coastal communities and their livelihoods; communities located in the climate region of the Arco Seco of Panama and improve the management of high-value ecosystems such as blue carbon sinks in the Central Pacific of Panama, recognizing their value and contribution through the various ecosystem goods and services that they provide to the communities and the region.

Map 4. Districts within the marine-costal zones vulnerable to sea livel rise in the program intervention area – Coastal strip from Arraiján to the mouth of the Parita river.

[29] Recopilación de información elaborada por las regionales de Herrera, Coclé y Panamá Oeste del Ministerio de Ambiente (2021).

[30] Draft document. Conceptual note. Panama final draft proposal to be presented to the Adaptation Fund. May, 2013.

Source: Ministerio de Ambiente (2021).

Map 5. Coastal marine zones vulnerable to sea level rise in the Program intervention area – Coastal strip from Arraiján to the mouth of the Parita river.

Source: Ministerio de Ambiente (2021).

Map 6. Population distribution in the Program intervention area - Coastal strip from Arraiján to the mouth of the Parita river.

Source: Ministerio de Ambiente (2021).

General objective that the Program seeks is to increase the resilience of the communities and their livelihoods in the coastal zone of the Central Pacific of Panama, through the generation of climate information applied to the development of tools and plans that guide key adaptation actions and the strengthening of actors' capacities, while improving the management of high-value ecosystems as sinks of blue carbon and other important ecosystem services they provide. To meet this objective, the Program has identified three specific objectives:

- **Specific objective 1**: Generate greater resilience in essential livelihoods through climate-smart management and productive diversification actions; as well as the development of actions for the conservation and restoration of high value coastal marine ecosystems.
- **Specific objective 2**: Improve local and national capacity to respond to climate threats by developing effective tools for science-based decision-making, as well as risk reduction systems with a nature-based approach.
- **Specific objective 3**. Build and improve climate governance, the management and appropriation of knowledge on the matter, at the local, regional, and national levels, for the implementation of tangible adaptation and resilience measures to climate change.

Table 1.3. Program components expected concrete outputs and outcomes, and your budgets.

Expected Concrete Products	Expected results	Amount (US$)
Component 1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions.		
1.1.1 At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based technologies and solutions. 1.1.2 12 hives installed in 4 apiaries installed, including the training of beneficiaries (beekeepers) and the provision of equipment. 1.1.3 Installed four pilot oyster farming experiences, including training of beneficiaries and provision of equipment. 1.1.4 17 comprehensive garden programs established (10 for vulnerable families and 7 in schools in six priority districts) with water harvesting systems and drip irrigation systems. 1.1.5 Installed 3 pilot tilapia farming project with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell. 1.1.6 Ten strengthened community tourism experiences including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience. 1.1.7 12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4 projects to transform fishing products into value-added products with gender participation. • 1.1.8 10-pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology	1.1 Strengthening of livelihood management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems.	4,350,000
1.2.1 Ten business plans prepared and implemented for products or services with the greatest potential in the Program.	1.2 Value chains for the production, marketing and commercialization of	

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• 1.2.2 Reports on strategic investments for the development of business plans and more specialized studies.	climate- smart and gender-inclusive products and services have been strengthened.	
• 1.3.1 The management of five rural aqueducts in the Program area has been strengthened. • 1.3.2 20 multipurpose water harvesting systems installed using efficient and low-cost technologies.	1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.	
1.4.1 A loss / gain analysis of forest coverage in the Program intervention area through the use of geographic information systems. 1.4.2 An action plan for the recovery of high-value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity. Installed and operating at least two community nurseries in the Program area. 1.4.3 150 ha reforested, enriched and / or restored high value ecosystems.	1.4 Reduced pressure on high- value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems.	
Component 2. Improve local and national capacity to face exposure to climate-related hazards and threats, through planning tools and risk reduction systems.		
2.1.1 Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the Program area. 2.1.2 A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios. 2.1.3 Three Environmental Territorial Planning plans for prioritized districts. 2.1.4 Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories.	2.1 Developed baseline studies on climate change with application in planning and environmental land use planning.	2,550,000
2.2.1 Improved meteorological stations of the hydrographic basins of the Program area to generate complementary agroclimatic and hydrological information. 2.2.2 Acquired, installed and connected three sea level gauges to the national and global tsunami monitoring network. The Early Warning System for floods, waves and tsunamis strengthened for the Central Pacific sector of Panama. Including maintenance and preparation of technical equipment for this maintenance.	2.2 Strengthening the network of meteorological stations and tide gauges, and related Early Warning Systems (EWS).	
2.3.1 A climate vulnerability and environmental risk modeling platform installed and operating. 2.3.2 Protocol for the management of information and the use of the platform for modeling vulnerability and environmental risks.	2.3 Developed a platform for modeling climate vulnerability and environmental risk.	
2.4.1 Ten Cost/effectiveness analysis of community projects developed by the AF, with experiences and lessons learned identified and systematized.	2.4 Developed case studies of cost effectiveness of community projects.	

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2.5.1 Analysis of the implementation of the Monitoring and Evaluation System for Adaptation to climate change with evaluation of the results and goals set and with recommendations for improving the indicators and monitoring and evaluation protocols.	2.5 Strengthening the Monitoring and Evaluation System for Adaptation to Climate Change.	
Component 3. Strengthen the capacity of key stakeholders and improve knowledge on climate adaptation and resilience at the local and national levels, with gender perspective.		
3.1.1 Actors training plan on climate change and ecosystem-based adaptation. 3.1.2 Design of training modules with content validated by the Ministry of the Environment. 3.1.3 Evaluation reports of each training process developed.	3.1 The capacities of key actors on Climate Change and adaptation based on ecosystems have been strengthened and successful experiences implemented.	1,516,977
3.2.1 Action plan for the integration of the gender perspective in the project. 3.2.2 Reports on implementation and memories of gender capacity building workshops.	3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities.	
3.3.1 Special modules designed and implemented for the implementation of adaptation strategies and plans at the local level and the management of Programs for 200 beneficiaries. 3.3.2 Evaluation of capacity building processes. At least 15 proposals for adaptation Programs of CBOs and municipalities prepared. 3.3.3 Inter-municipal agreements established for the development of joint adaptation actions.	3.3 Strengthened capacities of Community Based Organizations and Municipalities on climate change, ecosystem-based adaptation and comprehensive Program management.	
3.4.1 Comprehensive knowledge management Program designed and in operation with established goals and indicators that facilitate its evaluation. 3.4.2 Adaptation Platform strengthened and operating. 3.4.3 Systematization of experiences and lessons learned from Programs carried out in the Program.	3.4 Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a Program for systematizing experiences, lessons learned and their appropriation.	
3.5.1 It includes the preparation of a communication plan for the program and the communication of calls, campaigns, lessons learned, experiences and results of the program through the different means of communication and established platforms, including social networks.	3.5. Ensured the communication actions of the Program that provide information to its stakeholders.	
4. Total Direct Costs		8,416,977
5. Program Execution Cost (9.5%)		799,613
6. Total Program Cost		9,216,590
7. Program Cycle Management Fee charged by the Implementing Entity (8.5%)		783,410
Required Financing Amount		10,000,0000

Table 1.4 Proposed program milestones

Milestone	Expected Dates
Start of Program implementation	Last quarter of 2024 (November 2024, pc)
Mid-term review (if planned)	November 2026(e)
Program closure	April 2029 (of) (Program Completion)

PART II: PROJECT / PROGRAM JUSTIFICATION

how

A1. Program components

Component 1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions.

Budget: US $ 4,350,000

The first component of the program will be focused on improving the livelihood management of coastal communities through productive diversification and adaptation of traditional productive systems. This will be achieved with the incorporation of technology and nature-based solutions that allow (i) greater resilience of productive systems to climate vulnerability and (ii) diversification of the income sources of these communities. This includes the analysis of the value chain of the products with the greatest potential that allow the generation of added values and the inclusion of gender. The development of water resource management models is also considered as a key element in food security; This includes strengthening the management of local aqueducts and water harvesting systems with efficient and low-cost technology. In addition, it is contemplated the reduction of pressures of high value ecosystems -such as mangroves and other ecosystems- through conservation, reforestation, enrichment and / or restoration actions to maintain and improve the ecosystem services that they provide to communities and communities. region. In addition, this component includes the establishment of a fund aimed at Community Based Organizations and Municipalities, so that innovative actions are promoted through small projects from the local perspective to strengthen community adaptation and resilience and their livelihoods. for this purpose, a capacity building project for these actors will be designed and implemented in Component 3.

1.1 Strengthened livelihood management through productive diversification and the incorporation of technologies and solutions based on nature in traditional production systems.

The development of farm management plans is considered as a planning tool and inclusion of good practices and productive diversification, considering the limitations and potential of each farm and its environmental goods and services. It is estimated that approximately 1,000 hectares will be positively impacted by these activities. Field school methods will be used for the beneficiaries to strengthen their capacities by practically experiencing the different actions and activities identified in the farm planning processes. Productive diversification will be considered as one of the key adaptation measures and the development of beekeeping, oyster farming, aquaponics, community tourism, among others, will be considered as alternatives to productive diversification. Pilot projects for climate-smart production will be developed on more traditional activities (livestock, agriculture, fishing, harvesting of black shell and crabs) so that they are carried out in a more sustainable way, incorporating technology and adaptation techniques based on nature. For the selection of beneficiaries, selection processes will be developed based on variables that will include gender inclusion.

Expected concrete products:

1.1.1 At least 60 farm management plans developed and implemented to strengthen sustainable livestock (Silvopastoral Systems) and climate-smart agriculture, incorporating nature-based technologies and solutions. Of the 60 selected farms, five model farms will be established in different districts where a greater number of good production practices and the use of efficient technologies will be established. These model farms will serve as the basis for training actions and exchange of experience from producer to producer; at least two of the five farms must be managed by women.

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Table 1.1.1 Beneficiary Communities Livestock and Sustainable Agriculture.

Province	District	Populated	Sustainable Livestock	Climate Smart Agriculture
Coclé	Antón	Antón	5	2
		Chirú	5	
	Natá	Natá	5	2
		Capellanía	5	2

		El Caño	5	
	Aguadulce	El Roble	5	2
		El Cristo	5	
		Barrios Unidos	5	
Herrera	Parita	Parita	5	2
		Paris	5	
Total			**50**	**10**

1.1.2 12 hives installed in 4 apiaries, including the training of beneficiaries (beekeepers) and the provision of equipment. Apiaries are part of a strategy for productive diversification, combating poverty and gender inclusion. The use of technology and best practices in beekeeping will be incorporated. Monitoring and follow-up by MIDA

Table 1.1.2 Beekeeping beneficiary communities

Province	District	Populated	Beekeeping
Coclé	Natá	Natá	1
	Aguadulce	El Roble	1
Herrera	Parita	Parita	1
		Paris	1
Total			**4**

1.1.3 Installed four oyster farming pilot experiences, including training of beneficiaries and provision of equipment.

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Table 1.1.3 Beneficiary communities Oyster farming

Province	District	Populated	Oyster Farming
Coclé	Aguadulce	Aguadulce: Cooperativa Unida Comercializadora del Puerto de Aguadulce	1
Herrera	Parita	Parita: Asociación Sardineros Boca Parita	1
Panamá Oeste	Chame	Espavé: Asociación Agro-ecoturística Eben Ezer	1
	Capira	Monte Oscuro: Asociación Eco Ambiental de Monte Oscuro de Capira	1

1.1.4 17 comprehensive garden programs established (10 for vulnerable families and 7 in schools in six priority districts) with water harvesting systems and drip irrigation systems. The five educational centers selected in different districts will serve as training scenarios for parents and students on the installation and management of integrated orchards and the program will provide seeds and technical assistance for these centers and parents who want to replicate the experience in their homes. These gardens have an agroecological approach, incorporating good productive practices with water and soil conservation, and biodiversity conservation. Bioinputs are used (avoiding the use of agrochemicals) promoting the incorporation of microorganisms in the soil and beneficial plants (fertilizers, repellents, etc.) for greater productivity. Monitoring and follow-up is the responsibility of MIDA.

Table 1.1.4 Villages and schools benefiting from comprehensive gardens

Province	District	Beneficiary Communities	Beneficiary Schools
Coclé	Antón	Antón: 2	**Antón**: Centro Educativo La Mata
		Río Hato: 1	**Río Hato**: I.P.T. Rio Hato
	Natá	Natá: 2	**Nata**: Colegio Mariano Prados
	Aguadulce	El Roble: 1	**El Roble**: Colegio El Roble
Herrera	Chitré	Monagrillo: 1	**Monagrillo**: Colegio Segundo Familiar Cano
	Parita	Paris: 2	**Paris**: Escuela Paris
Panamá Oeste	Chame	Chame: 1	**Chame**: Centro Educativo Harmodio Arias Madrid

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Total	**10**	**7**

1.1.5 Installed 3 pilot tilapia farming projects with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell.

Table 1.1.5 Beneficiary communities tilapia farming cultivation and use of black shell.

Province	District	Populated	Beneficiary Community	Tilapia or Black Shell
Panamá Oeste	Capira	Capira	Instituto Profesional y Técnico de Capira	Tilapia
		Monte Oscuro	Asociación Eco-Ambiental de Monte Oscuro	Black Shell
			Centro Educativo de Monte Oscuro	Tilapia
			Hogares Crea	Tilapia
	Chame	Sajalices	Defensores Unidos por el Manglar de Sajalices	Black Shell
			Asociación Puerto Julián	Black Shell
		Punta Chame	Chame Explora	Black Shell
			Pachamama Punta Chame	Black Shell

1.1.6 Ten strengthened community tourism experiences including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience. Each experience will be evaluated and key factors for improvement will be identified through the incorporation of good sustainable tourism practices, technology and key capacity building needs. The evaluation and monitoring will be carried out by the Panama Tourism Authority (ATP).

Table 1.1.6 Ten Community Experiential Fishing Tourism Projects

Province	District	Populated	Beneficiary Community	Beneficiarios Directos
Coclé	Antón	Antón	Asociación de Pescadores Artesanales Playa La Pacora	22
		Río Hato	Cooperativa de Pesca Artesanal Nueva Generación, R.L.	23
	Aguadulce	Playa el Salao	Cooperativa de Pescadores Artesanales El Salao, R.L.	20
Herrera	Parita	Parita	Cooperativa de Servicio Múltiples Pescadores Artesanales y Comercializadores de la Actividad del Mar R.L. (COOPACAMAR R.L.)	24
		Paris	Cooperativa de Servicios Múltiples Pescadores Río Santa María, R.L. (COOPRISMA, R.L.)	32
Panamá Oeste	Chame	Sajalices	Asociación de Pescadores Artesanales y Agroturística del Espavé (APAAE)	15
		Punta Chame	Asociación de pescadores artesanales y turísticos de Punta Chame.	20
		Nueva Gorgona	Cooperativa de Pesca El Diamante del Mar, R.L.	23
	Arraiján	Veracruz	Asociación de Pescadores de Veracruz	20

	Chorrera	Playa Leona	Asociación de Pescadores Artesanales de Playa Leona	60

1.1.7 12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4 projects to transform fishing products into value-added products with gender participation. An analysis of each project will be carried out to identify needs to improve fishing activities by incorporating good practices, technology and training. Monitoring and follow-up will be the responsibility of ARAP.

Table 1.1.~~6~~ 7 Communities Beneficiaries of community fishing projects

Province	District	Populated	Beneficiary Community	Community fishing (CF) and/or Transformation
Coclé	Antón	Antón	Playa La Pacora	CF
			Los Azules	CF
		Río Hato	Boca de Río Hato	CF
		El Chirú	Hogares CREA	CF/T
	Aguadulce	Aguadulce	Puerto Aguadulce COOPUCPA, R.L	CF/T
Herrera	Parita	Parita	Asociación de Sardineros de Boca de Parita	CF/T
		Paris	Paris	CF
Panamá Oeste	Chame	Sajalices	El Espavé	CF
		Punta Chame	Punta Chame	CF
	Chorrera	Chorrera	Asociación de Pescadores y Extractores Playa Leona	CF/T
	Arraiján	Vista Alegre	Chapala	CF
		Veracruz	Veracruz	CF

1.1.8 10 pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology. Water harvesting systems will be installed according to the conditions for each project, with training for each group or family and incorporating low-cost technology. Monitoring and follow-up will be the responsibility of MIDA.

Table 1.1.~~7~~ 8 Beneficiary Communities of Efficient Irrigation Project

Province	District	Populated	Climate Smart Agriculture
Coclé	Antón	Antón	2
	Natá	Natá	2
		Capellanía	2
	Aguadulce	El Roble	2
Herrera	Parita	Parita	2
Total			**10**

Technical specifications of the solution:

Diversification of livelihoods is one of the best solutions to face climate variability and other effects generated by global climate change. The preparation of 60 farm management plans will allow the development of a specific diagnosis of the current situation of the farm and its problems, which includes determining the impacts of climate change and proposing solutions based on nature that improve the climate resilience of the livelihoods, this includes productive diversification, the incorporation of efficient and low-cost technology, among other options for the development of climate-smart production systems. It also includes the implementation of actions to improve traditional practices towards more efficient systems and with greater climate resilience, including agroforestry, forestry, edible forests, comprehensive home gardens and productive diversification with actions identified by beneficiaries of the program's communities and institutions of government (MIDA, ARAP and ATP) that includes beekeeping, aquaponics, oyster farming, community fishing and transformation of lower value fishing into by-products with gender participation (including collection of black shell) and community tourism that will also serve as a model to be replicated in other areas of the country.

Climate change threat:
The climatic variability in the Dry Arc of Panama, characterized by altered patterns of seasonal precipitation and high-water stress during the dry season, which are aggravated by causing droughts during the El Niño seasons and severely impacting traditional agricultural and livestock activities is the main threat climate in this area. Additionally, the rise in sea level is also impacting on coastal area livelihoods having an effect on the yields or use of services such as fishing or tourism.
Clear link between the threat of climate change and the solution:
The high altered patterns of seasonal precipitation and the high-water stress that occurs in the area during the dry season are negatively affecting the performance of livelihoods, a situation that becomes more serious during periods of El Niño. Saltwater intrusion from sea level rise and waves is another risk facing communities and their livelihoods. The application of the farm planning methodology with the determination of adaptation measures, improvement of resilience and productive diversification, is one of the best measures to face climate variability according to the current and potential conditions of each farm, as well as also of its main problems.
Measures to mitigate environmental risks:
To minimize the loss of fertile soil due to erosion and sedimentation, special measures will be ensured according to each production system that may include the application of different techniques such as rotation in silvopastoral systems, establishment of forage banks, isolation and recovery of areas affected by erosion (gullies) and other measures. For agricultural activities, the management of soil loss could include the application of good practices, live barriers, spatial arrangement of crops, contour planting (contour lines), combination of reforested species, among other measures. To avoid soil contamination, organic fertilizers will be used, and for this, as part of the capacity-building actions, actions to produce organic fertilizers will be included with the application of techniques such as compost management and worm farming.
The activities of the program that will manage the risks of saltwater intrusion including soil quality are the monitoring of sea level rise and the monitoring of soil quality (physical-chemical analysis such as ph. output, etc.) as part of the management plan development process. The actions to reduce or mitigate risks and impacts will be based on solutions based on ecosystems such as the recovery of mangroves in impact areas, the recovery of transition ecosystems between coastal and terrestrial zones, the use of agricultural products with greater resilience to salinity, diversification and mobilization of livelihoods to areas with lower risk of effects from marine intrusion.
Additional description and context of the activity:
The proposed actions are in accordance with the National Climate Change Plan of the Agricultural Sector of the Republic of Panama, which promotes sustainable production schemes and productive diversification that incorporate variables for adaptation to global climate change that contribute to the food and nutritional security of the populations. most vulnerable to the effects of global climate change.
Solution specifics / details:
The design of the solution includes elaboration of farm management plans with the determination of best productive practices based on nature to improve productivity, adapting livelihoods to climatic effects, and improving their resilience. It incorporates productive diversification as an important part of climate adaptation with the support of the use of efficient and low-cost technologies that contribute to the food and nutritional security of the coastal communities in the program area.
Magnitude / scope: Coastal communities located in the Dry Arc of Panama.

- ✓ Location: Coastal townships of the Dry Arch of Panama. Chitré, Parita, Aguadulce, Natá, Antón and Chame districts.
- ✓ Beneficiaries: Coastal communities with greater vulnerability: Incorporation of women as beneficiaries, especially in homes where the woman is the head of the family.
- ✓ Objectives: Strengthen adaptation and improve resilience of the livelihoods of vulnerable coastal communities through diversification, nature-based solutions and the incorporation of efficient and low-cost technology.
- ✓ Inter-institutional coordination: with government entities responsible for each matter: Ministry of Agricultural Development, Panama Aquatic Resources Authority and Panama Tourism Authority.
- ✓ Applicable technical standards: See Table 2.35

In Annex 2 find the Product Summary (Table 2.1) and Adaptation resonance (Table 2.2). Annex 2.1 details the main activities and methodologies by product, considering the associated risks, mitigation measures and those responsible for monitoring.

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1.2 Strengthened value chains for the production, marketing, and commercialization of climate-smart and gender- inclusive products and services.

The evaluation of the different products and services generated with the support of the adaptation program is contemplated in order to determine those that show the greatest potential for the development of its value chain, which must include, among other aspects, the increase in added value that is It can generate from the processing of the product, which guarantees the inclusion of gender in the production scheme and its benefits and that its development is carried out in compliance with sustainable production standards. For this purpose, it is contemplated to develop ten business plans for the products or services with the greatest potential selected and it also contemplates strategic investments that will include the purchase and installation of equipment and its maintenance, training, and development of more specialized studies on the marketing and commercialization of these products.
The ten business plans come from the community projects identified in product 1.1 with the greatest development potential considering their value chain and incorporation of vulnerable groups in their development. Its monitoring and evaluation will be carried out by each governing entity in accordance with its responsibilities (MiAMBIENTE, MIDA, ARAP or ATP).

Expected concrete products:

- Ten business plans prepared and implemented for products or services with the greatest potential in the program.
  The ten business plans with the greatest potential must include at least one community project in sustainable livestock farming, climate-smart agriculture, beekeeping, oyster farming, integral gardens, tilapia farming, community tourism and community fishing.
- Reports on strategic investments for the development of business plans and more specialized studies.

Technical specifications of the solution:

A diagnosis will be developed that allows evaluating and prioritizing climate-smart products with greater development potential, considering fair and responsible market criteria, and greater participation in gender-inclusive development processes of the chain. Business plans will be drawn up for the ten products with the greatest potential and these will be supported with strategic investments that allow the implementation of key actions. The strengthening of capacities will be a key element as part of the development of strengthening the value chains of the selected products and of great importance also for the long-term sustainability of the sub-projects and maintenance of the adaptation measures and strengthening of the climate resilience of the same.

Climate change threat:

Strengthening the value chain is key to the sustainability and development of the potential of livelihoods and thus also the long-term maintenance of nature-based solutions. The development of value chains will allow the inclusion of gender in the production process and also in the benefits, but it will also help to assess climate adaptation and resilience measures, generating greater empathy with them. In addition, the development of awareness campaigns for stakeholders on fair and responsible markets will help to understand and assess not only the efforts of producers, but also the costs and risks they face in the face of the effects and impacts of climate change.

Clear link between the threat of climate change and the solution:

The adaptation measures and strengthening of climate resilience in the field can be maintained and improved in the long term if there are resources after the program that allow for sustainability to the actions financed by the program, in this sense the strengthening and development of the value chain constitutes that key element of the production process that could contribute economically to the sustainability of the adaptation and resilience actions implemented in the livelihoods. Consumers sensitized and more responsible to the effects of climate change will be an additional benefit that is contemplated as part of the marketing and positioning actions of climate-smart products.

Measures to mitigate environmental risks:

Information on climate variability and risks will be considered, as well as vulnerability analyzes with part of the variables for prioritizing productive items and in addition to strategic investments for the development of value chains. Consumer awareness will be key to positioning climate-smart products.

Additional description and context of the activity:

Fair and responsible markets for climate-smart products, as well as brand positioning and added value of these products, must continue to be managed.

Solution specifics / details:

The design of the solution includes: the preparation of a diagnosis that allows evaluating the productive areas

with the greatest potential for the improvement or development of its value chain and that allows inclusion of gender and participation of its benefits. A business plan will be drawn up for the selected products that allows the selection of business objectives and goals that, through key strategic investments that promote the development of the value chain of these selected products and that at the same time generate opportunities for participation by young people and women in the different tasks or job opportunities and in their benefits. In addition, a marketing strategy will be developed for the selected products in order to promote fair and responsible markets for climate -smart products and generate awareness and understanding in consumers of the context, risk and productive development of the products they consume.

- ✓ Magnitude / scope: Ten projects with the greatest potential with elaboration and implemented business plans that allow the development of their value chain with the inclusion of gender in their development and benefits of the communities of the coastal townships in the program area. Fair and responsible market drive for climate-smart products strengthened and increased awareness through market strategy development. The selected products and services will be those with the greatest potential for commercialization and development of their value chain that allows the insertion of women. The selected products and services must come from the productive activities and their by-products framed in activity 1.1, which include: sustainable agriculture and livestock, honey production, oyster farming, vegetable production, community tourism, and community fisheries.
- ✓ Location: Communities of the coastal townships of the Dry Arc of Panama. Chitré, Parita, Aguadulce, Natá, Antón and Chame districts.
- ✓ Beneficiaries: Selected community members and beneficiaries of the implementation of Result 1.1 of this program. Consumers more aware.
- ✓ Objectives: Improve the income of the local population, incorporate women and young people in the value chain and benefits of the development of the value chain of key products and contribute to the sustainability and strengthening of adaptation measures and resilience to livelihoods. In addition, strengthen the market for fair and responsible consumers in Panama.
- ✓ Technical specifications: Diagnosis of prioritization of livelihoods for development of the value chain according to prioritization variables selected and validated with government institutions counterparts. Preparation of business plans and implementation of key strategic actions (strategic investments) that generate impact and allow participatory inclusion in the development of the value chain and benefits, considering climate variability, vulnerability and environmental risks. Preparation and implementation of a market strategy for the positioning of climate-smart products and greater consumer awareness.
- ✓ Inter-institutional coordination. In coordination with competent government institutions according to the selected product.
- ✓ Applicable technical standards: See Table 2.35.

Highlights of the consultation process:

For prioritization, consultations with the same potential beneficiaries and other key actors in the value chain should be considered.

In Annex 2 find the Product Summary (Table 2.3) and Adaptation resonance (Table 2.4). Annex 2.1 details the main activities and methodologies by product, considering the associated risks, mitigation measures and those responsible for monitoring.

1.3 Improved water resource management in coastal communities through the implementation of rural aqueduct management models and water harvesting with the use of efficient and low-cost technologies.

Considering that water is considered a critical key resource for food security and the well-being of the communities and considering that the program is carried out in the climatic area called Arco Seco de Panamá -where water stress is an important factor during the dry season-, The program contemplates improving the management of at least five rural aqueducts through coordinated work with the Rural Aqueduct Administration Boards (JAAR) and the implementation of 20 water harvesting systems with the use of efficient and low-cost technology. For the installation of these rainwater harvesting systems (SCALL), farms that have management plans developed in product 2.1 and that are multipurpose for the benefit of people's quality of life and the provision of water for systems will be considered. efficient irrigation systems with the use of low-cost technology. The Ministry of Health (MINSA) will be in charge of monitoring and evaluation as the competent institution. In addition, the program, together with the MINSA, will facilitate the training of local personnel to comply with safety and water quality standards, and the

maintenance and repair of rural aqueducts.

Expected concrete products:

- Strengthened the management of five rural aqueducts in the program area.

Table 1.3.1 Beneficiary Communities Strengthening Rural Aqueducts

Province	District	Beneficiary Community	Province	District	Beneficiary Community
Coclé	Antón	Rio Hato: El Jobo	**Panamá Oeste**	San Carlos	El Higo: Corona
	Aguadulce	El Roble: Menbrillal			El Nance
Herrera	Parita	Paris			
Total		**3**	**Total**		**2**

- 20 multipurpose water harvesting systems installed using efficient and low-cost technologies.

Table 1.3.2 Beneficiary Communities Multipurpose Water Harvesting Systems

Province	District	Beneficiary Community	Province	District	Beneficiary Community
Coclé	Antón	Chirú	**Panamá Oeste**	San Carlos	El Higo
		Juan Hombrón		Chame	Punta Chame
		Río Hato		Capira	Monte Oscuro
		Jobo (Centro de Salud)		La Chorrera	Puerto Caimito
	Natá	Natá Cabecera			Playa Leona
	Aguadulce	El Roble (2)		Arraiján	Veracruz: Cosobo
		Barrios Unidos: El Salado			Cerro Silvestre: Playa de Bique
Herrera	Chitré	Monagrillo (2)			
		Llano Bonito (2)			
	Parita	Parita			
Total		**13**			7

Technical specifications of the solution:

Selection of five rural aqueducts in the program area that face management problems because of global climate change or land use conflicts and that are causing effects on coastal populations and their livelihoods. Options will be selected through the municipal authorities in accordance with criteria determined jointly by the competent institutions (Ministry of Health and Ministry of the Environment). An evaluation of the status of each rural aqueduct will be carried out and actions will be planned and developed to improve management considering risks and impacts on communities and their livelihoods that incorporate adaptation measures based on nature and climate resilience to face climate variability. characteristic of the area. Administrators and technicians responsible for the rural aqueducts of all the Water Administration Boards (JAAR) located in the coastal zone of the program will be included in the actions to strengthen capacities for the management and maintenance of their community aqueducts.

On the other hand, it is proposed to install a total of 20 multipurpose water harvesting systems with the use of efficient and low-cost technologies, which includes training beneficiaries in their installation and maintenance. With the support of local authorities (mayors and village representatives) and the assistance of the Ministry of Agricultural Development, the beneficiaries will be selected based on the communities that have experienced severe and recurrent droughts in the program area and that also face significant variability scenarios. in precipitation (MIDA Database of losses and damages) and dry seasons with high water stress. For the development of this product, the lessons learned and experiences in the installation of a water harvesting system with the use of efficient and low - cost technologies developed in the program for Adaptation to Climate Change through Integrated Resource Management will be taken into consideration. Water in Panama financed by the Adaptation Fund.

The solutions for the water harvesting establishment will be given based on the conditions and needs of each site, for which the technicians must develop an evaluation and propose the best water harvesting system with the incorporation of efficient and low-cost technologies. cost that contributes to the household needs and livelihoods of the beneficiaries.

The water collected through these water harvesting systems will be used for domestic use such as sanitation, garden irrigation and, where appropriate, for human consumption. In the case of access needs to water for human consumption, a basic membrane filtration system (for physical treatment, such as slow sand filtration) and chlorination / boiling will be used, in accordance with MINSA recommendations for treatment of water for small

homes. In these cases, the coordination and evaluation of the water systems for human consumption will be done jointly with the MINSA in accordance with compliance with national and international norms and standards. In both cases, the technical solutions will be implemented following the recommendations and specifications of the manual: "Rainwater harvesting and storage, technical options for family farming in Latin America and the Caribbean" (FAO, 2013).

For the selection of the beneficiaries, criteria of limited access to water in households, households headed by women, households headed by the elderly, loss of productivity due to water shortages, among other criteria that will be established and agreed with the Ministry of Environment, the Ministry of Health, and local authorities.

Climate change threat:

The climatic variability with heavy rains in short times and lack of rainfall in prolonged periods and at times that affects the availability of quality water for coastal communities and their livelihoods, putting their health and food security at risk.

Clear link between the threat of climate change and the solution:

The seasonal scarcity of water that worsens during periods of the El Niño phenomenon, in addition to precipitation patterns that are more variable in intensity and frequency, the installation of water harvesting systems with the use of efficient and low-cost technology is an adaptation measure for mitigate the need for water for human use and maintain key livelihoods for the food security of beneficiary families.

Measures to mitigate environmental risks:

Comprehensive management of rural aqueducts with the application of adaptation measures based on nature that help protect and improve the environment of water catchment areas and micro-basins and strengthening the capacities of the JAARs for better management of rural aqueducts. The design of the adaptation solutions will consider the soil conditions and the possible effects of runoff due to excess water on the area and cultivation zones, measures beyond the design will be implemented in the areas where the greatest risk is determined. To avoid contamination of drinking water, family members will be trained in installation processes, system maintenance and treatment of drinking water.

Additional description and context of the activity:

Evaluation and selection of five rural aqueduct systems based on the greatest needs for support and impact on the number of beneficiaries and their livelihoods. Determination of comprehensive measures to improve the environment and management of rural aqueducts and development of comprehensive capacity-building processes for the management of rural aqueducts that include program beneficiaries and other JAARs in the area to allow greater impact.

The installation of 20 multipurpose water harvesting systems with the use of efficient and low-cost technologies should be understood as an adaptation action to the effects of climate change with the aim of improving the quality of life of beneficiary households and their livelihoods. This action is in line with the National Water Security Plan that seeks to guarantee the supply of water for human uses, productive uses and reduce the risk associated with extreme climate events such as droughts or floods.

Solution specifics / details:

For rural aqueducts, a joint evaluation will be developed with the Ministry of Health in order to select the five rural aqueducts that require the most support. Based on a comprehensive evaluation, a comprehensive action plan will be developed that considers actions to improve the environment of the catchment and micro-basin areas, improvement of the supply sites and water mobilization systems, its maintenance and strengthening of JAAR capacities.

For water harvesting systems, the design of the solution requires the development of a coordinated process for the selection of beneficiaries based on various criteria and variables that allow selecting households whose need to install multipurpose water harvesting systems is a priority. for your quality of life and your immediate food security. This process must be carried out jointly with competent institutions such as the Ministry of the Environment, the Ministry of Health, the Ministry of Agricultural Development, and local authorities (mayors and Representatives of the Township).

The design of every system must adjust to an environment evaluation where the system will be developed, considering the environmental risks and the climate data of the area. Within this process it must be included also the capacities generation inside the beneficiary households about installation, operations, and management of the systems; as well as the water treatment whenever it is required.

- ✓ Magnitude / scope: Dry Arc of Panama with national escalation

- ✓ Location: coastal communities in the districts of Chitré, Parita, Aguadulce, Natá, and Antón. One rural aqueduct per district.
- ✓ Beneficiaries: Local community. Coastal community located in a highly vulnerable area, with high poverty rates, requirements to improve the local water system for health, basic needs and production. Considerations of gender and access to water must be taken into account.
- ✓ Objectives: Improve access to water as a basic resource for the adaptation of communities and their livelihoods to climate change.
- ✓ Technical specifications: Work must be done with the Water Administration Boards in the selected communities in the management and maintenance of rural aqueducts, protection and restoration of catchment areas and administration of the organization.
- ✓ Inter-institutional coordination: Ministry of the Environment and Ministry of Health
- ✓ Applicable technical standard: See Table 2.35.

Highlights of the consultation process:
The Ministry of Agricultural Development with the support of their local authorities and the knowledge of their technicians who offers technical support to the producers, prioritized the installation of 20 water harvest systems with the use of low-cost efficient technologies as an adaptation solution to the climate change of high importance for the coastal areas of the climatic zone called Dry Arch of Panama. In Annex 2 find the Product Summary (Table 2.5) and Adaptation resonance (Table 2.6). Annex 2.1 details the main activities and methodologies by product, considering the associated risks, mitigation measures and those responsible for monitoring.

1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment, or restoration of these ecosystems.

The development of a loss / gain analysis of high value ecosystems (dry forest, mangroves, and gallery forests) in the program area is contemplated using geographic information systems. This will be done by comparing past scenarios (from at least 30 years ago) and present ones, which will make it possible to identify areas with potential for the recovery of these ecosystems and for the improvement of connectivity, through reforestation, enrichment, or restoration. The establishment of community nurseries and training for their management are included, as a productive alternative that will allow the generation of seedlings of native species characteristic of the area to meet the demand for the different actions of reforestation, enrichment, and restoration of these ecosystems. The goal is the reforestation, enrichment, or restoration of at least 150 ha of high-value ecosystems such as dry forests, mangroves, and gallery forests, which also includes protection and reforestation actions on farms through the implementation of the plans. farm management. Reforestation actions will be carried out with native species characteristic of each ecosystem in the region and supervision and monitoring will be carried out by MiAMBIENTE as part of its legal responsibilities.

Expected concrete products:

- An analysis of loss / gain of forest coverage in the area of intervention of the program through the use of geographic information systems.
- An action plan for the recovery of high value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity.
- Installed and operating at least three community nurseries in the program area:

Table 1.4.1. Location of Community Nurseries

Province	District	Beneficiary Community	Province	District	Beneficiary Community
Herrera	Parita	El Retén: Asociación Nuevo Manglar	**Panamá Oeste**	Capira	Monte Oscuro: Asociación Eco Ambiental de Monte Oscuro
Coclé	Antón	Río Hato: Asociación Halcones del Jobo.			
Total		**2**	**Total**		**1**

- 150 ha reforested, enriched and / or restored of high value ecosystems. These are located in three sectors:
  a. From Los Azules to Juan Hombron, considering the lower part of the Ánton River Basin, province of Coclé.
  b. From the Parita district to Monagrillo considering the lower part of the Santa María River Basin, province of Herrera.

c. Chame Bay to the Monte Oscuro area of the Capira District, Panama Oeste province.

Technical specifications of the solution:

An analysis of the loss / gain of vegetation and land uses in the program area will be developed in order to determine the sites and possible causes of important losses of key ecosystems to face the impacts generated by climate change or improve ecosystems of high value as carbon sinks. The results of the study will allow the development of an action plan that allows considering the climatic impacts and the maintenance or improvement of the provision of ecosystem goods and services provided by the different types of vegetation, including the conservation of biodiversity. This action plan will determine the sites and potential actions for the recovery of ecosystems such as restoration, enrichment, reforestation and / or natural regeneration actions. The plan will also consider the installation of nurseries with the incorporation of community members as part of productive alternatives to facilitate the generation of seedlings for the different ecosystem recovery processes. A training process will be developed with inclusive participation of youth and women in actions to improve the forest coverage of strategic sites determined by the process.

***Climate change threat*:**

The variability in precipitation patterns, the scarcity of water in the dry season and the rise in sea level are causing direct and indirect effects on ecosystems in the program area.

***Clear link between the threat of climate change and the solution*:**

The recovery of ecosystems is one of the key measures for adaptation to climate change, since part of the environmental services that these provide are protection against storms, water regulation, protection against runoff and sedimentation, and the reduction of impacts from rising sea levels. Additionally, it is important to highlight their high value as carbon sinks, especially ecosystems such as wetlands and mangroves (Blue Carbon).

***Measures to mitigate environmental risks*:**

The areas should be selected considering the establishment of agreements with the owners and the possible risks of loss of seedlings due to variations in rainfall or prolonged periods of droughts. Likewise, the projections of sea level rise should be considered for enrichment, restoration, or reforestation processes in mangroves. The selection of native species must be made based on the ecosystems and vegetation characteristic of the area.

***Additional description and context of the activity*:**

The proposed actions are in accordance with the National Forestry Strategy 2050, which is aimed at guaranteeing the conservation of this important resource, stimulating a sustainable forest industry, conserving forest heritage as an important basis for ecosystems, and mitigating the effects of global climate change. Additionally, the actions are also in line with the Practical Guide for Adaptation to Climate Change in Marine-Coastal Zones of the Panamanian Pacific, which aims to formulate a series of measures that make the way in which climate change is planned safer and more sustainable. development of coastal communities and the development of measures to strengthen the resilience of these communities in the face of the current climate with its extremes and fluctuations, in a way that allows them to adapt to global climate change, such as actions for the protection and recovery of high-value ecosystems such as wetlands and mangroves for their various goods and services they provide to local coastal populations and their recognition as important carbon sinks.

***Solution specifics / details*:**

The solution design includes:

- ✓ Magnitude / scope: 150 ha reforested, enriched and / or restored of high value ecosystems, greater knowledge of the state of vegetation and land use in the program area, as well as its main pressures. Strengthened local capacity for the development of initiatives for reforestation or enrichment of ecosystems.
- ✓ Location: Coastal communities with greater vulnerability: Chitré, Parita, Aguadulce, Natá, Antón and Chame districts.
- ✓ Beneficiaries: Local community. The beneficiaries of reforestation and restoration actions must be community-based organizations or organized community groups. 50% of the people hired for reforestation actions must be women or young people under 21 years of age.
- ✓ Objectives: Strengthening the protection and recovery of high value ecosystems for adaptation and mitigation of climate change.
- ✓ Technical specifications: focus on protection and recovery of high value ecosystems for adaptation and mitigation of climate change; at the local scale ecosystems that provide goods and services of significant value to communities.
- ✓ Inter-institutional coordination: Ministry of the Environment with partners of the Alliance for a Million Hectares.

- ✓ Applicable technical standards: See Table 2.35.

Highlights of the consultation process:

Non-profit organizations that support conservation actions and the Ministry of the Environment through its regional offices have identified the need to strengthen actions for the protection and recovery of high-value ecosystems such as mangroves for the provision of services that generate to local communities especially the fishing and collection of black shell and its value as carbon sinks. It is highlighted that the coastal communities recognize the pressures that are maintained on mangrove ecosystems and with them the decline in fishery products and black shell associated with the mangrove.

In Annex 2 find the Product Summary (Table 2.7) and Adaptation resonance (Table 2.8). Annex 2.1 details the main activities and methodologies by product, considering the associated risks, mitigation measures and those responsible for monitoring.

Component 2. Improve local and national capacity to face exposure to climate -related hazards andthreats, through planning tools and risk reduction systems.

Budget: US $ 2,550,000

This component is focused on the development of baseline studies applied to environmental planning and land use planning processes. For this purpose, it is contemplated (i) the development of vulnerability analysis studies in five basins, emphasizing a coas tal-marine approach; and (ii) the development of a sea level rise model for the Central Pacific of Panama in accordance with IPPC scenarios. The information generated by these studies will be key for the preparation of three Environmental Territorial Planning Plans in districts that have areas with very high vulnerability according to the vulnerability index due to sea level rise. These include the district of Antón, Capira and San Carlos. Additionally, the information generated will allow the inclusion of environmental and climate information in the strategic plans for the municipal development of six coastal districts: Aguadulce, Antón, Capira, Chorrera, Natá and Parita. The strengthening g of the network of climate stations and the network of tide gauges is also contemplated, which are key to strengthening the capacity of early warning systems in the program area. The development of a free access platform for modeling vulnerability and climate risks will be a key tool that will be available to users to consider the projections of vulnerability and climate risks in planning, ordering, environmental management, development of infrastructure and risk analysis for public and private investments. Based on the baseline studies and other vulnerability studies, a cost-effectiveness analysis will be developed that will allow prioritizing the main adaptation actions to be implemented by the program. Finally, this component will allow the implementation and strengthening of the Monitoring and Evaluation Sy stem for Adaptation to Climate Change that is being developed by the Ministry of the Environment of Panama.

2.1 Developed baseline studies on climate change with application to planning and environmental land use planning. It includes the development of two types of key studies: (i) climate vulnerability analysis studies and adaptation measures for hydrographic basins and (ii) the development of a sea level rise model for the Central Pacific of Panama that identifies the areas of grea test vulnerability according to IPPC scenarios. The analysis of climate vulnerability and adaptation measures for hydrographic basins will be developed in the Parita river basin (basin 130), the Rio Grande basin (basin 134), the basin of the river Antón (basin 138) and the Caimito river basin (basin 140). This analysis will focus on the marine-coastal zone and includes updating the climate vulnerability study and adaptation measures with a focus on the marine-coastal zone of the Santa María river basin (basin 132) developed by the Adaptation Fund program "Adapting to Climate Change Through Integrated Water Management in Panama". The development of these studies will be key for the elaboration of three plans of Environmental Territorial Ordering of prioritized coastal districts due to their high vulnerability to sea level rise according to the projections of sea level rise from Climate Central, which includes the districts: Chame[31] (Figure 1), Chitré[32] (Figure 2) and San Carlos[33] (Figure 3), Annex 3. This will be key to guiding the development of these districts in a more

[31] https://chame.municipios.gob.pa/64/1520015755_PLAN%20ESTRAT%C3%89GICO%20DISTRITAL%20PARTE%201.PDF.pdf.

[32] http://www.oas.org/juridico/PDFs/mesicic5_pan_res_ane_con_fun_15.pdf.

[33] https://sancarlos.municipios.gob.pa/65/1556048479_PLAN%20ESTRATEGICO%201.pdf

sustainable way by including information on vulnerability and risks to climate variability. The information generated by the vulnerability analyzes will also be incorporated into the municipal strategic plans of five coastal districts in the program area, whose maps can be seen in Annex 3:, Parita (Figure 5), Natá (Figure 6), Capira (Figure 7), Antón (Figure 8) and Aguadulce (Figure 9). This is a key element for local governments to start including environmental information. and actions for adaptation and strengthening of climate resilience in their municipal strategic plans that are financed with decentralized resources from the central government.

Expected concrete products:

- Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the Program area.

Table 2.1.1 Areas selected for vulnerability analysis and adaptation studies to CC.

Province	District	Climate Vulnerability Analysis	Province	District	Climate Vulnerability Analysis
Coclé	Antón	Antón River (136)	Herrera	Parita	Parita River (130)
	Natá	Río Grande River (134)	Panamá Oeste	San Carlos	Caimito River (140)
	Aguadulce	Antón and Caimito River (138)			
Total		3	Total		2

- A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios.
- Three Environmental Territorial Planning plans for prioritized districts: District of Chitré, province of Herrera and districts of San Carlos and Chame in the province of Panamá Oeste.
- Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories: It includes the districts of Antón, Natá and Aguadulce in the province of Coclé; the districts of Chitré and Parita in the Province of Herrera; and the districts of San Carlos, Chame, Capira, La Chorrera and Arraiján in the province of Panamá Oeste.

Technical specifications of the solution:

It will begin with the development of climate vulnerability analysis studies with a focus on marine-coastal areas of the five basins in the program area: the Parita river, the Grande River, between the Antón river and the Caimito river. In the case of the Santa María river basin, prepared by the previous program, a review and update will be made with a focus on the marine-coastal zone and the development of the sea level increase model for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios. The information generated by these studies will be the basis for the inclusion of environmental and climatic considerations in the preparation of key instruments such as environmental land use planning plans and strategic municipal development plans that will guide the sustainable development of the selected municipalities in the coming years. The experience generated will be key for other planning and ordering processes that consider the inclusion of environmental and climate information from the phase of preparation of the Terms of Reference (ToR) or tender documents for public tenders, for which work should be done with the responsible institutions. planning processes. The lessons and experience generated should be systematized in order to be able to use them to generate experiences with other actors and municipalities in other areas.

Climate change threat:

Seasonal variations in rainfall, with intense rains in very short periods of time, as well as the rise in sea level and waves of greater magnitude affect communities including their infrastructures, livelihoods and even endanger the life of the community. population settled in areas with a higher risk of flooding.

Clear link between the threat of climate change and the solution:

The development of comprehensive studies such as analysis of vulnerability at the scale of hydrographic basins and determination of vulnerability and risks due to sea level rise from models developed based on scenarios determined by IPPC, will allow the development of planning instruments and land use planning as well as plans. Municipal development strategies that incorporate the results of vulnerability and climatic risks to guide planned and safer development of the territory with environmental and climatic considerations. This will significantly increase the ability to deal with exposure to climate-related hazards and hazards in the program's action area.

Measures to mitigate environmental risks:

The development of comprehensive studies such as analysis of vulnerability at the scale of hydrographic basins

and determination of vulnerability and risks due to sea level rise from models developed based on scenarios determined by IPPC, will allow the development of planning instruments and land use planning as well as plans. Municipal development strategies that include incorporating the results of vulnerability and climate risks into the tools that guide planned and safer development of the territory with environmental and climatic considerations.

Additional description and context of the activity:

These pilot experiences should serve to improve planning and land use planning processes in Panama, so that beyond local impact, a national impact is expected in terms of process improvement and additional considerations to improve planning, planning and development tools. territorial.

Solution specifics / details:

- Magnitude / scope: at the municipal level, nationally scalable for municipalities in Panama.
- Location: Priority municipalities of the PROGRAM area in the Dry Arch of Panama.
- Beneficiaries: local population, public and private sector investments.
- Objectives: To generate tools that guide planning and ordering. territorial for local territorial development environmental and climatic considerations.
- Inter-institutional coordination: Ministry of Housing, Ministry of Economy and Finance, Ministry of Environment and Municipalities.
- Applicable technical standards: See Table 2.35

In Annex 2 find the Product Summary (Table 2.11) and Adaptation resonance (Table 2.12).

2.2 Strengthening the network of meteorological stations and tide gauges and the related Early Warning Systems.

The strengthening of the existing network of climatic information stations that is managed by IMHPA is contemplated, destined to measure, and regularly record diverse meteorological variables of strategic importance for the generation of climatic projections of interest for productive planning, planning of adaptation measures, the mitigation of climate impacts and the reduction of risks induced by climate variability. This includes strengthening the early warning systems for floods and waves managed by SINAPROC in the program area. The acquisition, installation, and maintenance of three tide gauges is also contemplated, which will help strengthen the regional network of tide gauges, essential for the generation of climate information (sea level rise, salinity, and others) and strengthen the early warning system for tsunami.

Expected concrete products:

- Improved meteorological stations of the hydrographic basins of the program area to generate complementary agro-climatic and hydrological information.
- Acquired, installed, and connected three sea level gauges to the national and global tsunami monitoring network. Including maintenance and preparation of technical equipment for this maintenance.
- Strengthened Early Warning System for floods, waves, and tsunamis for the Central Pacific sector of Panama.

Technical specifications of the solution:

Improvement of the network of agrometeorological and hydrological stations located in the basins of the program area for the generation of complementary climate information in real time (satellite communication). This includes installation of temperature and humidity sensors, water velocity sensors, sensors for measuring flow, water quality and river levels. The strengthening of the capacity and generation of agro- climatic and hydrological information will be of importance for the planning of productive processes and support for the generation of information for the Early Warning Systems. The installation of three tide gauges will contribute to strengthening the network of national and international tide gauges and the tsunami early warning systems. The acquisition of these tide gauges will be made in accordance with international standards that allow incorporation into international networks, ensuring the quality of the equipment, its installation, maintenance, and training of personnel for data maintenance, processing, and analysis. The Early Warning Systems for floods, waves and tsunamis managed by SINAPROC and the AMP will be strengthened for the benefit of coastal communities and visitors.

Climate change threat:

The variability in seasonal patterns of precipitation causes alteration in the frequency and intensity of rainfall, causing flooding. The rise in sea level and larger waves affect the coastal population, livelihoods and put tourists at risk in the tourism zone of the Dry Arc of Panama.

Clear link between the threat of climate change and the solution:

The strengthening of the network of agro-meteorological and hydrological stations will help reduce or mitigate threats to livelihoods, additionally it will generate key information for the early warning systems of floods with which it will be possible to guide actions to reduce the impacts of floods in risk areas, which includes the lives of residents and their assets. The establishment of tide gauges will help strengthen the national and international tsunami warning network that will allow us to be better prepared to avoid or reduce all types of losses due to tsunami events.

Measures to mitigate environmental risks:

The installation of new agro-meteorological and hydrological equipment is not contemplated, but rather their improvement with the incorporation of new tools and sensors, which reduces environmental risks. The process of installing tools and sensors will be done in coordination with competent entities (IMHPA) considering their protocols and security measures and risks. For the selection of sites for the installation of tide gauges, the sites previously evaluated and determined by the National Tsunami Commission will be validated and protocols of the Intergovernmental Oceanographic Commission (IOC) of UNESCO will be followed to avoid environmental risks for technicians and equipment.

Additional description and context of the activity:

The improvement and establishment of these teams will not only be key to improve the information for Early Warning Systems, but also generate important information for many other actions ranging from support to agricultural planning, to information for the development of studies and flood models and tools to support decision-making.

Solution specifics / details:

- Magnitude / scope: at basin scale (agro-meteorological and hydrological stations), for the coastal sector of the Central Pacific (Network of tide gauges and SAT).
- Location: Watersheds and marine-coastal zone of the Central Pacific.
- Beneficiaries: Communities of the Central Pacific of Panama.
- Objectives: Strengthening the network of agro-meteorological and hydrological stations and tsunamis in Panama and their related Early Warning Systems.
- Inter-institutional coordination: National Civil Protection System (SINAPROC), Panama Maritime Authority (AMP), Tommy Guardia National Geographic Institute, Ministry of the Environment, IMHPA and Institute of Meteorology and Hydrology of Panama (IMPHA).
- Applicable technical standards: See Table 2.35

In Annex 2 find the Product Summary (Table 2.13) and Adaptation resonance (Table 2.14).

2.3 A platform for modeling climate vulnerability and environmental risk has been developed.

The information generated (by 1- the vulnerability analysis studies in the basins of the program area, 2- the sea level increase model for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPCC scenarios, and 3 - other relevant information that includes vulnerability and risk analysis in the program area) will be processed and incorporated into a platform that will allow users to generate information on the levels of vulnerability and risks in the program area. This tool will facilitate the inclusion of climatic considerations in planning, ordering, and environmental management activities. In addition, it will allow considering climate risks in investments of public and private sector programs. This platform will be developed in the program area as a pilot model that could scale at the national level, which will be under evaluation and improvement to guide climate adaptation for the sustainable development of the country. The platform will be hosted on the adaptation portal of the Ministry of the Environment of Panama and will have a protocol to facilitate use by interested users.

Expected concrete products:

- A climate vulnerability and environmental risk modeling platform installed and operating.
- Protocol for the use of the vulnerability and environmental risk modeling platform.

Technical specifications of the solution:

Design and start-up of a platform for modeling vulnerability and environmental and climatic risks for the Central Pacific of Panama that would be hosted on the adaptation platform of the Ministry of the Environment. This platform will be built from the results of the vulnerability studies and sea level rise modeling developed in Result 2.1 of this Component. It will also have a protocol for the management of the information that will be available on the platform and the use or access by different actors. For this, a program will be developed that through the introduction of geographic coordinates or polygons (global positioning points) generate information on vulnerability and environmental and climate risks of value for planning processes, ordering, infrastructure development and investments in particular programs and state.

Climate change threat:
The variability in seasonal patterns of precipitation causes alteration in the frequency and intensity of rains causing flood s and water shortages in the dry season, aggravated during periods of the child with impacts on the health and sanitation of the communities and their livelihoods. Rising sea levels and larger waves cause flooding and coastal erosion that affect the coastal population, their livelihoods and infrastructure.
Clear link between the threat of climate change and the solution:
The tool will allow access to projections of vulnerability and environmental and climatic risks from studies developed and validated that will allow a development with environmental and climatic considerations.
Measures to mitigate environmental risks:
The platform is a tool precisely to mitigate or consider environmental and climate risks in any development initiative.
Additional description and context of the activity:
Capacity must be generated in key actors for the adequate and efficient use of this tool and its application in different processes of planning, ordering, risk analysis of public and private investments, establishment of infrastructure, among other activities. Its continuous evaluation and updating based on new studies that are developed will be important, so it should be a flexible tool with the opportunity to scale at the national level.
Solution specifics / details:

- Magnitude / scope: Central Pacific of Panama.
- Location: Coastal districts of the program area.
- Beneficiaries: Ministry of the Environment, Ministry of Economy and Finance, Ministry of Housing, Municipalities, Banking Sector, Communities and investors.
- Objectives: Free access tool that will allow to consider vulnerability and environmental and climatic risks for decision making.
- Inter-institutional coordination: Ministry of the Environment, Ministry of Economy and Finance, Ministry of Housing, Municipalities.
- Applicable technical standards: See Table 2.35.

In Annex 2 find the Product Summary (Table 2.15) and Adaptation resonance (Table 2.16).

2.4 Developed case studies of cost effectiveness of community projects.

Cost/benefit studies of community projects will be carried out, which will include analysis of their profitability (TIR: Internal Rate of Return and VAN: Net Present Value), also including the social and environmental benefits generated by the adaptation measures and/or good productive practices implemented.
The first year will begin with a cost/benefit analysis of community projects in sustainable livestock farming implemented during the first phase of the Adaptation Fund (Adaptation Program to Climate Change Through Integrated Management of Water Resources in Panama) in the lower basin of the Santa María River and which coincidentally coincide with the study area of this program. The first two cost/benefit studies will be on the production of breeding/milk on the farm of Mr. Cesar Carrión and on the production of milk and its transformation into cheeses on the farm of Mr. Jorge Cedeño, both farms located in the community of El Roble, Aguadulce district, Coclé province.
In subsequent years, a cost/benefit study will be developed for each of the community projects established in activity 1.1 (Strengthening of livelihood management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems) that include: livestock sustainable, climate-smart agriculture, beekeeping, integral gardens with irrigation systems, oyster farming, tilapia farming, community tourism and community fishing. The institution with jurisdiction in this area (MiAMBIENTE, MIDA, ARAP, or ATP) will participate in the monitoring and follow-up of each cost-benefit study.
Expected concrete products:
10 cost-benefit analysis case studies will be developed that will generate information on the profitability of the projects and effectiveness of the adaptation measures implemented, in addition to the experiences generated and lessons learned from these processes.
Technical specifications of the solution:
The program has prioritized the implementation of different adaptation measures based on nature according to the climate information that is managed, strategies and the different development plans of the country. These implemented measures not only contribute to adaptation and mitigation actions against Climate Change but must also prove to be profitable (cost/effective) for producers, which is why the development of case studies that verify their profitability is essential but also its social and environmental impact.

Climate change threat:
Seasonal variations in rainfall, with intense rains in very short periods of time that cause floods and water shortages in the dry season. Sea level rise and higher magnitude waves that cause flooding and coastal erosion.
Clear link between the threat of climate change and the solution:
The implementation of adaptation measures based on nature prioritized according to cost-effectiveness analysis will allow mitigating the climate threats identified for the program area.
Measures to mitigate environmental risks:
Adaptation measures based on selected nature are implemented to generate a greater impact on mitigation of environmental risks.
Additional description and context of the activity:
The cost-effectiveness analyzes will not only help to demonstrate that the adaptation measures implemented in different projects not only generate environmental benefits but can generate greater economic profitability and social benefits if they are implemented properly. The experiences and lessons learned can contribute to strengthening other similar community projects.
Solution specifics / details:

- Magnitude / scope: Coastal districts of the PROGRAM area.
- Location: The districts prioritized are the districts of Chitre, Parita, Aguadulce, Nata, Anton and Chame, districts with the greatest vulnerability to sea level rise (see Map 5)
- Beneficiaries: ~~The~~ The beneficiaries of the cost-benefit studies will be the producers already determined in product 1.1 who already meet the identification and location criteria. ~~Coastal communities with vulnerable populations and high poverty rates where the implementation of solutions based on ecosystems can have a significant impact in addressing climate change and improving their livelihoods~~.
- Objectives: Mitigation of impacts and risks derived from climate variability.
- Inter-institutional coordination: Ministry of the Environment, Ministry of Agricultural Development, Aquatic Resources Authority, Panama Tourism Authority.
- Applicable technical standards: See Table 2.35

In Annex 2 find the Product Summary (Table 2.17) and Adaptation resonance (Table 2.18). Annex 2.1 details the main activities and methodologies by product, considering the associated risks, mitigation measures and those responsible for monitoring.

2.5 Strengthening the Monitoring and Evaluation System for Adaptation to Climate Change.

The implementation of the System for Monitoring and Evaluation of Adaptation to Climate Change is contemplated, a platform that was developed through the Adaptation Fund that includes a set of indicators (21 in total) were selected based on factors that define vulnerability to change. climate (exposure, impacts, sensitivity, and adaptive capacity) which will help to follow up on national adaptation plans and guides in each of the sectors identified in Panama's CDN1. It also includes the evaluation of the achievement of the results and the goals set, as well as recommendations to improve the system in a comprehensive manner, including the improvement of the indicators and the design of monitoring and evaluation protocols. Additionally, the incorporation of new loss and damage indicators and aquiculture with its monitoring and evaluation protocols at a local level.
Expected concrete products:

- Analysis of the implementation of the Monitoring and Evaluation System for Adaptation to climate change with evaluation of the results and goals set and with recommendations for improving the indicators and monitoring and evaluation protocols.

Technical specifications of the solution:
Implementation of the Monitoring and Evaluation System for Adaptation to climate change that includes a set of 21 indicators selected based on factors that define vulnerability to climate change (exposure, impacts, sensitivity, and adaptive capacity). The implementation of this system will allow the monitoring of progress and compliance with the national adaptation plans and guides in each of the sectors identified in the CDN1 of Panama. This process will help improve monitoring and evaluation protocols for the defined indicators and / or improve them.
Climate change threat:
Seasonal variations in rainfall, with intense rains in very short periods of time that cause floods, putting the safety of communities and their livelihoods at risk. Water shortage in the dry season that increases during periods of El Niño that affect productive activities such as agriculture and livestock. Sea level rise and waves of greater magnitude that cause flooding affecting communities and their livelihoods and coastal erosion that affects infrastructure and

ecosystems.

Clear link between the threat of climate change and the solution:

It allows evaluating the progress in the implementation of strategies and plans for adaptation to climate change and generating recommendations for the more effective management of the country's adaptation actions and investments.

Measures to mitigate environmental risks:

Take into consideration climate information, predictions, and warnings from Early Warning Systems during the field activities of evaluation and monitoring of indicators.

Additional description and context of the activity:

The Implementation of the System for Monitoring and Evaluation of Adaptation to climate change will make it possible to test the tool and generate recommendations for its improvement and scaling up at the national level.

Solution specifics / details:

- Magnitude / scope: At the municipal level, scalable at the national level.
- Location: Coastal municipalities in the program area.
- Beneficiaries: Communities and their livelihoods, government institutions that develop strategies and plans for adaptation to climate change.
- Objectives: Evaluate the Monitoring and Evaluation System for Adaptation to climate change and generate recommendations for its improvement and national scaling.
- Inter-institutional coordination: Ministry of the Environment, Ministry of Agricultural Development, Fisheries Resources Authority, Ministry of Housing, Panama Maritime Authority, Municipalities.
- Applicable technical standards: See Table 2.35

In Annex 2 find the Product Summary (Table 2.19) and Adaptation resonance (Table 2.20).

Component 3. Improve the capacity of key stakeholders and generate knowledge on climate adaptation and resilience at the local and national level.

Budget: US $ 1,516,977

Component three will be oriented to the development of capacities of key actors for understanding and understanding about climate change in general and adaptation based on ecosystems with a gender perspective. A gender equality participation plan will be developed, and, in addition, the capacities of these actors will be strengthened in the knowledge of national policies and plans to face global climate change and their implementation at the local level. A process will be developed to strengthen the capacities of CBOs and municipalities so that they can prepare, implement, monitor and evaluate adaptation proposals with a community approach that allows them to develop adaptation actions and strengthen their climate resilience in their communities and livelihoods. The establishment of inter-municipal agreements for the development of pilot adaptation programs will be promoted, considering that (i) climatic effects and adaptation action s go beyond geographical limits and (ii) the existence of key ecosystems -such as mangroves- that they are shared between municipalities. It also includes the development of a knowledge management program that includes the communication of the progress and results of the program, the systematization of experiences and lessons learned, the promotion of exchanges at different levels, the dissemination of results and the strengthening of the portal of adaptation established during the development of the country's first adaptation program as a key tool for communication, dissemination, training and installation of the climate vulnerability and risk modeling platform.

3.1 Strengthened the capacities of key actors on Climate Change and adaptation based on ecosystems and successful experiences implemented.

A training program for actors on climate change and ecosystem-based adaptation will be developed, including information on successful experiences implemented in Panama and in other parts of the world. This program will include the design of a training plan and the development of modules that will cover different topics related to climate change, adaptation based on ecosystems, national policies and plans to face the effects of climate change, successful experiences, among other topics. The training modules and contents will be validated with the Ministry of the Environment of Panama and must contemplate the option of digital training through the adaptation platform of the Ministry of Environment, and local training that must be developed in the communities contemplating security measures of the Ministry of Health and the World Health Organization (WHO) to prevent COVID-19 and its variants.

The process will contain participant evaluation systems and final evaluation of the implementation of each module. The goal is to train at least 500 key actors in the area of program implementation.

Expected concrete products:

- Actors training plan on climate change and adaptation based on ecosystems.
- Design of training modules with content validated by the Ministry of the Environment.
- Evaluation reports of each training process developed.

Technical specifications of the solution:

Strengthening the capacity of actors on knowledge of climate change and adaptation based on ecosystems through the elaboration and implementation of a training plan for identified key actors. Training modules will be developed, and strategies will be developed through digital media and networks, as well as face-to-face, following the security protocols of the Ministry of Health and WHO in the face of the COVID-19 pandemic. Evaluation processes of each process are included to have feedback applied to the improvement of the training process.

Climate change threat:

Seasonal variations in rainfall, with intense rains in very short periods of time causing flooding, runoff and sedimentation. Water shortage in dry season aggravated by periods of El Niño with increased water stress and water availability for communities, livelihood s, and ecosystems. Sea level rise and higher magnitude waves that cause flooding and coastal erosion.

Clear link between the threat of climate change and the solution:

Strengthening the capacities of key actors is strategic so that key actors understand and can make informed decisions. The local capacities generated will allow adaptation actions to have a greater impact in the field and a commitment to their sustainability.

Measures to mitigate environmental risks:

Environmental risk measures will be considered for any face-to-face training process, as well as the measures and protocols of the Ministry of Health and WHO to prevent the spread or contagion of COVID-19.

Additional description and context of the activity:

The adaptation platform hosted by the Ministry of the Environment will be used as a means of hosting and facilitating access to users of the training modules that are developed, as well as their evaluation. This strategy will allow access to many other actors to strengthen their capacities on issues related to climate change and adaptation.

Solution specifics / details:

- Magnitude / scope: Key actor of coastal districts in the program area
- Location: MiAmbiente Adaptation Platform with access to key stakeholders from coastal districts.
- Beneficiaries: Communities, local authorities, institutional officials, businessmen from different sectors, among others.
- Objectives: Strengthen capacities to improve knowledge of climate change and nature-based adaptation.
- Inter-institutional coordination: Ministry of the Environment with other key actors such as: Ministry of Agricultural Development, Aquatic Resources Authority, Tourism Authority of Panama, Ministry of Housing and Territorial Planning (MIVIOT), local authorities, Community, Cooperatives, Associations.
- Applicable technical standards: See Table 2.35

In Annex 2 find the Product Summary (Table 2.21) and Adaptation resonance (Table 2.22).

3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities.

An action plan will be prepared for the integration of the gender perspective into the project, which must be aligned with the National Gender and Climate Change Plan of Panama and the gender policy and the gender action plan of the Adaptation Fund and considering the Gender orientation document for executing entities on compliance with the gender policy of the Adaptation Fund updated to 2022. A gender specialist will be hired who will be in charge of preparing the gender integration action plan in a widely participatory manner and its implementation. As a transversal strategy, this plan must be integrated into the implementation of the project's components and activities.

Expected concrete products:

- Action Plan for the integration of the gender perspective into the project.
- Implementation reports and memories of training workshops

Technical specifications of the solution:

The preparation of the Action Plan for the integration of the gender perspective will be based on surveys and interviews with interested parties from the coastal districts of the project area and considering national gender

strategies and plans and determining the opportunities for participation in the benefits, capacity building and decision-making that the project will promote. The project contemplates the hiring of a gender specialist who will facilitate the process of preparation and implementation of the gender action plan and its evaluation. This plan must contain indicators aligned with the project and the national gender and climate change plan of Panama.

Climate change threat:

Water scarcity in the dry season aggravated by El Niño periods with increased water stress and availability of water for comm unities, livelihoods, and ecosystems. Rise in sea level and larger waves that cause flooding and coastal erosion.

Clear link between climate change threat and solution:

The action plan with a gender perspective must be comprehensive and aligned with the action plan for gen der and climate change in Panama, so that it guarantees not only the inclusion of gender in benefits, training, and project activities, but also strengthens the local capacity of the most vulnerable groups to improve their adaptation and resilience to climate change.

Measures to mitigate environmental risks:

Environmental risk measures will be considered for any face-to-face consultation and training process. The measures and protocols of the Ministry of Health and WHO will be considered to prevent the spread or contagion of COVID-19.

Additional description and context of the activity:

The action plan from the gender perspective will offer one of the first opportunities to align the project's gender actions with the new gender and climate change action plan of Panama. The process must generate experiences and lessons learned that must be documented, systematized, and shared.

Solution specifics / details:

- Magnitude / Scope: Stakeholders from coastal districts in the program area
- Location: Coastal districts of the project area.
- Beneficiaries: Communities, their livelihoods, CBOs and municipalities in the program's intervention area.
- Objectives: Integration of the gender perspective in the implementation of the project.
- Inter-institutional coordination: Ministry of the Environment with other key actors such as: Ministry of Agricultural Development, Authority of Aquatic Resources, Tourism Authority of Panama, local Authorities, Community, Cooperatives and Associations.
- Applicable technical standards: See Table 2.35

In Annex 2 find the Product Summary (Table 2.23) and Adaptation resonance (Table 2.24).

3.3 Strengthened capacities of Community Based Organizations and Municipalities on climate change, nature-based adaptation and comprehensive program management

A special group of stakeholders from CBOs and municipalities will be established to develop a capacity-building process on climate change, ecosystem-based adaptation, and on the implementation of adaptation policies and plans at the local scale. This process will be the basis for the development of another second-level training process, which will allow the development of capacities for the comprehensive management of adaptation programs. For this, special modules will be designed to train these actors in program management, but also work will be done on the preparation of small adaptation proposals for the communities and municipalities. The training processes will include evaluation actions of the participants and final evaluation of the process. It will also promote the establishment of inter-municipal agreements for the development of joint adaptation actions and improvement of climate resilience, recognizing that adaptation actions do not have geographic limits and that high-value ecosystems such as mangroves are shared among municipalities.

Expected concrete products:

- Special modules designed and implemented for the implementation of adaptation strategies and plans at the local level and the management of projects for 200 beneficiaries.
- Evaluation of capacity building processes.
- At least 15 proposals for adaptation projects of CBOs and municipalities prepared.
- Inter-municipal agreements established for the development of joint adaptation actions.

Technical specifications of the solution:

The Community-Based Organizations (CBOs) and Municipalities will constitute a special group in the process of

capacity-building on issues of climate change and ecosystem-based adaptation (Result 3.1 of this component). These will be developed additional modules on policies and strategic plans for adaptation and their implementation at the local level and comprehensive program management. Special workshops will be developed, following security measures against COVID-19, for the preparation of an adaptation proposal for their communities, livelihoods and / or municipal interest. The establishment of agreements between municipalities will be promoted as a strategy for the development of adaptation programs of greater scop e and in order to eliminate the barriers of political limits of the local vision.

Climate change threat:

Seasonal variations in rainfall, with intense rains in very short periods of time causing flooding, runoff, and sedimentation. Water shortage in dry season aggravated by periods of El Niño with increased water stress and water availability for communities, livelihoods, and ecosystems. Sea level rise and larger waves that cause flooding and coastal erosion.

Clear link between the threat of climate change and the solution:

Strengthening the capacities of key actors is strategic so that they not only understand the dimensions of climate change and the adaptation measures that can be developed, but also how to implement adaptation policies and plans at the local level through program management.

Measures to mitigate environmental risks:

Environmental risk measures will be considered for any face-to-face training process and as a variable to be considered in the preparation of proposals for programs. The measures and protocols of the Ministry of Health and WHO will be considered to prevent the spread or contagion of COVID-19.

Additional description and context of the activity:

The development of this capacity-building process for CBOs and Municipalities will set a precedent that will open opportunities from other sources so that organized groups and municipalities with installed capacities can generate programs for the benefit of communities and their livelihoods. The process must generate experiences and lessons learned that must be documented, systematized, and shared.

Solution specifics / details:

- Magnitude / scope: Key actor of coastal districts in the program area
- Location: MiAmbiente Adaptation Platform with access to OBC and Municipal staff. The districts prioritized are the districts of Chitre, Parita, Aguadulce, Nata, Anton and Chame, districts with the greatest vulnerability to sea level rise (see Map 5)
- Beneficiaries: Communities, their livelihoods and the municipalities in the program's intervention area.
- Objectives: Strengthen local capacities for the management of adaptation programs with a local perspective.
- Inter-institutional coordination: Ministry of the Environment with other key actors such as: Ministry of Agricultural Development, Water Resources Authority, Tourism Authority of Panama, local authorities, Community, Cooperatives and Associations.
- Applicable technical standards: See Table 2.35.

In Annex 2 find the Product Summary (Table 2.25) and Adaptation resonance (Table 2.26).

3.4 Escalation of knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program for systematizing experiences, lessons learned and their appropriation.

It includes the development of a comprehensive knowledge management program with the communication of the progress in the implementation of the program, the communication of results and activities developed by the program. This program will contain goals and indicators that will make it possible to evaluate the fulfillment and scope of the communication actions carried out by the program. This comprehensive knowledge management program should also identify and systematize the most relevant experiences and lessons learned that the program would develop; It should include the identification and programming of opportunities for the exchange of experiences of actors at different levels, including knowledge of successful experiences implemented in Panama and in other parts of the world. This program will also create spaces for the dissemination of results and that the program can share experiences and lessons learned during its execution. It includes the hiring of a communications specialist in charge of directing and facilitating all communication activities through the various media, communicating the results and progress of the project and their experiences and lessons learned. The adaptation platform will be strengthened

as a key means for communicating progress, results and experiences generated by the program; in addition to serving to promote the strengthening of actors' capacities through virtual modules. Additionally, this adaptation platform must host and allow access to the climate risk and vulnerability modeling platform.

Expected concrete products:

- Comprehensive knowledge management program designed and in operation with established goals and indicators that facilitate its evaluation.
- Adaptation Platform established in the Ministry of Environment strengthened and operational.
- Systematization of experiences and lessons learned from programs carried out in the program.

Technical specifications of the solution:

It includes the development and implementation of a program with goals and indicators for the evaluation of its fulfillment that allows the integral management of the knowledge generated by the program to be executed, which includes the communication actions of progress, results and activities developed by the program. It must integrate the adaptation platform to facilitate training actions, dissemination of experiences and lessons learned, and facilitate access to tools such as a platform for modeling vulnerability and environmental and climate risks.

Climate change threat:

Seasonal variations in rainfall, with intense rains in very short periods of time causing flooding, runoff, and sedimentation. Water shortage in dry season aggravated by periods of El Niño with increased water stress and water availability for communities, livelihoods, and ecosystems. Sea level rise and higher magnitude waves that cause flooding and coastal erosion.

Clear link between the threat of climate change and the solution:

Comprehensive knowledge management is a key action that allows access to information, experiences, lessons learned, training and awareness regarding the climate issue and nature-based solutions.

Measures to mitigate environmental risks:

Environmental risk measures will be considered for any face-to-face process of systematizing experiences or knowledge-sharing sessions, as well as the measures and protocols of the Ministry of Health and WHO to prevent the spread or contagion of COVID.

Additional description and context of the activity:

Knowledge management is a key tool to generate a greater impact on the fulfillment of the objectives and goals of the program.

Solution specifics / details:

- Magnitude / scope: Key Actors of the program and national and international actors interested in issues of adaptation to climate change.
- Location: Ministry of the Environment, the adaptation platform and, at the local level, the opportunities for systematization, exchange, and dissemination.
- Beneficiaries: Communities, local authorities, institutional officials, entrepreneurs from different sectors, associations, cooperatives, among others.
- Objectives: Strengthen capacities to improve knowledge of climate change and nature-based adaptation and facilitate the dissemination of knowledge, lessons and experiences of the implementation of the program.
- Inter-institutional coordination: Natura and the Ministry of the Environment with other key actors such as: Ministry of Agricultura l Development, Water Resources Authority, Tourism Authority of Panama, Ministry of Housing, local authorities, Community, Cooperatives, Associations.
- Applicable technical standards: See Table 2.35.

In Annex 2 find the Product Summary (Table 2.27) and Adaptation resonance (Table 2.28).

3.5 Ensured the communication actions of the program that provide information to its stakeholders.

This includes the preparation and implementation of a communication plan for the program that facilitates the dissemination to stakeholders and the general public of the calls, training opportunities, awareness and education campaigns, lessons learned, experiences and results of the program through different media outlets and established platforms, as well as social networks. It also includes the hiring of a specialist communication consultant to lead and facilitate the implementation of the communication plan and its synergy with the knowledge management strategy and the action plan for the integration of the gender perspective.

Expected concrete products:

- Program communications plan
- Reports of the Implementation of communication actions of the program and media and social media monitoring report

Technical specifications of the solution:
The communication plan must consider its integration and complementarity to the knowledge management strategy and the integration plan of the gender perspective of the project. It must establish goals, indicators and means of verification so that the largest number of stakeholders and target public can be informed of the different actions carried out by the program, including lessons learned, awareness and education actions, experiences, results and opportunities to participate as beneficiaries.

Climate change threat:
Seasonal variations in rainfall, with intense rains in very short periods of time causing flooding, runoff, and sedimentation.

Clear link between the threat of climate change and the solution:
Comprehensive knowledge management is a key action that allows access to information, experiences, lessons learned, training and awareness regarding the climate issue and nature-based solutions.
Measures to mitigate environmental risks:
Environmental risk measures will be considered for any face-to-face process of systematizing experiences or knowledge-sharing sessions, as well as the measures and protocols of the Ministry of Health and WHO to prevent the spread or contagion of COVID.

Additional description and context of the activity:
Knowledge management is a key tool to generate a greater impact on the fulfillment of the objectives and goals of the program.

Solution specifics / details:
- Magnitude / scope: stakeholders of the program and national and local actors.
- Location: Program area.
- Beneficiaries: Communities, local authorities, institutional officials, entrepreneurs from different sectors, associations, cooperatives, among others.
- Objectives: Ensured the communication actions of the program that provide information to its stakeholders.
- Inter-institutional coordination: Natura and the Ministry of the Environment with other key actors such as: Ministry of Agricultura l Development, Water Resources Authority, Tourism Authority of Panama, Ministry of Housing, local authorities, Community, Cooperatives, Associations.
- Applicable technical standards: N/A

A2. Contribution of the program to the overall increase in resiliencecapacity, compared to stand-alone individual projects.

The proposed adaptation program has taken into consideration some aspects to promote the increase of resilience in a more effective way compared to independent individual projects, which is the usual practice.

a) The main strategy of the proposed program is the comprehensive approach, contrary to the sectoral approach that is traditional practice. The reasoning behind the program assumes that adaptation is a complex process that cannot be approached successfully from a sectoral or fragmented perspective. The proposed program addresses the complexity of the visible and expected effect s of climate change in the social, environmental, and economic spheres in an area of Panama with high vulnerability, a Pacific coastal strip. The use of the integral, interrelated, and connected approach between the components will help to address and understand (to actuate and replicate) the complex and dynamic interrelationships between sustainable livelihoods; use and protection of high value ecosystems; knowledge and tools for decision making for adaptation. The approach allows efficient and effective use of limited resources to manage the adaptation of a priority climate region for the country, while generating experience and know-how that can be replicated in other areas. In this way, the proposed program has been designed so that, during its execution, the relationship between the components and how the interventions of one sector affect the others become more evident, creating synergies and better results. For example, the sea level rise model for the Central Pacific of Panama is a vital element to take into consideration in land use

planning interventions, in municipal strategic investment planning, in water resources management and in diversification of sustainable livelihoods. These interventions, otherwise, would be approached from a sectoral point of view, for example, by the Ministry of Housing and Territorial Planning, local authorities (municipalities), the Panama Aquatic Services Authority, the Ministry of the Environment, and others.

b) Another means to promote increased resilience derived from the comprehensive approach is that the program has been conceived in such a way that it intends to include actions in: i) evidence, promoting the generation of reliable climate data and scena rios; (ii) the application of adaptation measures and increased resilience of livelihoods on the ground; and iii) local and national capacity building options for adaptation and resilience.

c) Another difference with traditional projects is that the program presents a combination of adaptation activities on the ground and actions to inform and influence decision-making processes in the sectors involved (i.e.: sea level rise model for the Central Pacific of Panama that identifies the areas of greatest vulnerability; environmental land use planning plans and municipal strategic plans that consider strengthening climate resilience, inter-municipal agreements for joint adaptation actions, and an effective and functioning protocol to monitor and evaluate progress of the interventions). Stand-alone projects that do not apply an integrated approach often focus on implementation (generation of evidence, for example through pilot projects) or on policy processes that foster technical or policy dialogue without specific activities on the ground.

d) Finally, the components of the program have been designed in such a way that the components are connected, since the results of one component serve as inputs for products of other components. For example, the resulting technical data from 2.1 will serve as input for 2.4.

B. Describe how the project / program provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / program will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of theAdaptation Fund

B1. Expected economic, social and environmental benefits from the Program.

The combined effect of various program activities will result in direct and indirect tangible economic benefits for local communities in the Central Pacific - Arco Seco climate region. The expected benefits of the implementation of the program, from the social-economic- environmental perspectives (stipulated by the AF Environmental and Social Policy, and the AF Gender Policy) are shown in Annex 4

B2. Process for the selection of beneficiaries

The final selection of beneficiaries is part of the implementation of the program. The description and justification of the specific targeting methodology will form part of the terms of reference for each proposed activity, taking into consideration the provisions of the Social and Environmental Policy and the Gender Policy of the Adaptation Fund. However, the general facts / conditions to be considered are presented in Annex 5.

It is valid to note that:

- In the proposed program area, there are no settlements or indigenous populations or other minorities that inhabit either permanently or sporadically.
- In the design of terms of reference for each specific expected product, it will be taken into consideration that the actions to be developed will not increase the vulnerability of the beneficiaries or non-beneficiaries, nor will they reduce their capacity to adapt to climate change. In addition, to design each term of reference, an analysis of the different needs, capacities, roles and knowledge resources of women and men will be carried out.
- Indicators that measure and provide evidence of gender equity in the beneficiaries of each intervention will be included.
- A requirement will be included for the final reports of each intervention to offer a balance of the impact of the equity measure on its success and expected sustainability, beyond the end of the AF financing.

B3. Equal access and distribution of the adaptation benefits among beneficiaries

The program is sensitive to gender equity (promoting equal opportunities) and equal benefits, by recognizing the different situations of women and men, and developing strategies to ensure that both sexes can benefit from the adaptation experience and results. For purposes of the Program, Equality refers to ensuring project resources,

activities and opportunities are equally available to women and men and treating both sexes in the same way. Equity refers to the process of treating women and men fairly so that the project generates similar benefits. To achieve this the key will be to find out the gender-based barriers to full participation for each specific group of women and men.

The program strategy to do this and overcome the barriers for each group includes the development of indicators that will help measure how effectively each project is addressing the different needs, interests and resources of both women and men (as beneficiaries, workers and citizens). The following criteria and principles will be observed to ensure an equitable distribution of the adaptation benefits among beneficiaries:

1. Facilitating participation of individuals/families whose land rights are not clear, through collaborative agreements or similar contract figures.
2. Working with both men and women is essential to the process. This involves supporting continued dialogue—at both household and community levels—about the roles of women in supporting agricultural innovation, while working to reduce structural deficits (access to resources) and encouraging more male support.
3. Free, prior and informed consent (FPIC) approach, when inviting individuals/families to participate in AP activities.
4. Co-design of the adaptation measures among the project implementers and the communities
5. Distributing AP activities across the different sections of the territory, to the extent possible, depending on the technical requirements of each one.
6. Establish coordination with conditional cash transfers programs (CCTs) to identify specific cases of socio -economic and climate vulnerability.
7. Encourage participation of community organizations (cooperatives, associations, other), without limiting participation of non-associated individuals or families.

Through the different components of the adaptation program, a series of gender-sensitive measures have been proposed, particularly in:

- For all components: ToR for each subproject will require the inclusion of social and gender experts as part of the project staff, whenever pertinent.
- Regarding the installation of apiaries, the cultivation of oysters, the integral house gardens with water harvest and drip irrigation, and tilapia cultivation, will be given preference to households headed by women. This will require information disaggregated by gender that will be obtained through local instances and will be checked with the available statistical information.
- In materials for different audiences (farmers, institutions, academia, etc.) on adaptation to climate change (as part of the process of generating knowledge products), it will contain a specific material to address the vulnerability of women, measures taken to overcome this and examples of the adaptation program that could be replicated by other projects.
- Trainings will include a gender awareness section to ensure the understanding of specific gender issues of the project.
- Affirmative actions will be carried out to promote the participation of women in the implementation of a gender perspective, as well as the participation of young people.

B4. Complaints Handling Mechanism

To ensure that the Program maintains an open and permanent communication channel with beneficiaries and community stakeholders, Fundacion Natura will put in place a Complaints Handling Mechanism as a critical tool for promoting adaptation program transparency and accountability. According to the World Bank proposed methodology to design and operate these mechanisms, it will ensure, at least, the following dimensions:

- A complaint handling committee integrated by representatives from all municipalities in the program.
- The members of the committees will be given the authority to take or demand remedial action.
- The members of the committee will not necessarily be obliged to act on all complaints. Indicative lists of situations and exceptions will be developed.

- The mechanism will define measures to ensure that project-affected people feel that they can file complaints without fear of retaliation.
- Inform project beneficiaries of their right to file a complaint and about the complaints handling process in general.
- The mechanism will put in place an internal process to record, track and monitor the action taken on complaints.
- The mechanism should provide timely feedback (written or otherwise) to the petitioner on actions taken.

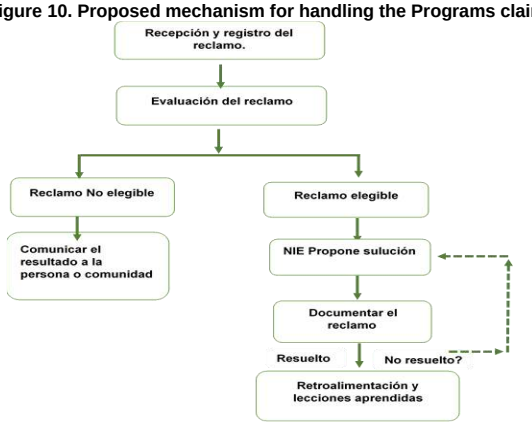
The proposed mechanism will serve as a tool for the NIE to evaluate and resolve the complaints of the communities in relation to the design and implementation of program activities. In the event that the claimants are not satisfied with the management or solution of complaints, a Special Committee of the Natura Foundation Board will serve as appeal instance. NIE and executors must provide information to communities on a regular basis, to clarify expectations about what the mechanism may or may not do; encourage people to use it; submit the results and gather information to improve system claims.
The following indicative criteria will be used to determine the admissible claims that will be included in the claim mechanism.

Table 2.31. Criteria for determining the admissible claims that will be included in the claim mechanism.

Eligible	Non-Eligible
The claim is related to the Program. The issues raised in the complaint fall within the issues that the grievance mechanism is authorized to serve. The claimant is positioned to present it.	The claim is not clearly related to the program. The nature of the complaint is outside the mandate of the grievance mechanism. The claimant is not positioned to present. Other procedures are more appropriate to address the claim.

If the claim is rejected, the claimant is informed of the decision and the reasons for rejection.
Examples of form used by Natura Foundation for complaints of environmental and social safeguards are included in Annex 6.

Figure 10. Proposed mechanism for handling the Programs claims.



C. Describe or provide an analysis of the cost-effectiveness of the proposed project / program

C1. Data on cost-effectiveness of the Program

Although there is no case study of cost-effectiveness analysis for all types of community productive projects, an effort has been made to generate some cost-effectiveness analyzes based on economic information managed by the implementing entities related to each of these projects. Additionally, recognizing this weakness, the program contemplates the development of 10 case studies of cost/effectiveness analysis for the different productive projects in order to generate financial information that allows demonstrating the profitability or not of these productive projects.:

The implementation of this program is highly significant and profitable because it is aimed at serving coastal communities that are highly vulnerable to the effects of Climate Change where initiatives and programs, as well as adaptation plans and policies, have had very limited implementation. In order to achieve an efficient and profitable management of the program (cost-effectiveness), it is proposed to strengthen the capacities of the beneficiaries to promote diversification and the incorporation of adaptation measures based on ecosystems in their communities and livelihoods. This will make it possible to improve their food security and at the same time generate better economic and environmental benefits through the incorporation of good productive practices that will contribute to reducing vulnerability and improving productivity.

The incorporation of efficient and low-cost technologies will be tools that will help improve productivity and ensure their resilience before climatic variability, increasing the profitability of productive systems that are depressed today. The strengthening of value chains, marketing and commercialization will be the other tools that will allow products and services to be connected with more responsible markets. In this sense, the program will also promote consumer education to strengthen responsible markets.

The project contemplates improving the management of water resources in vulnerable coastal communities with the incorporation of efficient and low-cost technology and creating local capacities. Additionally, the reduction of pressure and recovery of high-value ecosystems will help reduce climate risks (floods, coastal erosion due to sea level rise) and will allow the continued generation of ecosystem services to these coastal communities in the long term. The implementation of the program will have a high impact and high relevance, since it will be developed in a region vulnerable to climate change (Arco Seco de Panama) and the beneficiaries are located in communities with high poverty rates and in the most vulnerable districts to sea level rise (Map 5).

The project is also highly profitable since it will generate tools and strategies that will allow new state investments to be more effective when considering risks and climate vulnerability scenarios and that will guide decision-making for community, municipal, and provincial development with climate considerations. The strengthening of Early Warning Systems (floods/tsunamis) will be key to risk management in the face of high-impact events (tropical storms, tsunamis) that can cause considerable damage to communities, their infrastructure, livelihoods, and cause loss of property life. The project investments will be highly profitable since they will also be directed to the formation of human capital of multiple actors through the implementation of the knowledge management strategy and the communication, education and awareness plan of strategic partners that will generate capacities beyond of the project so that these actors can apply techniques and tools that allow them to adapt to the effects of climate change.

The program will be developed in coastal communities highly dependent on natural resources, so through diversification and ecosystem-based solutions it is proposed to recognize and take advantage of the ecosystem goods and services in the program's intervention area in a more sustainable way, download production costs, reduce damage and losses from extreme weather events and strengthen value chains with gender integration, especially for women and young people under 21 with high unemployment rates. The program will generate an impact on beneficiaries without access or with very limited access to climate financing, a situation aggravated by the economic and social impacts derived from the COVID-19 pandemic in the country. The Program will make it possible to make strategic investments for the diversification of production and the adaptation of their livelihoods to the effects of climate change, and with this, a significant change in productivity and the economic and social benefits of these vulnerable families will be promoted.

The gender focus of the program will seek to promote the inclusion and participation of women and

youth as beneficiaries and key actors for decision-making. The gender approach will help to strengthen the capacity of women, but at the same time improve the sensitivity of other actors regarding the gender perspective, also contributing to reduce the gap between women and men. The development of value chains with products of greater potential will allow the gender inclusion (women and young people) in the productive process, incorporating benefits, which is key to family well-being and capacity generation in the local population. In this sense, the cost-effectiveness of these investments is given in creating capacity in vulnerable groups and their incorporation into productive processes at a time when health crisis has increased unemployment in Panama. It will foster greater involvement of women and young people who do not count with enough experience to join the active workforce and the limited employment opportunities that exist today in the country. This approach will create a scale economy which is key and strategic for the program, since it promotes the main objective of this initiative that is to promote the generation of capacities and exchanges for the adaptation and resilience of the livelihoods of vulnerable coastal communities, allowing the incorporation from the gender perspective in productive processes and benefits.

The project will promote sustainable livestock through the development and implementation of farm management plans to transform farms from traditional livestock to Silvopastoral Systems (SSP), which is highly profitable. Studies show that meat production in a SSP increases up to 200 kg34 per head of cattle in one year, which at the market price (US$ 2.37) would mean a profitability of US$ 474.00 per animal, this considering the price in the Panama Livestock Auction for the week of July 17 to 21 for a beef steer (Meat)35. If we also consider that the number of animals per ha. in a traditional farm it is approximately 1 animal or less and that the stocking rate in a Silvopastoral System is at least 2 and up to 3 animals per ha. depending on the rotation (management), pasture quality and farm productivity, the yield can be raised from US$ 948.00 up to US$ 1,422.00 per ha/per year. On the other hand, various studies show that the shade and the presence of fodder trees of a SSP contribute to an increase in milk production between 12 and 15% and the reproductive rate of cows by 20%, in addition to reducing services veterinarians by 50%36, which substantially improves the profitability of a cattle farm.

The investment of the project in beekeeping is highly profitable through the installation of at least 4 apiaries and about 12 hives. The production of honey is highly profitable, since the cost of a hive is approximately US$ 200.00, and its annual production of honey is approximately 5 gallons per hive. Considering the value of honey in the national market, the producer can generate a benefit that can be between US$55.00 and US$60.0037 for each gallon of honey. The total amount of production of each apiary will depend on the number of hives managed by each producer and on factors such as the flowering of plant species in the radius of the hive and the number and health of the bees that make up the hive38.

On the other hand, the project will also promote highly profitable activities such as the establishment of comprehensive agroecological orchards, which, in addition to facilitating the integration of women, can be developed at low investment costs and produce short-term benefits, as well as being key to food security. family. An economic-financial analysis of urban orchards in Ecuador for four crops (Tomato, lettuce, onion, and coriander) shows that with little investment (US$65.00 for 5 m2 of crops) and considering production costs of US$156.10, US$185.00 can be generated. in income in just two production cycles. It is estimated that 20% of the family diet can be covered with the production of this garden. The five-year projection of the Net Present Value (NPV) showed a result of $39.32 and the Internal Rate of Return (IRR) of 34% and the Benefit/Cost Ratio R B/C of 0.19 demonstrates that the implementation of urban gardens as an economic activity turns out to be positive39. These values can be doubled if there are 4 production cycles per year supported by water harvesting systems and efficient irrigation at low cost as contemplated in the project.

The aquaculture sector also presents business opportunities at the community level, although the

[34] https://www.camjol.info/index.php/CEIBA/article/view/2774
[35] 21072023.pdf - Google Drive
[36] Incremento-de-los-Sistemas-Silvopastoriles-en-America-del-Sur.pdf
[37] https://www.metrolibre.com/economia/panama-produce-60000-galones-de-miel-de-abeja-anuales-LC4400915
[38] La producción de miel en la colmena. - MAES HONEY.
[39] (PDF) ANÁLISIS ECONOMICO-FINANCIERO Y DE SENSIBILIDAD DE HUERTOS 2022 07 20 (researchgate.net)

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investment is high for some beneficiaries, it can be an alternative for productive diversification for fishing associations as shown in Table 2.3.2.

Table. 2.3.2 Summary of cost-effectiveness analysis of community projects

Implementing Entity	Project	IRR (Internal Rate of Return)	NVP (Net Present Value)	Profitability
ARAP	Oyster Farming	35.1343.04%	5.5261%	46.555.7%.
ARAP	Tilapia Farming	235.147%	- 4.5718%	19.7%
ARAP	Community fishing	35.34%	1.43%	19.7%

The project will promote four experiences in oyster farming with fishing associations in vulnerable districts. With an investment of US$55,000, approximately 4,374 dozen oysters can be produced per year at a value of US$10.00 per dozen. The financial analysis shows for a 10-year projection an Internal Rate of Return (IRR) of 43.0435.13%, a net present value of 5.5261% and a profitability of 5546.57% (see annex 7.1), which is highly cost/efficient for these fishing associations as it allows them to diversify and complement their income from community fishing that faces serious profitability problems due to the high costs of fuel and the shortage of fishing products.

The project will also invest in short-term profitable activities such as aquaculture, promoting tilapia farming (12 modules) as an adaptation measure through productive diversification and gender integration. The investment cost of the culture tank is US$ 3,000.00 with a size of approximately 30-38 m3 of water and where you can have about 2,000 tilapia individuals. If we consider the cost of feed for a cycle estimated at US$1,000.00, this generates a total of US$4,000 of initial investment. It is estimated that there can be 3 harvests a year (every 3 to 4 months) producing approximately 600 pounds for each harvest and considering the market price of US$2.50 per pound of tilapia, this activity could generate approximately US$4,500.00 per year in income. if it is well managed, which is highly profitable since the investment is recovered and profits can be generated up to the first year. The financial analysis of tilapia cultivation for production through 4 ponds with the use of geomembranes shows that with an investment of US$30,000 and a 10-year projection, producing about 1975 pounds of tilapia in 3 production cycles per year. There is an Internal Rate of Return (IRR) of 5.123.17%, a Net Present Value (NPV) of -4.5718% and a profitability of 19.7% (Annex 7.2).

Community fishing is an unprofitable but extremely key activity for the food security and income generation of many coastal communities in the program area that live in general poverty. The program will promote the development of 10 community fishing programs with a sustainable fishing approach, incorporating good fishing practices, capacity building and the use of technology. The financial analysis shows that with an investment of US$ 35,000 you can have an Internal Rate of Return (IRR) of 35.34%, a Net Present Value (NPV) of 1.43% and a profitability of 36.1% with a projection of 10 years (see Annex 7.3), making community fishing activity more profitable.

The project will work on improving the management of 5 rural aqueducts and 18 multipurpose water collection systems. This will be key to improving the quality of life and reducing the incidence of diseases linked to deficient water supply services, but it will also help women to reduce the time spent collecting and mobilizing water for their homes. It is estimated that this task, which falls mainly on women, consumes up to 2 hours a day, which reduces their time to dedicate themselves to productive activities.

In the case of project investments in the recovery of high-value ecosystems, the cost-effectiveness analysis of conservation and recovery of mangrove areas against IPCC scenarios show that these investments are highly profitable. The study carried out by UNDP in the Western Pacific of Panama40, recommends that it is more profitable to invest today in improvement or restoration of green infrastructure, to mitigate impacts on communities and their livelihoods; investments in gray and green infrastructure to contain or mitigate the impacts of, for example, sea level rise on communities (their infrastructure and livelihoods) in the future. In addition, investments in recovery (reforestation,

[40] PNUD. 2018. Impacto económico del aumento del nivel de mar, sobre la franja costera de los Distritos de San Lorenzo, San Félix y Remedios. Proyecto Protección de Sumideros y Reservas de Carbono en Manglares y Áreas Protegidas de Panamá. Conservación Internacional. Serie Técnica 4. República de Panamá, 34 pp

enrichment, restoration) of valuable ecosystems such as mangroves are highly profitable, not only because of their high CO2 absorption capacity as carbon sinks, but also because of the generation of long-term ecosystem services such as fishing, protection against storms and waves, tourism, sediment retention, among others that these provide in the long term.

C2. Cost effectiveness of investments from a sustainability point of view

The proposals for actions contained in the program are designed considering the sustainability of them from the environmental, social and economic perspective; given the implementation of nature-based solutions that allow the generation and strengthening of local capacities for field monitoring and technical capabilities of institutional counterparts, non-profit organizations and local authorities, in order to provide support and technical advice that contribute to the sustainability of long-term actions.

The actions proposed in component 1 (Result 1.1, livelihoods), are aligned with component 3 (Result 3.1 and 3.2) in order to generate capacities of key actors that allow appropriation and sustainability of actions and processes carried out. As a strategy, each institutional entity has been identified to work in a coordinated manner during the implementation of each proposed result; these institutional actors will be incorporated through the capacity building processes in order to generate appropriation of the program model and the intervention logic. As part of the sustainability strategy, the main livelihood adaptation activities to be developed in the program were identified by the incumbent institutions and key actors, as part of the consultation process. This type of process allows to generate appropriation of activities, commitment in its implementation, technical advice, monitoring and, evaluation and technical follow-up after the culmination of the program. It is proposed to develop, at the beggining of the program- an awareness creation session with key institutional actors which are committed to supporting the implementation, follow up and monitoring of the program; and to draft and validate a sustainability plan with commitments and follow-up actions to be carried out during execution and after completing the implementation of the program.

C3. Benefits from implementation of proposed activities aiming at generating revenues.

From the strategic point of view, the adoption of actions based on nature, under the climate-smart agriculture approach, is the best solution to face the effects of climate change and generate better economic benefits (higher productivity = higher surplus for sales), social (food safety), and environmental (production more friendly to the environment). This is so because these solutions seek the implementation of good production practices that contribute to improving productivity while strengthening the capacity and resilience of livelihoods to climate change, and that can incorporate the use of efficient and low-cost technologies. cost. Under this approach, economic evaluations of specific activities such as Silvopastoral Systems (see Table 2.33) have already been developed, which have proven to be more profitable than traditional livestock systems; Furthermore, these can generate incremental net benefits due to the adoption of new technologies for adaptation to climate change.

Table 2.33. Economic analysis of traditional livestock versus improved silvopastoral systems

Economic analysis	Traditional	Improved SSP
VAN (10%)	1,464.52	1,796.35
VAN BENEFITS (10%)	7,202.15	7,672.88
VAN COSTS (10%)	5,737.63	5,876.53
Costs / Benefit rate	1.26	1.31

Source: Fundación Natura

The development of value chains of products with greater potential will provide the opportunity to transform those products, with added value. This will generate greater economic benefits to the communities, but more importantly, it will open the opportunity for the inclusion of gender in the production process and its benefits. For this, the program will facilitate the preparation of business plans

and strategic investments that are key to the significant improvement of the "business".
The program will promote establishment of a fair and responsible market for climate-smart products, where not only the value of the product per se is recognized, but also the additional efforts of the implementation of good sustainable production practices for the benefit of society. This will allow fairer prices and consistent with the efforts of adaptation and protection of the environment that will encourage better benefits to the producers and the recognition of their effort.
On the other hand, the maintenance and recovery of high-value ecosystems such as mangroves is of utmost importance to maintain the flow of goods and ecosystem services provided by them in the long term for the safety and economic benefit of coastal communities. In this sense, the study of valuation of goods and services provided by the mangroves of the Western Pacific of Panama developed by Barsev, estimated that some 13,719 ha of mangroves in the districts of San Lorenzo, San Félix and Remedios generate an economic flow of US $ 27.1million dollars per year, that is, about US $ 1,981 dollars per ha. of mangrove to the value of five ecosystem services, as observed in Table 2.34. In Annex 7.4 you can see the information in more detail.

Table 2.34. Economic valuation of main environmental goods and mangroves services of the Western Pacific of Panama

Environmental service	Economic value perspective of environmental goods and services flow	VET (US$ / year)
Food: Snapper, snook, tuna, cherna, mix, black shells, other species.	Provision	447,139
Raw materials: Mangrove bark	Provision	124,800
Black shells	Provision	93,600
Carbon fixation (sink)	Regulation	9,857,576
Eroded soil retention	Regulation	16,363,615
Recreation and tourism:	Cultural	
TOTAL		27,178,870

The recovery of high-value ecosystems such as the mangrove will be key to maintaining and improving environmental goods and services that are used by the coastal populations of the study area and that generate important economic benefits for them.

D. Describe how the project / program is consistent with national or sub-nationalsustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

The proposed program is consistent with national sustainable development strategies, policies and plans. According to the Government Strategic Plan 2019-2024, Panama is committed to complying with the Sustainable Development Goals (SDG), which implies eradicating extreme poverty and reducing by at least half the proportion of men, women and children of all ages living in poverty in all dimensions by 2030. In September 2015, Panama adopted by Executive Decree No. 393 the 2030 Agenda and the SDGs as part of its national development agenda, promoting actions that contribute to achieving the goals, seeking the alignment of efforts with all sectors of society. This proposal seeks to support the most vulnerable regions by contributing directly, not only to Objective 13 where the need to adopt urgent measures to combat climate change and its effects is established; but to other Sustainable Development Goals such as Goal No. 10 that refers to the reduction of inequalities, since throughout history it has been recorded and proven that the less economic inequality a community or population system has, the greater the capacity to respond to the impacts of disasters; Objective No. 11 refers to sustainable cities and communities, which seeks to improve the safety and sustainability of cities and implies guaranteeing access to safe and affordable housing and the improvement of settlements. This includes making investments in improving urban planning and management in a way that is participatory and inclusive from all social axes. All these actions proposed by the Sustainable Development Goals must go hand in hand with efforts to integrate disaster risk reduction measures into national policies

and strategies.
On the other hand, in 2017 through the National Agreement for Development and the United Nations System, the Government of Panama presented its National Strategic Plan with a State Vision, aligning priority social actions to achieve the Sustainable Development Goals. The SDGs that are linked to the project are based on: Goal No. 1 for the End of Poverty, Goal No. 2 on Zero Hunger, Goal No. 3 on Health and Well-being, Goal No. 6 on Clean Water and Sanitation, No. 11 on Sustainable Cities and Communities, Goal No. 13 on Climate Action, Goal No. 14 deals with Underwater Life and finally Goal No. 15 which covers the Life of Terrestrial Ecosystems.
The project offer overall benefits, taking into consideration international environmental treaties signed by the country. These include the Aichi targets and the Paris Agreement, which establishes measures and encourages the 195 party states of the United Nations Framework Convention on Climate Change to establish commitments to reduce Greenhouse Gas (GHG) emissions, through the mitigation, adaptation, and resilience of ecosystems to the effects of global warming. In this sense, Panama has ratified its commitment to achieve the objectives of the Paris Agreement at the last Climate Action Summit held at the United Nations. It seeks to implement concrete actions to improve our Nationally Determined Contributions (NDCs) and in this way reduce greenhouse gas emissions by 45% in the next ten years and net zero emissions by 2050.
The project is related to the evolution of institutions in environmental matters and legal regulations, as well as laws, decrees, resolutions, and others. Some of these are: in 1972, a title of Ecological Regime was added to the National Constitution; in 1986, the Institute of Renewable Natural Resources (INRENARE by its acronym in Spanish) was created; In 1998, the General Environmental Law was passed and the National Environmental Authority (ANAM by its acronym in Spanish) and the Panama Maritime Authority (AMP by its acronym in Spanish) were created; in 1999, the First National Environmental Strategy was approved; in 2006, the Panama Aquatic Resources Authority (ARAP, by its acronym in Spanish) was created and the Territorial Ordinance Law was approved in the Ministry of Housing; in 2008, a Second National Environmental Strategy was approved; The National Policy on Climate Change (Executive Decree No. 35 of 2007) is created, which has improved the regulation of its policy of mitigation and adaptation to climate change, which has been incorporated into the General Environmental Law of Panama (Executive Decree 100 of 2020 and Executive Decree 131 of 2021); The National Climate Change Strategy 2050 was approved by Executive Decree No. 34 and was officially published on June 4, 2019 in the Official Gazette of the Republic of Panama. In addition, it is aligned with its National Footprint Reduction program, which aims to incorporate sustainable development indicators into existing production practices and reduce the impact on national resources and GHG emissions. The project is aligned with these policy instruments and focuses on sectors vulnerable to the climate, including communities that are in the marine-coastal zone, as well as seeking solutions that reduce their vulnerability to the effects of climate change.
The project is also supported by the Practical Guide for Adaptation to Climate Change in Marine-Coastal Zones of the Panamanian Pacific, which aims to formulate a series of measures that make the way for the development of coastal communities. In addition, that such measures strengthen the resilience of these communities in the face of the current climate with its extremes and fluctuations, in a way that allows them to adapt to global climate change.

E. Describe how the project / program meets relevant national technical standards, where applicable, such as standards for environmental assessment,building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund

Overall, the project meets all environmental requirements established in the 1998 General Law for the Environment. In particular, the project was designed taking into consideration compliance to environmental requirements, studies, and regulatory standards for better agricultural practices, water quality, climate risks control, and the protection of coastal-marine resources. The NIE (Fundación Natura) will ensure observance of environmental and social policy of the Adaptation Fund during design, implementation, monitoring and evaluation of the proposed program, in order to identify, prevent and minimize any damage that the intervention could cause to people and the environment. A preliminary Environmental and social risks analysis was performed as part of the proposal design to ensure that

environmental and social concerns, and communities were taken into account and represented in the design and implementation of projects.
Among the requirements to be met are:

- Compliance with the laws pertinent to the activities included in the 3 proposed components.
- Projects provide fair and equitable access to benefits in a manner that is inclusive, without impeding access to basic supply of clean water and sanitation, energy, education and safe and decent work conditions, and the right to the land. The program, through the proposed projects, will not exacerbate existing inequities, especially related vulnerable groups (no marginalized groups are present in the program area).
- In analyzing the proposed projects, the NIE reviewed and considered the particular impacts on vulnerable groups. No marginalized groups are present in the program area.
- During the entire program international human rights will be respected and promoted.
- Equal participation of men and women will be encouraged; both will receive comparable social and economic benefits, and they will not be subject to disproportionate adverse effects during the development process that the proposed program promotes.
- A citizen participation plan will be developed and implemented through the entire program execution period.
- The national labor standards will be met, as well as those identified by the International Labor Organization.
- Projects financed will not involve unnecessary conversion or degradation of critical natural habitats.
- Projects designed will be implemented in a manner that avoids any unnecessary or significant reduction or loss of biological diversity, as well as the introduction of known invasive species.
- The program will not generate significant and / or unjustified increase in greenhouse gases emissions or any other cause of climate change.
- The program was designed in such a manner that will meet applicable international standards for maximizing energy efficiency and minimizing material resource use, waste generation, and release of pollutants.
- Proposed projects were designed and will be implemented in a way that avoid significant and negative impacts on health.
- Proposed projects were designed and will be implemented in such a way that promote soil conservation and prevent degradation or conversion of productive lands, or lands that provide valuable ecosystem services.

Legal or technical standards relevant to program components

The general rules / regulations / guidelines / instruments listed below will serve as a reference for compliance with the general components of the program.
The Constitution of the Republic of Panama is the predominant norm of the state, setting out the fundamental principles on which the organization, limits and powers of the State rests, as well as the duties and rights of individuals. Since 1983, the National Constitution of Panama has an Ecological Regime (articles 118 to 121), which establishes that it is the duty of the State to protect the environment and guarantee citizens to live in a healthy environment free of contamination.
In the marine-coastal zones there are different institutions with competencies for their administration, management and coordination of matters related to this type of ecosystems. They have been established through instruments of national legislation that ratify international and / or regional conventions and treaties. Among these institutions and the legal and technical standards relevant to the proposed program are:

a. Ministry of the Environment (MiAmbiente)

Created by Law No. 8 of March 15, 2015, it is rector of the state in matters of protection, conservation, preservation and restoration of the environment and the sustainable use of natural resources to ensure compliance and application of laws, regulations, and national environmental policy; in order to ensure sustainable development. Notwithstanding the functions assigned to other sectors, it is in charge of natural resources and the environment protection.
The General Environmental Law of the Republic of Panama (Law No. 41 of July 1, 1998) corresponds

as the main legal instrument that guides environmental management because it establishes the guidelines of the environmental management policy, the State organization for environmental management and management instruments, among other provisions. Panama has adopted the United Nations Framework Convention on Climate Change (UNFCCC) through Law No. 10 of April 12, 1995. The Kyoto Protocol, through Law 88 of November 30, 1998; the Doha Amendment, through Law No. 38 of June 3, 2015; the Country Agreement, through Law No. 40 of September 12, 2016 and the Escazú Agreement, through Law No. 125 of February 4, 2020.

Through Executive Decree No. 35 of February 26, 2007, the National Climate Change Policy (PNCC by its acronym in Spanish) was approved and established as the guiding framework for the activities to be developed by the public, private and civil society sectors; it sought to contribute to the stabilization of greenhouse gases (GHG); promote adaptation measures; and ensure sustainable development. In 2018, through Executive Decree No. 36 of May 28, 2018, the new organic structure of the Ministry of the Environment is instituted, under which the Directorate of Climate Change (DCC) is created in accordance with those established in the Sole Text of Law No. 41 of July 1, 1998 (General Environmental Law), which by virtue of the modifications introduced by Law No. 8 of March 25, 2015, includes Title V on Climate Change and chapters I and II on mitigation and adaptation.

Executive Decree No. 125 of March 2, 2021, which establishes the new organic structure of MiAmbiente, establishes that the Department of Adaptation and Resilience of the Directorate of Climate Change, aims to generate, analyze and evaluate climate information, studies of climate risk and environmental, socioeconomic and infrastructure vulnerability for the development, promotion and construction of initiatives for adaptation to climate change that increase the country's resilience, with special emphasis on the population, ecosystems and all productive sectors of the country's economy.

b. ***Panama Aquatic Resources Authority (ARAP***)

Entity created by Law No. 44 of November 23, 2006. Its competence lies in ensuring compliance and application of laws and regulations on aquatic resources (among those marine-coastal), aquaculture, fishing and related activities and national policies adopted by the Executive Branch. The mission of ARAP is to ensure the development of a productive and social culture of aquatic resources in a sustainable manner, in harmony with the environment, to improve the quality of life for the inhabitants of Panama. It has jurisdiction in all jurisdictional waters. The regulations that guide and are linked to the proposed program are the following:

- Law 9 of January 30, 1956, Territorial Waters - Panama Bay.
- Law 6 of January 3, 1989, whereby the Convention Relating to Wetlands of International Importance, especially as waterfowl habitat ("Ramsar Convention") and Protocol with a view to modifying it, is approved.
- Law 44 of November 23, 2006, which creates the Aquatic Resources Authority of Panama.
- Law 2 of January 7, 2006, which regulates concessions for tourism investment and the alienation of island territory for the purpose of tourist use and dictates other provisions.
- Law 8 of January 4, 2008, which approves the Inter-American Convention for the protection and conservation of sea turtles.
- Resolution ARAP No. 01 of January 29, 2008, "By means of which all marine-coastal wetland areas are established, particularly the mangroves of the Republic of Panama as special marine-coastal management zones and other measures are dictated".
- Resolution ADM / ARAP No. 88 of August 23, 2011, by which the Technical Guidelines for Preparation and Evaluation and Audits for Environmental Impact Studies for-Coastal Marine Zones and Inland Waters of the Republic of Panama are adopted.
- Administrative Resolution No. 103 of October 7, 2011, by which the Environmental Audit and Inspection Guides of Companies in Coastal Marine and Inland Waters of the Republic of Panama are adopted.
- Resolution ADM / ARAP No.012 of May 3, 2019, by which a marine area is established: the Co-management Zone for Responsible Fishing in Pixvae Bay.
- Law No. 204 of March 18, 2021, Regulates fishing and aquaculture in Panama.
- Resolution ADM / ARAP No. 022 of April 19, 2021, which creates the Technical Unit for Fisheries and Aquaculture Consultation for the regulation of Law 204 of March 18, 2021 and

establishes the organization and operation of the Technical Consultation Process.

c. Panama Maritime Authority (AMP)

It is created by Decree Law No. 7 of February 10, 1998. It is responsible for strategic coordination for the integrated management of the country's coastal zone, with the aim of contributing to sustainable development and the protection of sea resources and its coastal areas.

Other policies related to the program:

- The National Policy of Oceans.
- Technical Guide on Climate Change for Public Investment Infrastructure Projects.
- Law 44 of August 5, 2002, which establishes the Special Administrative Regime for the management, protection, and conservation of the hydrographic basins of the Republic of Panama.
- Law No. 80 of December 31, 2009 which establishes the definition and use of the coastal zone in the Republic of Panama.
- Resolution CNA-002-2012 of July 24, 2012, which approves the National Plan for Integrated Management of Water Resources.
- Law No. 38 of December 2, 2014, which establishes "The obligatory teaching of environmental education and comprehensive disaster risk management and dictates another provision."
- Public Management Decentralization Law (No. 66 of October 2015), which proposes a new role for municipalities established in the prevention of disaster risks.
- Resolution No. JTIA 035 of June 26, 2019, through which the sustainable building regulations for the Republic of Panama are approve.

Compliance with National law and regulations:

The Terms of Reference and contracts will include a clause for mandatory compliance with the specific technical regulations for each product. The staff of the executing institutions (EE) and counterparts of the program will be responsible for compliance with their institutional regulations, complying with the safeguards of compliance with national laws and regulations (Annex 8).

Food Safety Regulations:

The Government of Panama supports the implementation of food standards, Codex Alimentarius, the OPS - OMS International Health Regulations and the OMS Global Strategy for Food Safety[41]. OPS-OMS supports the strengthening of national systems, guaranteeing food safety, collaborating with governments, producers and consumers, to reduce the health, social and economic impacts associated with foodborne diseases.

In Panama, the National Directorate of Food Control and Veterinary Surveillance (DINACAVV) of the Ministry of Health is the State's governing and supervisory entity that monitors the quality and safety of food. Panama applies the Central American Technical Regulations (RTCA) on Good Hygiene Practices and Good Manufacturing Practices in the food industry. Main laws and regulations related to health that govern the food industry in Panama:

- Health Code: Ley No. 66 de 10 de noviembre de 1947
- Provisions on clothing and Cards for food handlers: Decreto Ejecutivo No. 94 de 8 de abril de 1997
- Regulates the mandatory application of HACCP, POES and BP: Decreto Ejecutivo No. 352 de 10 de octubre de 2001
- The use of the Central American Technical Regulation (RTCA) on Good Hygiene Practices is adopted: Decreto Ejecutivo No. 1768 del 13 de Noviembre de 2014
- The use of the Central American Technical Regulation (RTCA) on Good Manufacturing Practices is adopted: Decreto Ejecutivo No. 1784 del 17 de Noviembre de 2014
- Establishes the hygienic products that require Health Records: Resolución Minsa No. 17 del 15 de Enero de 2016

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[41] EB Document Format (who.int)

Field Code Changed

- Adopts Microbiological Criteria of the Central American Technical Regulation (RTCA) for foods: Resolución Minsa No. 138 del 20 de Noviembre de 2018
- It regulates activities related to handling, processing, storage, transportation, preparation and marketing and establishes the sanitary operating permits that these activities must comply with: Decreto Ejecutivo No. 176 del 27 de Mayo de 2019
- The Panamanian Food Agency (APA) is created: Decreto Ley No. 206 de 30 de Marzo de 2021.
- The National Directorate of Food Control and Veterinary Surveillance (DINACAVV) is created: Decreto Ejecutivo No. 770 de 14 de mayo de 2021

Field Code Changed

In Annex 8 (Table 2.35) there is a detailed analysis of compliance with the most relevant legal regulations and technical standards for each of the products in this program. Those responsible for supervising compliance with these standards are also specified and the actions determined by the program (How) to ensure compliance are detailed.

F. Describe if there is duplication of project / program with other funding sources, if any.

A total of 14 financing sources (programs and projects) are identified that in some way affect the project area, but no duplication is identified between the actions that these projects promote, and the activities programmed by this initiative. If potential synergies and complementary actions are evident with the project management, they should be considered to enhance and scale the impacts expected by the program. In Annex 9 there is a description of each of the projects identified with the analysis of synergies and complementarity that could be developed from a planning perspective.

G. If applicable, describe the learning and knowledge management component tocapture and disseminate lessons learned

The proposed Adaptation Program includes a specific component devoted to promote adaptation learning and knowledge management at the national and local levels: To do this, the Program will undertake the following strategies:

G1. Strategy to capture the experiences and lessons learned on the ground.

The different strategies of the Program to promote the systematization of experiences and lessons learned on the ground will be the following:

a) Establish a knowledge management subcommittee made up of communication experts from each executing entity, who will be given an awareness process about the Program, and work and monitoring activities will be established during the program execution.
b) This subcommittee will be in charge of the development, implementation, and monitoring of the Comprehensive Knowledge Management Program, which will have goals and indicators to facilitate evaluation for each Component, in accordance with the expected outcomes and outputs.
c) The representative of each executing institution will be responsible for capturing the experiences and lessons learned from the activities carried out under the responsibility of their institution.
d) The Terms of Reference for the contracting of services will require that technicians in charge of the implementation processes incorporate, from the planning stage of the proposal, the perspective of capturing and sharing experiences and lessons learned during execution of on-the-ground activities.
e) Six-monthly workshops on systematization of experiences and lessons learned will be organized for technicians from the executing institutions and consultants from NGOs and companies related to the execution of program activities, in order to improve local and national capacity on this topic.
f) The M&E process will be launched at the beginning stage of the program, aiming to capture the

lessons learned from the start, and generate early recommendations to allow adjustments or changes -if needed- for an effective systematization of experiences and lessons learned.

g) A general base format will be used to guide the preparation of small publications to systematize experiences and lessons learned with high potential for publishing about activities carried out by the program.

G2. Program strategy to ensure outreach of knowledge produced, particularly to stakeholders with limited access to information technology tools.

The program includes a broad series of activities, especially related to livelihoods adaptation (Component 1), that will be directly linked to Component 3 (knowledge management). The program will promote the strengthening of theoretical-practical capacities for the beneficiaries, while working on the understanding of climate change, the effects it generates, and the solutions to face it (nature-based adaptation), as part of Component 3. Among the strategies to guarantee the scope of the knowledge produced, particularly to actors with limited access to information technology tools are:

1. Development of field schools where actors can put into practice planned adaptation activities with support and technical advice.
2. Training of extension workers (community residents) who will be prepared for the development of experience exchange actions.
3. Exchange of experience from producer to producer, which allows producers -in a simple and practical way- to share the knowledge and actions developed with other beneficiaries, and as they strengthen their capacities, they contribute to the strengthening of capacities of other community members.
4. Regular public events to present, discuss and validate Program activities and products, and receive feedback from local stakeholders.
5. Information / dissemination materials to be used during different stages of the program (data sheets, dossiers, others) as part of a larger communications strategy for the program, taking advantage of work sessions carried out in different components.
6. Promoting collaborative agreements with academic institutions, with a presence in the program area, specifically public universities, to allow knowledge, integration and escalation of activities of interest.
7. Strategic coordination with MIDA, ARAP, ATP, IDIAP (Agricultural Research Institute), Municipalities, NGOs and others to include information on the program and activities as part of their extension programs in the area.
8. Development of applications and use of cell phone networks, radio, and other facilities to allow access to climatic data generated by the program components, particularly Component 2.
9. Support for the development of the agroclimatic bulletin with information on climatic trends and technical recommendations for each productive sector according to the season and climatic trends.

G3. Program knowledge management strategy for long term Project outcomes sustainability

For the sustainability of the outputs generated by the project, the development of knowledge management strategies is a key aspect. In this sense, the program proposes the implementation of the following strategic actions:

a) Awareness-raising and appropriation processes of the actions and outputs by the executing institutions and NGOs, which includes strengthening the technical capacities of the staff, the development of follow-up plans and technical accompaniment during processes and products developed, among other actions.

b) Development of local processes with local authorities and community-based organizations for the appropriation of practices, products and acces to potential sources to continue scaling up the actions and products developed.

c) Establishment of agreements for the development and sustainability of actions in the medium term, which allows the consolidation of processes and improve outcomes sustainability.
d) Strengthening local capacities of CBOs and municipalities for the preparation and management of projects, which will contribute to the sustainability and scaling up of the program's results.
e) Strengthening of the adaptation portal hosted by the Ministry of the Environment, that allows access to tools, training experiences and lessons learned, to contribute to the program sustainability.
f) Strengthening the finance program for climate action, which includes the strengthening of FONACC and the development of a microfinance scheme for the coastal-marine sector with considerations of adaptation and climate risk, which allows access to resources for sustainability and scaling up of project actions.
g) Development of tools and experiences such as cost-effectiveness analysis, viability of adaptation actions, and the platform for modeling climate vulnerability and environmental risk; all of them innovative actions that can generate important impacts on public and private investments, and that will have funding opportunities for improvement and scaling them up at the national level.

H. Describe the consultative process, including the list of stakeholders consulted,undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmentaland Social Policy and Gender Policy of the Adaptation Fund

The consultation process for the program proposal was carried out under two modalities, mainly through virtual meetings and f ace-to-face meetings, considering key national and local governments in the country in order to identify the risk conditions in which the communities find themselves, their livelihoods and ecosystems, in addition to knowing the potential of the projects or measures that can be carried out within the program's area of action. In the first stage of the consultation process, face-to-face and virtual meetings were held with different institutions representing different sectors such as Environment, Agriculture, Fisheries, Tourism, Non-Governmental Organizations and the academic sector. On the other hand, in the second consultation stage, face-to-face meetings were organized with the local governments of the program's action area, which included the districts of Aguadulce, Antón, Capira and San Carlos, among others. These consultat ions allowed the project to identify the main effects caused by climate change that impact the study area, as well as the gaps and needs that could be addressed with this new program proposal to strengthen coastal communities that are mainly threatened by the rise in sea level.

Government Entities and Local Governments

- Aquatic Resources Authority (ARAP): ARAP provided information related to their on-going projects, focused on the production of shrimp, fishing, black Shell (bivalve), and the implementation of aquaponics pilot projects; activities that ca-n be replicated at the program´s area. They provided contact details for monitoring the exchange of information and shared the project model called "Adaptation to climate change through the implementation of fisheries and aquaculture co-management based on fattening, restocking and sustainable use of the black shell (Anadara tuberculosa)". Additionally, they expressed the importance of having climate change indicators related to aquaculture because they have useful related data.
- Tourism Authority: This entity fully supports this new country proposal. Currently, they do not have ongoing initiativ es within the program's study area; however, they consider it essential to have information related to climate change related to touris m. Additionally, they highlight the importance of establishing guidelines so that the community tourism activities can co nsider the risks generated by climate change and avoid losses as a result; work with key players in the sector such as hotels and restaurants, while encouraging community tourism in order for the visitor to leave Panama understanding why these coastal communities conserve the environment, allowing the creation of new tourism products.
- Ministry of Agriculture: This ministry expressed support in the development of this country proposal.

For instance, they identified areas where SCALL pilot projects for water harvesting systems are needed, as well as activities such as beekeeping, sustainable livestock, agroforestry systems, crops of vegetables and reforestation actions. On the other hand, the selection criteria for the pilot projects were discussed, considering communities vulnerable to the effects of climate change.

- Ministry of Environment: Within the Ministry of Environment, Regional Directorates of Panama Oeste, Coclé and Herrera worked together in identification of main threats that their coastal communities face, from the district of Arraiján to the mouth of the Parita River. It was determined the program would offer great support for improving local development, adapting to climate change, and allow -at the same time- income generation to alleviate poverty at vulnerable communities. In addition, they highlighted the main activities carried out in this area for subsistence: fishing, aquaculture (production of black shells and crabs), mangrove extraction for charcoal production and community tourism. In the province of Panama Oeste, the most vulnerable population are at Punta Chame and Puerto Caimito, due to sea level rise and the exploitation of mangrove swamps (for charcoal). On the other hand, Playita de Bique is affected by the extraction of underwater sand. In the community of Corona, the main affectation is saline intrusion, which causes salinization of underground sources. Meanwhile, in the province of Coclé, the community of Los Azules in the district of Antón presents significant modifications due to the rise in sea level and coastal erosion. The Boca Nueva sector presents a loss of the mangrove ecosystem, as well as a loss of coastline. In the Buenaventura area, the impact on infrastructures in hotel or tourist complexes due to sea water intrusion, generates great sedimentation. On the other hand, at the province of Herrera, Playa el Reten and Playa Agallito are the most affected by climate change, due to the increase in sea level, which in turn is causing the loss of the mangrove swamp. Among other effects, it was mentioned that the increase in sedimentation, and the intrusion of the sea is affecting fishing areas. The National Directorate of Coasts and Seas (DICOMAR) indicated they collected and recovered geospatial data on studies of "Evaluation of Marine Ecoregions in Mesoamerica" dating from 2008 which provides information on bathymetries, types of beaches, type of sandy and muddy bottom of the Pacific and Caribbean. Currently, work is being done on the regulations for coastal areas, seeking to improve the legislation on mangroves. Finally, the Climate Change Directorate indicated the need to strengthen the capacity (operational, administrative and financial) of the Panama Climate Change Adaptation Fund (FONACC) to manage Climate Change adaptation subprojects for the benefit of vulnerable communities. For this, it is also necessary to create capacities in the CBOs and local governments that allow these entities to prepare and implement (technically and financially) adaptation subprojects and contribute to the mobilization of climate financing. Currently, the Fund does not have such capacity; however, the necessary adjustments are being made to strengthen this mechanism, in order for it to become operational in the short term.

Organizations and Academia:

- Regional Center for the Western Hemisphere and The Audubon Society of Panama: In the first approach with the (CREHO Ramsar) team, they explained the different projects they carry out for ecosystems conservation, with emphasis in priority areas of Bay of Chame and Bay of Parita, in which they have training projects for communities (on fisheries and ecosystem restoration). In addition, they shared other initiatives focused on planning sustainable urban areas and geospatial analysis modeling. On the other hand, the Audubon Society of Panama stated that there is great opportunity for synergy with program activities with their Project “Improving, Valuing and Protecting the Coastal Natural Capital of Panama”, specially at Bahía de Parita.
- Smithsonian Tropical Research Institute: Academia participation is an important asset for the proposed program. On behalf of STRI, Dr. Steve Peaton, director of the Physical Monitoring Program at the Smithsonian Institution, highlighted the importance of monitoring the sea, focusing on the quality of sea level gauge systems where their constant programming must be considered, as well as criteria recommended by the NOA. He also recommended holding meetings with the

Panama Tsunami committee for the establishment of sea level gauges. STRI is conducting studies, particularly in trees, examining how key processes such as photosynthetic carbon dioxide fixation and associated transpiration water loss are regulated, and how these processes ar e associated mechanically to the acquisition of water and nutrients from soils, light, temperature, air humidity and atmospheric concentration of carbon dioxide. The aim is to better understand and predict the growth and survival of tropical vegetation in past, present and future conditions, and to explore how functional diversity is linked to the high diversity of plant species in tropical forests. These studies may be of relative importance for the proposal given that a work methodology has already been developed and could provide technical support in relation to the livelihood's component of the proposal. It was highlighted the work carried out by Panama Audubon Association, where mangrove study plot systems have been installed and for which they recommended creating work synergies. Finally, the work STRI has been conducting on mangrove monitoring, specifically studying the loss and gain of the mangrove forest cover (flying over the Panama Bay area and capturing the state of the forest through high resolution photos). In the future, it is for seen to scale this monitoring to other areas of the country with the support of other institutions. STRI recommended to consider carrying out this type of study before starting reforestation actions, given that coastal marine areas are very changeable due to impacts such as sedimentation at the mouth of rivers, coastal erosion and extreme weather events that have impacted the coasts of Panama.

- Municipalities: During the consultation phase, municipalities of Aguadulce, Antón, Capira and San Carlos stated seve re affectations in their townships because of climate change. At Antón, for instance, they mentioned problems related to the sea level rise; at Capira, they explained how the mangrove forest is cut down for the economic support of several poor local families, mainly in Cermeño township. Another issue is the uncontrolled extraction of underwater sand, and the presence of slime on the beaches. They stressed the need to develop production activities in coastal communities to achieve sustainable economic livelihoods. According to the survey made with focus groups, the majority expressed a medium level of knowledge about climate change, adaptation measures and related projects in the study area. The Municipality of Aguadulce commented that in areas such as El Salado beach, Pocrí, Barrios Unidos, adaptation measures are required such as reforestation and land use plans; and stated the need for trained personnel within the municipality to follow-up on the actions proposed. This municipality openly supports the proposed program. A survey was shared with the attendees, and 12 out of 15 people have knowledge about climate change and its effects. On the other hand, the municipality identified that the most affected sectors are fishing, agriculture, livestock and tourism. Mentioned risks for these sectors are due to floods, tidal waves, drought, sea level rise, coastal erosion, beach decline, and storms. The municipality of San Carlos stated that "the sea has taken everything", referring to the rise in sea level in the coastal townships of the district. Additionally, the importance of strengthening and looking for alternatives for fishermen as their activity has seriously diminished due to climate change. A survey was also shared with meeting attendees, where the majority showed knowledge on climate change issues; the main risks for the communities being floods, coastal erosion / beach decline, storm surges, landslides, and drought -primarily affecting the productive sectors of agriculture, tourism, and fishing. Additionally, in this district, the projects and management plans related to climate change are null.

Annex 10 presents a report and a list of actors who participated in the process of formulating the program.

Public Consultations:

Between July 25 and 31, 2023, public consultations were carried out in the three provinces where the program has an impact, the objectives of which were: Disseminate general information on the program and components and obtain recommendations, comments, and reactions on the project activities. In the public consultation process, 82 people participated, of which 46 were women and 36 men, with a good participation of Community-Based Organizations (CBOs).

Table 2.36 B. Participation of potential beneficiaries in provincial Public Consultations disaggregated by gender.

Province	Women	Men	Total
Panamá Oeste	8	7	15
Coclé	8	6	14
Herrera	30	23	53
Total	46	36	82

Among the main results that can be highlighted is the validation by the potential beneficiaries of the effects or impacts that Climate Change already causes on their communities and livelihoods, ratifying impacts such as coastal erosion and salinization of aquifers due to an increase in the level of sea and higher waves, storms and heavy rainfall that cause flooding with damage to homes and livelihoods, and water scarcity in the dry season that affects their productive activities and provision of water for basic needs.

Among the activities proposed and validated by the communities, those contained in Component 3 stand out: the request of the participants to generate capacities to understand and face climate change and those of Component 1: the opportunity to diversify their productive activities, learn to incorporate good productive practices that help adapt their livelihoods to climate change, continue with mangrove recovery actions, and help improve water resource management for their communities and livelihoods, among the most important.

To define the community projects, a consultation process was carried out with government institutions (executing entities); through interviews and/or consultations in person or virtually with Community-Based Organizations (CBOs) and beneficiary communities between the months of October to December 2023. They were first defined by the governing entities of the topic of aquatic resources and of environment the possible partners of the project; Subsequently, community consultations were held to collect information with the directors of community organizations about the support needs to face the impacts of climate change that are affecting ecosystems and their livelihoods.

The results of the consultations contributed to validating and more specifically defining the community projects, their beneficiaries and specific location of the intervention areas, as well as the nature of the activities carried out by the communities. The environmental and social risks of each activity were also validated. which are in the risks section of the proposal. In the consultation, the proposed community projects were also validated and only the greater preference of the CBOs to work in the collection and management of black conch instead of tilapia culture was recorded, and in the case of community fishing to include the transformation of fishing of lower value of by-products, which will allow greater participation of women in this activity. The recommendations of the consultation process with OBCs and communities have been validated and included in the final proposal. For more detail on the results of this public consultation process, see Annex 11.

I. Provide justification for funding requested, focusing on the full cost ofadaptation reasoning

The requested financing is considered valid and reasonable due to the following facts:

- The scope of the Program includes interventions at the local level -in coastal communities-, nine townships in three provinces: and at the national level.
- The basis of the program is the creation of resilience through a comprehensive portfolio of subprojects in coastal areas that support important livelihoods, which need to be maintained for the sustainability of populations (more than 220,000 people), the permanence of high value ecosystems to protect lives, goods and services vital to the local, regional and national economy; and development with a multisectoral approach. The intervention is proposed in such a way that the expected results are interconnected and allow to create synergy in the expected impact.
- The Program includes a balanced implementation of adaptation measures at the local level (farm

plans, apiary systems, oyster farming, tilapia farming, integral gardens, community fishing and community tourism); for administration of water for consumption and irrigation; activities to strengthen value chains for local products; tools for risk reduction at regional and national level (improvement of meteorological stations, installation of sea level gauges for monitoring tsunamis and strengthening of the SAT system of floods, waves and tsunamis of the Central Pacific); complemented with technical analysis and production of operational and knowledge products (analysis of climate vulnerability and adaptation measures for each of the hydrographic basins in the area; environmental land use plans and municipal strategic plans with environmental information, and adaptation and resilience actions; a model of sea level rise for the Central Pacific of Panama); systematization documents, M&E adaptation protocol, adaptation knowledge platform, among others).

- The adaptation measures described above have been budgeted taking into consideration orders of magnitude (cost figures) based on previous interventions of the implementing partners (Fundación Natura, Ministry of Environment; IMPHA, Ministry of Agriculture), even previously financed with resources from the Adaptation Fund. The unit costs have been revised to present adequate orders of magnitude for each component.
- The program proposes nature-based solutions, which have been designed in consultation with institutional actors (sectoral authorities), local governments and community representatives, for which it responds directly to priorities and needs, where there is interest and commitment to the programs´ success and the sustainability of obtained results.
- Local participation in the design of the program ensures the ownership of the proposed solutions, and the interconnection of the different activities to enhance the results.
- A series of activities have been incorporated for building capacities in different actors, on climate adaptation and resilience, in such a way that said capacities allow the continuity of the measures adopted for the execution of this program.
- The expected benefits in a scenario with the program versus a scenario without a program exceed the value of staggered investments over decades, or isolated investments without the logic of adaptation and building resilience throughout the Central Pacific of Panama (see table 2.37).
- This is further supported by the cost benefit analysis figures presented in Sections C1 to C3 of Part II of this document (see page 39 - 45).

Comparison of components / output between a baseline situation (without the program) and a scenario with the proposed program

Table 2.37. Comparison of components / outputs between a baseline situation (without the program) and a scenario with the proposed program

Component / output	Without the program	With the program
Component 1		
1.1 Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems.	-Design and implementation of farm improvements in isolation by crop, in the absence of climatic considerations and based on response to the demand of some individual local producers. -Lack of diversification in traditional livelihoods, which increases vulnerability due to climate change and threatens water and food security. -Unsustainable use of marine-coastal resources that support the livelihoods of vulnerable populations. -Greater dependence on single livelihoods.	Integrated approach, with productive and adaptation solutions designed with the local and national stakeholders involved, offering diversification of livelihoods, the installation of nature-based solutions and the incorporation of climate-smart technology. It is consistent in promoting the concept of sustainable and resilient use of agricultural farms; in making visible the services associated with the use of water from surface sources and rainwater; transfer knowledge in good productive and diversified practices; the integration of the participation of women and men equitably; the increase of income in vulnerable families and incorporation of the family in the activities of their farms; food security; protecting ecosystems that provide important environmental services (including community tourism opportunities, aquaponics, and artisanal fishing). The combination of solutions makes visible activities that are completely viable and profitable in the social, economic and environmental sense.
1.2 Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services.	Productive processes that do not generate added value and generally exclude the equitable participation of women, thereby posing a threat to food security and weakening resilience to the effects of climate change.	Enables the construction of business success stories of climate-smart products or services, linking them with the execution of output 1.1. It ensures the sustainability of the activities beyond the execution of the program, leaving them prepared with a multi-year roadmap for the medium and long term; and the knowledge of how to prepare this strategic planning process in business terms adapted to the level of their capacities, including gender equality at all times.
1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low- cost technologies.	-Low resilience of communities regarding water security management. -Possible negative effects on the health of vulnerable populations due to lack of access to water. -Inefficient use of water sources at vulnerable coastal marine areas.	This product will make visible the environmental and social services associated with the use of water from surface sources and rainwater (water security); the integration of the participation of women and men equitably; the construction of capacities that will give sustainability to the administration of rural aqueducts from the sense of resilience and adaptation to climate change; and introducing the use of low-cost technologies, which have not been practiced in the area.
1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems.	-Lack of information on the current status of high-value ecosystems (dry forest, mangroves and gallery forests) in the program area. -Ecosystem damage and lack of connectivity, which negatively impacts local and regional biodiversity. -Latent threat of the loss of environmental services that ecosystems can provide, such as protection against storms, water regulation, protection against runoff and sedimentation,	Important information will be generated on the gain or loss of forest cover in the Central Pacific, which will allow to have scientific evidence about the evolution in forested areas and take appropriate short-term actions, to ensure the best status and availability of the ecosystem services that provide. There is evident fragmentation in high-value ecosystems, and the need to connect them to preserve and enhance the social, environmental and economic service they provide is inferred. By implementing this series of products, capacities will be built in the

Component / output	Without the program	With the program
	and reduced impacts from rising sea levels. -Possible isolated processes without scientific basis to guide actions in areas where greater synergy and impact on the results are obtained.	community on the process of restoring high-value ecosystems, by piloting (learning-by-doing) the production of seedlings and the establishment of plantations.
Component 2		
2.1 Developed baseline studies on climate change with application in planning and environmental land management.	Medium and long-term development processes are not carried out based on planning and management tools that consider vulnerability and climate risks.	-Information on climate vulnerability and appropriate adaptation measures will be collected with the logic of hydrographic basins in 5 areas of the program, which will allow the respective local governments and sectoral governing entities, to design in a participatory way, interventions that advance adaptation to change climate. -For the first time, a model of sea level rise in the Central Pacific will be generated based on the IPCC scenarios, to help in territorial planning processes and district development interventions for climate adaptation and resilience, financed with municipal funds.
2.2 Strengthened the network of meteorological stations and sea level gauges, and the related Early Warning Systems (EWS).	The adaptation process (planning, land use planning, agricultural production and other productive activities) is null or slow, and the opportunity to prevent risks on a larger scale and generate scientific information (agroclimatic and hydrological) is lost to successfully guide strategies and investments in the face of vulnerability to climate change.	-Support the strengthening of the existing National Network of Meteorological Stations (hydro and agrometeorological), improve climate information products to support the planning and reporting of adaptation measures, also on risks particularly at the local and regional level, focused on the Central Pacific of Panama. -It will help to strengthen timely climate information that will guide preparedness and response actions to threats specific to the coastal-marine zone of the Central Pacific of Panama (for example, tsunamis, waves and floods), with the addition of 3 sea level gauges.
2.3 Developed a climate vulnerability and environmental risk modeling platform.	-There is a lack of solutions based on updated technical and scientific information to reduce risks in public and private sector investments, and to guide local development in the Central Pacific of Panama. -There are no tools for enabling inclusion of vulnerability / climatic / environmental risks in an easy, accessible and reliable way for planning, organizing, and carrying out investments and projects in the area and the country.	Promoting open access to information on climate vulnerability and environmental risks will be possible with the design and implementation of the first platform for modeling climate vulnerability and environmental risks. This will be available to decision makers, investors, local authorities, academia and citizens in general. It will represent an exceptional advance for the inclusion of climatic considerations in planning, ordering, and environmental management activities; and consider climate risks in public and private sector project investments. This tool can be scaled up at the national level, in order to contribute to adaptation in the country.
2.4 Prioritized adaptation measures implemented according to cost effectiveness analysis.	-Greater threat due to lack of preparation in mitigating impacts and risks derived from climate variability. -Lack of climate resilience of communities, livelihoods and ecosystems in the program area.	With knowledge generated from other products of the Program and others, a prioritization of nature- based adaptation measures can be generated, with the particularity that it will be integral in the incorporation of economic, political, social and environmental feasibility analysis. This will allow more efficiency and effectiveness to select future actions. These products will be monitored and the experience will be systematized for academic and replication purposes.
2.5 The monitoring and evaluation system for adaptation to climate change has been strengthened.	It is not possible to effectively and timely evaluate progress in the implementation of strategies and plans for adaptation to climate change and to generate recommendations for the more	This product will allow the generation of information for the improvement of national adaptation strategies and plans, and investments in adaptation to climate change. It will also allow the validation of the adaptation monitoring and

Component / output	Without the program	With the program
	effective management of the country's adaptation actions and investments.	evaluation system with its indicators and protocols. Improving adaptation strategies and plans will increase the effectiveness of investments in the program area.
Component 3		
3.1 Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented.	-Low capacity in key actors to understand climate change and ecosystem-based adaptation. They do not know national policies and plans to face global climate change and its impact at the local level; and they work in contiguous territories without coordination with each other. -Municipalities and CBOs lack the capacities to elaborate, implement, monitor and evaluate adaptation proposals with a community focus that allows them to develop adaptation actions and strengthen climate resilience in their communities and livelihoods. -Limited public access to technical information on climate change in Panama, based on projects. - Low inclusion of vulnerable groups in decision-making participation and strengthening in adaptation.	The program will develop capacities in key actors for understanding climate change and ecosystem- based adaptation. Actors responsible for national policies and plans will be better prepared, as will the CBOs and municipalities of the Central Pacific of Panama. A knowledge management program will be developed that includes the communication of the progress and results of the program, the systematization of experiences and lessons learned, and the promotion of exchanges at different levels. It will allow the strengthening of the adaptation portal established during the development of the country's first adaptation program as a key tool for communication, dissemination, training and installation of the climate vulnerability and risk modeling platform. The preparation and development of the gender action plan increases the participation of vulnerable groups (women, youth, the elderly) in project actions and benefits, including strengthening capacities in adaptation and gender, participation in informed decision-making, access to benefits of productive activities.
3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities.		
3.3 Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation and comprehensive project management.		
3.4 Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program to systematize experiences, lessons learned and their appropriation.		
3.5 Ensured the communication actions of the program that provide information to its stakeholders.		

J. Describe how the sustainability of the project/program outcomes has been taken into account when designing theproject / program

To guarantee the integral sustainability of the actions developed during the implementation of the program, three key approaches will be considered in parallel: a) explicit support and appropriation of processes and products from interested parties, b) strengthening the capacities of key actors for the continuity and sustainability of the actions, and c) know and mobilize the necessary resources to maintain the developed processes and results over time.
The following considerations were taken into account to ensure the sustainability of the proposed program:
Economic and financial sustainability

a) Strategic strengthening of technical and administrative capacities with emphasis on field school methods (learning by doing) in order to guarantee the management and implementation of techniques (nature-based solutions) for their long-term sustainability.
b) Provision of continuous and intense technical assistance in order to generate local capacity and commitment to post-program follow-up.
c) Co-financing (in kind) as a means to guarantee ownership of the projects and long-term commitment.
d) Promote the exchange of experiences among beneficiaries to promote a multiplier effect.
e) Improve conditions for access to microfinance and the capacity to manage new opportunities for support and consolidation of processes (projects).

At the institutional level:

a) Criteria established for the selection of technicians who show long-term commitment and interest in strengthening their capacities for the program implementation, which should include institutional technicians, non-governmental organizations, academia, local authorities, among others. The objective is to strengthen a critical mass of experts in different adaptation approaches, generating a supply and demand for technical adaptation skills.
b) Establishment of collaboration agreements with government entities to include activities within their competence in institutional programming in accordance with the program calendar and inclusion of post-program actions that contribute to sustainability. It is sought with this that the adaptation solutions are gradually institutionalized and replicated in other sites (scaling up).

On a social level:

a) Encourage adaptation measures to generate tangible economic benefits (better income, food security, access to water), to the beneficiary families.
b) Boosting the diversification of livelihoods and development of the value chain with the incorporation of gender in production processes and benefits.
c) Strengthen the technical capacities of beneficiaries through field schools (learning by doing) and exchange sessions that all ow the generation of local capacity to monitor and maintain implemented nature-based solutions, as well as incorporated technologies.
d) Promote exchanges from producer to producer in order to encourage appropriation and strengthen their technical capacities.
e) Promote access to specialized technical advice in a constant and sustainable way while providing solutions to producers problems and needs.
f) Strengthen local capacity for better access to financing (projects and / or microfinance) that helps to improve and scale productive activities.
g) Development of planning tools (management plans, business plans) that provide technical guidance for production process and improve micro-businesses.
h) Promote the consolidation of fair and responsible markets with climate-smart production, that contributes to the socioeconomic benefit of producers and the sustainability of their ventures.

At an environmental level:

a) Promote a change of beneficiaries´ mindset and behavior to incorporate nature-based solutions and better manage their farms´ natural capital, so that it continues to provide environmental goods and services in the long term.
b) Compliance with national environmental regulations and support for compliance with international agreements or conventions.
c) Establishment of agreements with benefited owners to incorporate nature-based solutions on their farms

(agroforestry, forestry, etc.) and conserve and manage important natural resources on their farms (soil, water, forests, biodiversity).

d) Promote the use of organic or natural fertilizers and insecticides to strengthen organic production and reduce the impact on contamination by agrochemicals.

e) Support for actions to recover high-value ecosystems, recognizing their importance for the generation of critical environmental goods and services they provide to the local population.

K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / program

The analysis of the proposed project classifies it as Category B because the execution may generate environmental and social impacts that are small in scale, reversible and easy to avoid or mitigate.

Table 2.38 Checklist of environmental and social principles.

CHECKLIST OF ENVIRONMENTAL AND SOCIAL PRINCIPLES	No further assessment required for compliance	Potential Risks and Impacts - Further Assessment and Management Required for Compliance
Compliance with the Law	X	
Access and equity	X	
Marginalized and vulnerable groups		X
Human Rights	X	
Gender equality and women's empowerment	X	
Core labour rights	X	
Indigenous Peoples	N/A	
Involuntary resettlement	X	
Protection of natural habitats	X	
Conservation of biological diversity		X
Climate change	X	
Pollution Prevention and Resource Efficiency	X	
Public health	X	
Physical and cultural heritage	N/A	
Soil and land conservation	X	

Below is an analysis of the implementation of the 15 environmental and social principles of the Adaptation Fund in the design of the Program.

Principle 1: Compliance with the Law

The Program fully complies with national and international standards and is classified under category B in accordance with the principles of the FA. The Project complies with and is aligned with national policies, laws, standards, and regulations and has been validated by the Ministry of the Environment, the governing body for natural resources and the environment in Panama. The Program meets the required guarantees so that the programmed activities do not generate a significant impact on the environment.

Principle 2: Access and equity

Project beneficiaries include vulnerable populations (women, youth and fishing communities) who are often excluded from benefits and participation in decision-making. An approach to applying the Environmental and Social Policy and Safeguards of the FA and Fundación Natura will be maintained. Clear guidelines have been contemplated for the selection of beneficiaries of the Program where there is no discrimination or favoritism and the most vulnerable areas have been prioritized based on the technical/scientific information generated by

the Environmental Authority. In addition, an extensive consultation process has been developed with the competent authorities so that the program benefits the most vulnerable groups and communities. A knowledge management program is included to incorporate these vulnerable groups and strengthen their capacities (Component 3). The Program includes a complaints management mechanism. Project beneficiaries include vulnerable populations (women, youth and fishing communities) who are often excluded from benefits and participation in decision-making. An approach to applying the Environmental and Social Policy and Safeguards of the FA and Fundación Natura will be maintained. Clear guidelines have been contemplated for the selection of beneficiaries of the Program where there is no discrimination or favoritism and the most vulnerable areas have been prioritized based on the technical/scientific information generated by the Environmental Authority. In addition, an extensive consultation process has been developed with the competent authorities so that the program benefits the most vulnerable groups and communities. A knowledge management program is included to incorporate these vulnerable groups and strengthen their capacities (Component 3). The Program includes a complaints management mechanism.

Principle 3: Marginalized and vulnerable groups

There is a low risk of exclusion of vulnerable and marginalized groups (women, youth and fishing communities) during the execution of project activities (Access and appropriation of the Program) and/or that these beneficiaries (vulnerable groups) disengage from the program. The beneficiaries of the program are coastal agricultural producers who make up the group most vulnerable to the effects and impacts of Climate Change in the Program area. Through the consultation processes, actions have been focused so that the most vulnerable groups are incorporated as beneficiaries of agroproductive actions with a Nature-based Adaptation approach and in knowledge management processes.

Principle 4: Human Rights.

There is no risk. All activities proposed in this Program are in accordance with the Universal Declaration of Human Rights. In addition, the Program will promote fundamental rights such as access to food and water (Component 1) and access to information (Component 3). The Program will not carry out any activity that may result in a violation of human rights during its implementation. Panama has ratified the American Convention on Human Rights (Pact of San José, Costa Rica), signed in San José on November 22, 1969. It was approved by Law No. 15 of October 28, 1977, Official Gazette No. 18,468 of 30 November 1977. The program will comply with the provisions established in this law. No initiatives were identified whose execution is not aligned with established international human rights.

Principle 5: Gender equality and women's empowerment

Low risk is expected. Women's participation can be conditioned on fulfilling household chores and caring for their children. The Program promotes the participation of women in agro-productive activities (Component 1) and in their participation in decision-making (Components 1 and 2), as well as in strengthening their capacities for full participation in the benefits of the project (Component 3). The Program will promote the definition of women's roles in agro-productive activities and their inclusion in the value chains of the selected products according to their availability. The program will work on empowering women as beneficiaries.

Principle 6: Core labour rights.

A low risk is estimated that the labor code and minimum payment standards established by Panamanian legislation will not be met. The Program does not contemplate activities that represent a threat to the labor rights of the beneficiaries. For agroproductive and reforestation activities (Component 1), national labor standards (Labor Code) will be respected, and the salaries established by the National Government must be met. Child or minor labor will not be permitted in the Program in accordance with national and international standards.

Principle 7: Indigenous Peoples.

There are no indigenous communities settled in the Program area.

Principle 8: Involuntary resettlement

Not appreciable risk. During consultations on the project, the beneficiaries confirmed that there is no risk of displacement in the Program intervention area.

Principle 9: Protection of natural habitats

There are no risks of impact on natural habitats. Rather, the Program promotes good productive practices that

include soil conservation and management, water sources, and biodiversity conservation. Agroproductive activities are oriented towards adaptive management (AbN) through good practices, highlighting the importance of conservation and management of natural capital and promoting the reduction of the use of agrochemicals and promoting the use of fertilizers and pest biocontrol (Component 1). The Program even promotes the recovery of high-value ecosystems (Component 1) and the awareness of beneficiaries about the importance of the conservation and management of Natural Resources for the provision of environmental goods and services (Component 3). In the program area there are no legally established protected areas or in the process of protection, although there are mangrove ecosystems recognized as high-value ecosystems.

Principle 10: Conservation of biological diversity

There is a low risk of biodiversity loss caused by forest fires, forest clearing, slash and burn (traditional agriculture), bycatch, cultivation of known exotic species (e.g. Tilapia) and use of agrochemicals in agricultural activities despite the fact that the Program promote better production practices and discourage the use of agrochemicals. The Program will promote the development of farm management plans for the development of sustainable agriculture and livestock, promoting the conservation and management of the farm's natural capital and the incorporation of good productive practices through Nature-Based Adaptation. The Program contemplates raising awareness among beneficiaries about the importance of biodiversity conservation and the mitigation of any impact of planned activities, even if they are slight. Possible minor risks have been identified in some activities of Component 1, so a set of mitigation measures are included in the EMP (see Table 3.4).

Principle 11: Climate change

There is a low risk of emissions (GHG) due to the type of activities established in the Program.

The Program will not generate a significant and unjustified increase in greenhouse gas emissions, but rather will promote the conservation of ecosystems and productive systems that contribute to improving CO2 sequestration.

Principle 12: Pollution Prevention and Resource Efficiency

There is a moderate risk. The management of solid and liquid waste, including agrochemical residues, can affect the health of people and ecosystems; This is despite the fact that the Program promotes alternative measures to avoid and reduce its use. Although the proper management of solid and liquid waste is the responsibility of producers and competent authorities, the project will promote training to reduce its use with biological alternatives (bio-inputs) and will train producers in the management of polluting waste (solid and liquid). The project will work to reduce the generation of polluting waste from agro-productive activities (Component 1), promote biological alternatives (bio-inputs) and train producers to better dispose of waste and reduce its use (Component 3). Additionally, the project will be executed in a manner that complies with applicable national and international standards to maximize energy efficiency and minimize the production of waste and the emission of pollutants (including GHGs).

Principle 13: Public health

No effects are expected on Public Health generated by the Program activities. The Program will promote the national medinas established by the Ministry of Health to prevent the spread of diseases that affect public health in the work area, considering recommendations from international organizations such as WHO and PAHO.

Principle 14: Physical and cultural heritage

Not appreciable risk. No mitigation measures required. There are no physical and/or cultural heritage structures registered in the Program area.

Principle 15: Soil and land conservation

Low risk. The risk identified is related to rehabilitation and land use. The project promotes the conservation, recovery and management of soil as part of good productive practices and Nature-Based Adaptation measures (Component 1). As part of the knowledge management actions (Component 3), beneficiaries will also be sensitized and trained on the importance of soil conservation and management as a base element for the productivity of beneficiary farms.

Table 2.39. Environmental and social impact and risks

Checklist of environmental and social principles	Further assessment required for compliance (Yes or No)	Potential impacts and risks – further assessment and management required for compliance
Principle 1: *Compliance with the Law*	No	Risk: Minor failures are committed in compliance with national rules and regulations. Likelihood: Low Potential impact: High Measures: The IE y EE (counterparts) will ensure that the Program will comply with applicable national and international law, as well as a description of the legal and regulatory framework for any project activity that may require prior permission.
Principle 2: *Access and Equity*	No	Risk: Limited capacity to guarantee fair and equitable access to the benefits of the Program to community members Likelihood: Low Potential impact: Low Measures: EI and EE will ensure that the Program provides fair, inclusive and equitable access for communities, especially vulnerable groups, to the benefits of the Program. The guidelines and prioritization of vulnerable groups must be followed in accordance with technical-scientific information. A map of actors and beneficiaries will be prepared, determining potential causes that prevent or limit fair and equitable access to project benefits.
Principle 3: *Marginalized and Vulnerable Groups*	Yes	Risk: Exclusion for marginalized groups due to limitations in access to benefits due to different factors (transportation, schooling, work, home care) and appropriation of the program. Likelihood: Low Potential impact: Moderate Measures: Update map of actors with special interest in marginalized and vulnerable groups. Preparation of a diagnosis on the main causes that may affect the participation of these marginalized and vulnerable groups with a proposal for actions to avoid and/or mitigate these causes that must be integrated into Knowledge Management actions (Component 3) and a monitoring mechanism for their effectiveness.
Principle 4: *Human Rights*	No	Risk: Occurrence of human rights violations. Likelihood: Low Potential impact: Moderate/High Measures: The Program will adhere to national and international human rights standards, policies, rules and regulations. The EI, together with the EEs, will ensure that these regulations are applied throughout the execution of the Program by all institutions, subcontractors, consultants, and organizations that collaborate in the implementation of this initiative.
Principle 5: *Gender Equality and Women's Empowerment*	No	Risk: Participation conditional on household chores and childcare. Likelihood: Moderate Potential impact: Moderate Measures: The Program will determine together with the beneficiaries which days of the week are most feasible for the development of actions that involve the greater participation of women (e.g. Saturdays when children are not in classes) and will enable spaces with qualified people for care of boys and girls who travel with their mothers to Program activities.
Principle 6:	No	Risk: Project activities have limited compliance with national labor

Checklist of environmental and social principles	Further assessment required for compliance (Yes or No)	Potential impacts and risks – further assessment and management required for compliance
Core Labour Rights		standards (labor standards) and international labor standards due to limited knowledge of contractors, consultants and implementing organizations. Probability: Low Potential impact: High Measures: EI and EE will ensure that all actors involved in the implementation of the Program respect fundamental labor rights and national and international labor standards. It will be coordinated with the Ministry of Labor to develop awareness and knowledge sessions on labor standards in Panama to update the actors as part of the Knowledge Management actions (Component 3).
Principle 7: *Indigenous Peoples*	N/A	There are no indigenous communities registered in the Program area
Principle 8: *Involuntary Resettlement*	No	During the preparation phase of the Program and development of consultations with institutions and communities, no type of risk regarding involuntary resettlement of communities, towns or infrastructure of public interest in the program areas was determined.
Principle 9: *Protection of Natural Habitats*	No	No risks associated with disturbance or alteration of natural habitats are expected. Agroproductive activities (Component 1) will be developed in areas of agricultural vocation under a good practice approach (AbN) and the recovery, reforestation and/or enrichment actions of mangroves will not cause alteration of natural habitats. For the development of fishing activities, good fishing practices will also be incorporated, and alteration of natural habitats will not be permitted.
Principle 10: *Conservation of Biological Diversity*	Yes	Risk: Loss of biological diversity Probability: Low Potential impact: Moderate The use of agrochemicals continues, affecting biodiversity, water and soil: Measures: Good practices are promoted to reduce the use of agrochemicals for the production of bioinputs. Beneficiaries are trained to generate bioinputs at low costs. The division of herds and the rotation of livestock contributes to the decrease in the use of agorchemicals and their effects on biodiversity, water, and soil. The incorporation of technologies such as water harvesting systems and livestock aqueducts reduce the contamination of living water sources. Risk: Loss of aquatic fauna Probability: Low Potential Impact: Moderate Traditional and unregulated fishing gear affects biodiversity Measures: beneficiaries are promoted and trained on good fishing practices, which contributes to reducing the incidental capture of species of conservation value. Risks: Alteration of behavior of species (birds and cetaceans)

Checklist of environmental and social principles	Further assessment required for compliance (Yes or No)	Potential impacts and risks – further assessment and management required for compliance
		Probability: Low Potential Impact: Moderate The minimum observation distance is not respected. Mitigation: training actions are carried out for boat captains and tourism operators on good biodiversity observation practices and specifically on cetacean observation standards. Park rangers, police and ARAP personnel are trained to monitor compliance with regulations and the sanctions process.
Principle 11: *Climate Change*	No	Risk: Increased greenhouse gas emissions Probability: Low Potential impact: high Measures: The project will develop qualitative risk assessments on drivers of climate change and will determine the positive and negative impacts of carbon capture or sequestration generated by the implementation of project activities (e.g. conversion of traditional livestock systems to Silvopastoral Systems, reforestation or mangrove enrichment) and deforestation avoided.
Principle 12: *Pollution Prevention and Resource Efficiency*	No	Risk: Increase in contamination with agrochemicals and polluting solid waste (packaging). Probability: Low Potential impact: High Measures: The Program will promote the reduction of the use of agrochemicals to avoid contamination of soil and water, and its effects on public health and ecosystems. The project will promote management actions and use of bioinputs that contribute to reducing the use of agrochemicals for pest control and the change from chemical fertilizers to biological fertilizers through training as part of knowledge management actions. The Program will promote training for the controlled use of agrochemicals and their eventual process of reduction or transition to organic alternatives and will also train beneficiaries on the proper disposal of polluting waste (agrochemicals and their packaging, fuel and oils) and the proper management of waste caused by the transformation of fishery products (Component 3).
Principle 13: Public Health	No	No effects are expected on Public Health generated by the Project activities. The Program will promote national measures to prevent the spread of diseases that affect public health in the work area in accordance with recommendations from the Ministry of Health and the WHO.
Principle 14: Physical and Cultural Heritage	NA	There are no physical and/or cultural heritage structures registered in the Program area
Principle 15: Lands and Soil Conservation	No	Risk: Alteration and loss of soil due to the development of productive activities Likelihood: Low Potential impact: Low

Checklist of environmental and social principles	Further assessment required for compliance (Yes or No)	Potential impacts and risks – further assessment and management required for compliance
		Measures: The Program will promote soil conservation, recovery and management as part of good productive practices and Nature-Based Adaptation measures (Component 1). Good soil conservation and management practices will be applied to avoid compaction, loss due to erosion and degradation, affected areas will be identified in productive farms and soil recovery action will be generated through AbN actions with the use of bioinputs and other techniques in accordance with each case.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / program implementation.

Institutional arrangements, reviewed with consultation feedback, consist of three levels: strategic program monitoring, implementation, and execution.

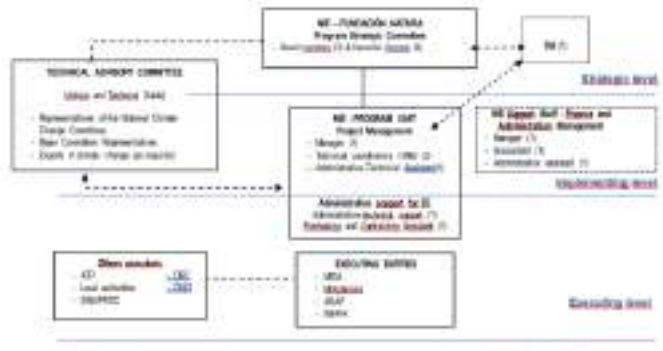
A1. Fundación Natura, as NIE, manages the project/program globally, overseeing all financial matters, monitoring, and reporting to the Adaptation Fund. **The Strategic Committee**, comprising Board of Trustees members and Fundación Natura's Executive Director, strategically monitors the program, ensuring compliance with contractual agreements. It approves the annual work plan and budget, reviewing semi-annual reports from the Program Unit and providing feedback. **The Technical Advisory Committee (TCA)**: Identified externally during consultations, it advises the Oversight Committee and Program Unit Management. This committee conducts technical reviews, offers guidance, and provides feedback for annual planning, procurement, and achieving program objectives. It includes representatives at both institutional and local levels:

- **Representatives of the National Climate Change Committee** (CNCC/ created in 2009): will participate under a representative delegation to provide technical advice and inter-institutional coordination. This committee comprises: Ministry of Environment (MiAmbiente), Ministry of Economy and Finance (MEF), Ministry of Agricultural Development (MIDA), Ministry of Social Development (MIDES), Aquatic Resources Authority of Panama (ARAP), Ministry of Health (MINSA), Panama Maritime Authority (AMP), Technological University of Panama (UTP), Authority of Tourism (ATP), National Civil Protection System (SINAPROC), Commission on Population, Environment and Development of the National Assembly. An additional 17 government institutions are also part of CNCC. The participation of the representatives of the CCNC in the TCA will be established according to the commitment of the institutions with the components of the program. The CCNC in plenary will be convened periodically as part of the M&E program.
  Note: To prevent conflicts between CNCC members and executing entities, if a CTA topic involves a CNCC member responsible for execution, that entity will abstain from participating in that session.
- **Basin Committees** (local level). These community structures will provide feedback on the implementation of the program to establish communication and implementation actions at the local level, as appropriate. They will participate in the CTA through a representative for each basin.

Program Unit (PU): Program Unit (PU): Located at Fundación Natura, the Program Unit is made up of two groups: a) technicians responsible for program implementation, providing constant follow-up to the executing entities and b) support personnel who provide administrative and financial assistance to the NIE. The technical group includes personnel who will provide support for the procurement of goods and services and their respective payments, hiring of personnel or consultants and their respective payments and in some cases support in the implementation of training actions that have been requested by the executing entities and the country's Designated Authority to ensure the timely delivery and use of resources (see Annex 1). The PU's responsibilities include managing annual budgets, periodic budget reviews, project work plans, external audits, progress reports, public calls for resource allocation, and supporting Executing Entities (EE). The PU also

approves disbursement requests, acquisitions, terms of reference, and provides guidance on project indicators and product monitoring. Additionally, it coordinates final evaluations and systematizes project experiences with EE coordinators' support. **Executing Entities (EE):** Four executing entities namely the Ministry of the Environment (MiAmbiente), the Ministry of Agricultural Development (MIDA), the Aquatic Resources Authority of Panama (ARAP) and Institute of Meteorology and Hydrology of Panama (IMHPA) will implement the project with the administrative support from Fundación Natura, following its quality management system. A collaboration Agreement will be sign among these entitites, defining how they will coordinate activities within the Program's implementation framework. The Executing Entities, through their contact person (CP) will coordinate and facilitate the internal monitoring meetings of their institution and will be responsible for the delivery of the quarterly reports to Fundación Natura, the preparation and execution of the work plans of according to the activities and geographical areas prioritized in the project, preparation and monitoring of the annual budgets of the subprojects and consultancies, preparation and execution of procurement plans and preparation of disbursement and payment requests in accordance with the procurement procedures of Fundación Natura, among others. The EEs must incorporate gender-sensitive elements in compliance with the gender and ESP policy of the Adaptation Fund and Fundación Natura. The EEs in coordination with the NIE will play a key role in knowledge management and information exchange with all stakeholders and the general public. **Designated Authority (DA):** represented by the Climate Change Directorate of the Ministry of Environment will provide guidance on opportunities for synergies and complementarity with other initiatives as well as the incorporation of the climate change adaptation approach in the products and results of the project. **Other executors:** It is probable that other executors will be incorporated that will be selected to develop specific products and activities -such as the National Civil Protection System (SINAPROC), Panama Tourism Authority, Panama Maritime Authority, local governments, and organizations- that will provide local experience and coordination and support in facilitating processes as rectors on specific issues such as tourism, among others.

Figure 11. Institutional arrangements for Program strategic monitoring, implementation, and execution



Monitoring:

The ESMP is aligned with the Project scale; taking into account that there are projects, which due to their nature will define the intervention polygons in the execution, the monitoring of the ESMP will be a continuous and dynamic process with the collaboration of the executing entities, local actors and Natura.

The progress reports that will be delivered quarterly to Natura by the EE and the reports that Natura presents to the Adaptation Fund will include information on the application and monitoring of the ESMP, including measures necessary to avoid, minimize, mitigate or manage environmental and social risks and the risks inherent to the activities that arise during the implementation of the project. In addition to the above, compliance with the

national and international regulations required for each product will be presented. It will also be presented to the Technical Committee of the Project. Natura will be responsible for supervision and final compliance.

MiAmbiente represented by the Department of Adaptation and Resilience, collaborates with IMHPA and regional offices in Coclé, Panamá Oeste, and Herrera provinces. The team includes a Project Coordinator, a technical-administrative assistant, and professionals from the Adaptation Department. MiAmbiente guides the project in mainstreaming climate change adaptation. **MIDA** will work through the Agro-Environmental and Climate Change Unit, the Livestock Directorate, the Agriculture Directorate and their regional offices. It will have two Project Coordinators and a technical-administrative assistant. **ARAP** will work on its products through the General Directorate for Research and Development, the General Directorate for Productivity Promotion and Technical Assistance and its regional offices. It will have two Project Coordinators and a technical-administrative assistant.

A2. Instruments for institutional arrangements. **Operations Manual:** will be prepared following the standardized procedures currently in place at Fundación Natura (as part of its Quality Management System) and applied to the program cycle, administrative, and financial support processes. **Communications protocol** includes the recognition, as appropriate, of each executing entity/partner at the institutional level, local and community levels. **The Memorandum of Understanding (MoU) / Collaboration Agreement** between Fundación Natura, government counterparts, and executing entities signifies a commitment to advancing climate change adaptation actions in Panama. The agreement reflects alignment with interagency planning strategies and goals, with organizations expressing readiness to provide technical guidance and support, dedicating necessary institutional resources for the proposed activities of the Adaptation Program. Each result of the program will be coordinated with a government counterpart, as shown in table 3.1. **Periodic informational events** will be held to present program progress, lessons learned, and necessary adjustments considering national and local circumstances, if necessary. It is expected to develop the operational plan for the execution of the program during the first semester and present it during the induction workshop (see program schedule). At the same time, the training of teamwork will be carried out, together with the training of the team responsible for the Program. The call for proposals is expected, and the acquisitions will be set to take place in the second half of the first year.

Table 3.1. Outputs and government counterparts responsible for implementation of the AF Program.

Outputs	Government counterparts
Component 1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature- based solutions.	
1.1 Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems.	MiAmbiente, MIDA, ARAP, ATP
1.2 Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services.	
1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.	
1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems.	
Component 2. Improve local and national capacity to face exposure to climate-related hazards and threats, through planning tools and risk reduction systems.	
2.1 Developed baseline studies on climate change with application in planning and environmental land management.	MiAmbiente, IMHPA

Outputs	Government counterparts
2.2 Strengthened the network of meteorological stations and sea level gauges, and the related Early Warning Systems (EWS).	
2.3 Developed a climate vulnerability and environmental risk modeling platform.	
2.4 Developed case studies of cost effectiveness of community projects.	
2.5 The monitoring and evaluation system for adaptation to climate change has been strengthened.	
Component 3. Strengthen the capacity of key actors and improve knowledge on climate adaptation and resilience at the local and national levels.	
3.1 Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented.	MiAmbiente, MIDA, ARAP, Natura
3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities.	
3.3 Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation and comprehensive project management.	
3.4 Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program to systematize experiences, lessons learned and their appropriation.	

Gender responsive considerations during implementation:

Fundación Natura is based on principles of equal opportunities that translate into non-discrimination based on sex, race, religion, age, marital status, political ideology or disability (physical disability). Natura will ensure that in the implementation of the program, the social, environmental and gender policy of the Adaptation Fund and Fundación Natura is a reference for decision-making and monitoring of activities.

Additionally, the National Gender and Climate Change Plan of Panama has been incorporated and will be complied with, which came into effect as of June 16, 2022. This Plan has also served as the basis for incorporating gender-sensitive issues into the program.

The executing entities must consider the specific needs of women to facilitate their equal participation in program activities and thereby contribute to the sustainable development of the area of influence considering the existing gaps between women and men. To achieve results in terms of reducing the existing gender gaps, the technical and administrative teams will be strengthened so that they have full knowledge of how or where to incorporate them and are familiar with tools that in practice can facilitate the incorporation of the gender approach throughout the project cycle as well as knowing and applying the policies of the Adaptation Fund and Fundación Natura.

Regarding the beneficiaries, activities to strengthen local capacities are contemplated, as well as the development of tools that allow participation with a gender perspective in project activities. There will be a gender specialist who will be responsible for including the tools throughout the implementation of the program as well as supervising compliance with gender policies.

Describe the measures for financial and project / program risk management.

Table 3.2. Measures for the mitigation of financial, environmental, information, social, legal, economic, and organizational risks (all `proposed activities)

Risk description	Risk Level	Management / Mitigation measures	Responsible person	Status
Financial				
That the financial management and procurement processes might be too complex, and delays in administrative processes impact program execution.		Fundación Natura has a robust administrative and financial control framework, with financial rules and regulations well established and proven for 30 years; it has mechanisms to ensure documentation of clearly defined roles and responsibilities for management, auditing, a governing body, and staff that ensures/demonstrates efficient and transparent control for payments/disbursements. FN will designate a program coordinator and a team of project officers with defined responsibilities to ensure highest standards and compliance with AF policies. FN has ample experience in management of diverse local and international-sourced funds, like the debt-for-nature swaps for the FIDECO fund, Darien Fund, Chagres Fund, as well as the first Adaptation Fund financed program in Panama, FOMIN / BID, Green Development Fund/GIZ, FAO, UNOPS – ICAT, Re Wild, and others.	Fundación Natura´s Executive Director, Program Coordinator, and Project Officers	Monthly report until Program completion
Costs of proposed activities may be higher than expected due to international conflicts and logistical constraints.		Program activities were designed considering current and average costs references for similar activities in the country. Through the annual work plan monitoring mechanisms, and the periodic reports, program management will ensure effective and efficient investment of budget.	Fundación Natura´s Executive Director, Program Coordinator, and Project Officers	Periodic and annual reports
That there might be incompetent or corrupted financial management on a local level that could impede project execution and raise questions about the integrity of the program.		Fundación Natura will ensure adherence to AF's operating policies and guidelines throughout the implementation of the program; and will keep effective follow up of its proven mechanism to receive and solve complaints -including a whistleblower protection policy. Fundación Natura has a Zero tolerance fraud policy, and complies with international regulations on money laundering, and against terrorism. Also on a regular basis the foundation meets the annual external audit by an independent firm with international recognition. In addition, there will be a review and assessment of competencies, resource management and administrative capacity of the executing entities.	Fundación Natura´s Executive Director, Program Coordinator, and Project Officers	Periodic and annual reports until Program completion
Environmental				
Climate variability affects the production cycle of the program (e.g., increased precipitation, prolonged dry season). The production calendar of plants for reforestation or planting is altered, the planting date changes and the planting survival rate decreases. Crop yields drop due to lack of water.		To avoid negative impacts on the projects' production cycle due to climate variability, all interventions will introduce the perspective of climate change. Project bidding documents and work plans must include the observation of cultivation dates (according to MIDA guidelines), the use of species resilient to such variabilities, the strategic location in the distribution of agricultural crops (considered in management plans), the use of pilot irrigation systems, among others.	Program Coordinator of the Fundación Natura Project Officer of Fundación Natura. Liaison person for government organizations	Monthly report until Program completion
That salt water intrusion may affect the success of proposed diversified agricultural activities, as well as activities to be promoted through the grants program (i.e.		. To avoid or address the potential risks of saltwater intrusion, the program has included the development of baseline studies (sea level rise model) applied to environmental planning and territorial ordering processes (municipal strategic plans and environmental territorial ordering plans), as well as a solid monitoring and evaluation system for adaptation to climate change. This information will make it possible to determine the	Program Coordinator of the Fundación Natura Project Officer of Fundación Natura.	Periodic and annual reports until Program completion

reforestation, sustainable community tourism).		appropriate measures to consider the possible intrusion of salt water in the execution of the proposed activities. In addition, the program has proposed nature-based solutions to address saltwater intrusion, such as mangrove forest restoration, transitional forest cover, windbreaks (in coastal areas), establishment of subsistence activities in safe sites, or sites with less risk of saltwater intrusion. Additionally, it is proposed to strengthen the management of 5 rural aqueducts and 20 multipurpose water harvesting systems that will reduce vulnerability and risk in those communities that already face problems of salinization of water extracted from wells, either due to its high demand, its inadequate management or increased exposure to marine intrusion.	Implementing partners and organizations Beneficiaries	
That the ´s activities generate adverse environmental impacts		The program does not include activities that could generate significant environmental impacts. However, the specifications and all bidding documents and works contracts will require that the relevant permits / authorizations / licenses be obtained from the incumbent authorities before starting any activity on the ground. The technical specifications will also ensure that all possible measures are taken to prevent any adverse environmental impacts. During implementation, it will also ensure that incumbent state institutions monitor compliance with national standards and specifications.	Program Coordinator of the Fundación Natura. Project Officer of Fundación Natura. Liaison person for government organizations	Monthly report until Program completion
Changes in the context (p.e., large infrastructure projects, changes in government policies) that may affect the relevance of the Program to achieve the environmental objectives.		Continuous and permanent coordination with government institutions will ensure that the NIE and implementing organizations are aware of any change in context in advance, thus allowing adjustments to be made in time to ensure successful implementation and achievement of the expected results. Periodic coordination meetings will be supervised to include in the analysis the context of the agenda that could pose a risk to the program.	Program Coordinator. Project Officer of Fundación Natura Implementing partners and organizations Beneficiaries	Monthly report until Program completion
Information				
That there is little information that prevents the Foundation from mitigating risks to which the program is exposed		A strategy to capture experiences and lessons learned will be implemented as soon as the program starts (as stipulated in the proposal). In addition, the program strategy should be monitored to promote the exchange of knowledge between the different components to ensure that: A. The overall Program work plan includes explicit and periodic milestones for sharing progress / constraints between program partners and project staff. B. operational / functional communication channels are established with existing local government instances, to present program progress and coordinate actions, as well as to learn about any change in context.	Fundación Natura´s Executive director and Program Coordinator. Project Officer of Fundación Natura. Implementing partners and Beneficiaries	Monthly report until Program completion
The most vulnerable population does not find out in time (or does not have the time or the conditions) to travel and attend the meetings scheduled by the Fundación Natura or the organizations implementing the program		Fundación Natura will ensure a budget line (as indicated in the budget of the proposed program) in the implementation of contracts of organizations, especially to provide travel stipends or similar means to the vulnerable population. In addition, announcements and radio programs will be made to inform in advance when meetings or other coordination take place in the program areas.	Fundación Natura´s Executive director and Program Coordinator. Project Officer of Fundación Natura implementing partners and organizations	Monthly report until program completion
Social				
That the local workforce lacks the necessary profiles to implement the program		To prevent knowledge and skills gaps from preventing the implementation of all program components, an induction for staff has been included at the beginning of program implementation. This includes local manpower at the technical and managerial level. The recruitment specifications will include the criteria that must be met in the knowledge and skills required for the implementation of the program. In addition, a series of courses will be offered to help create better local capacities to ensure continuous and successful results of the activities.	Fundación Natura´s Executive director and Program Coordinator Implementing partners and organizations	Monthly report until Program completion

That main actors or beneficiaries are likely not to continue in the program process in the short, medium and long term		The withdrawal or disengagement of key stakeholders and beneficiaries will be prevented once the program has ended; To this end, the program has included a series of mechanisms to improve the awareness and professional and technical skills of local people about the causes, impacts and effects of climate change. The behavior change will be induced throughout the implementation of the different projects, towards the preparation for climate change; the same thing that will generate better living conditions and higher income (thus creating the interest of maintaining such good practices). The monitoring and evaluation system will include appropriate means to track the likelihood / availability of beneficiaries to continue beyond the end of the program.	Fundación Natura´s Program Coordinator Project Officers Implementing partners and organizations	Biannual reports until the end of the Program
That the communities and beneficiaries of the program are indifferent to the problems that affect them in order to find solutions		Local communities and potential beneficiaries are open to the problems that currently affect them due to climate variability and change; therefore, there is little probability of a lack of empathy. To mitigate this situation during implementation, a baseline survey will be carried out on the level of awareness in the target population about the impacts and climate cause of the problem to be addressed by the program. Based on the survey data results, informational materials will be generated and distributed to begin filling the identified knowledge gaps. From the outset, meetings and workshops will be held and printed materials will be distributed to inform stakeholders of the objectives of the program.	Fundación Natura´s Program Coordinator Project Officers Implementing partners and organizations Beneficiaries	Quarterly reports until the end of the Program
Project activities (as capacity building activities, meetings, workshops, and overall interventions) may present a risk of contagion by COVID-19		Fundación Natura and all involved organizations and beneficiaries of the proposed program will abide by guidelines from the Ministry of Health regarding the pandemic; and all will closely monitor current and probable recurring pandemic. If deemed necessary, planning and execution of program activities will be adapted.	Fundación Natura´s Program Coordinator Project Officers Implementing partners	Quarterly reports until the end of the Program.
Legal				
That the lack of an environmental license to implement the program in any or all phases affects its performance		The need for environmental licenses or permits is not anticipated for proposed adaptation activities. However, if this risk arises (which would have a medium impact on the implementation of the program), the incumbent authorities - most of them responsible for ensuring compliance with the environmental license - have participated since the design of the program; and they will remain partners during implementation. Compliance with all licenses / permits (if required) will be a prerequisite for any disbursement in order to implement project activities (and will be mandatory in all terms of reference and contracts with implementing organizations).	Fundación Natura´s Program Coordinator Project Officers Implementing partners and organizations Beneficiaries	Quarterly reports until the end of the Program
Economic				
That the presence of land speculation arises derived from the improvement of farms; attracting buyers who could transform land use or reverse program progress and achievements		There could be a risk that once farms improve, buyers may be lured into bidding for land. To mitigate this, specific criteria for choosing beneficiaries will include, among other considerations, that they have strong ties to, and long-term residence at the site (eg, on-site socioeconomic and family connections). Likewise, as part of the projects to be developed, a special agreement (honorary) will be signed by Fundación Natura and the beneficiary, in which they undertake to continue with their effort to adequately manage the farm in the long term (including no sale of your farm at least in the short-medium term). Better preparedness to adapt to the impacts of climate change will help increase the income and socioeconomic status of beneficiaries (which, in turn, decreases the likelihood that they will want to sell their property).	Fundación Natura´s Program Coordinator Project Officers Implementing partners and organizations Beneficiaries	Quarterly reports until the end of the Program
Organizational				

That the implementing organizations lack the strengths, skills and institutional capacities in the administrative, financial and technical areas to implement the projects		To prevent or mitigate the risk of shortage of capacities to implement the projects, the implementing organizations will be selected on the basis (among other criteria) of their experience and capacities implementing similar / related projects. On the NIE side, Fundación Natura has long experience and built capacity in managing similar / related projects. In addition, once the program team is established, an induction will be developed to ensure a clear understanding of the expectations and objectives to be achieved with this adaptation program. Finally, Component 3 aims to build / enhance capacities and enhance professional and technical competencies in relation to the causes, effects and impacts of CC.	Fundación Natura´s Program Coordinator Project Officers Implementing partners and organizations Beneficiaries	Quarterly reports until the end of the Program

Table 3.3. Rating key – risk level description

3	MAJOR - Intolerable Risk Level. Immediate Action required to reduce risk to a broadly acceptable level and monitoring
2	MODERATE - Tolerable Risk Level. Action required to reduce risk to a lower level within a reasonable time period or close monitoring
1	MINOR - Inconsequential Risk Level. Periodic monitoring required.

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund

Based on the analysis of each principle of the Adaptation Fund, considering the Environmental and Social Safeguards of Fundación Natura and the FA, and also considering the methodologies and tools selected by the program for the development of the programmed activities, the following Plan was prepared. of Environmental, Social and Gender Management.

Table 3.4. Environmental and social risk management plan to comply with the E&S Policy and the Gender Policy of Adaptation Fund (for the proposed activities

Environmental and Social Principles	Identified Risks/ Impact	Possible Measures to Avoid, Minimize or Mitigate Environmental and Social Risks	Monitoring Indicators	Assessment of Significance	Period	Oversight Officer	Cost
Principle 1: Compliance with the law	Minor failures are committed in compliance with national rules and regulations (Including environmental and social impacts).	Description of the legal and regulatory framework for any project activity that may require prior permission (Contracts and ToR).	Number of formal and informal complaints about non-compliance with laws or regulations	Not required	Throughout the project life cycle	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 2: Access and equity	Limited capacity to guarantee fair and equitable access to the benefits of the Program to community members	Application of guidelines and prioritization of vulnerable groups according to technical/scientific information of the program. Update map of actors and beneficiaries (especially vulnerable groups) with determination of potential causes that impede or limit fair and equitable access to benefits and proposal of mitigation actions.	Number of beneficiaries who no longer continue in the program (disaggregated by gender). Percentage of	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program

			Vulnerable persons who received Training (disaggregated by gender).				
Principle 3: Marginalized and vulnerable groups	Exclusion for marginalized groups due to limitations in access to benefits due to different factors (transportation, schooling, work, home care) and appropriation of the program.	Update map of actors with special interest in marginalized and vulnerable groups. Preparation of a diagnosis of the main causes that may affect the participation of marginalized and vulnerable groups, with a proposal for actions to avoid and/or mitigate these causes and a mechanism for evaluating and monitoring their effectiveness.	Percentage of youth and women benefiting from the program	Yes	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 4: Human rights	Occurrence of human rights violations	Training of all actors related to the implementation of the Program and the beneficiaries of national and international human rights standards, policies, rules and regulations.	Number of formal and informal complaints related to human rights violations	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 5: Gender equality and women's empowerment	Participation conditional on household chores and childcare	Adjust schedules (days and hours) for greater participation of women. Care of boys and girls who travel with their mother by specialized personnel for full participation of the mother in the program activities	Percentage of women beneficiaries of the program	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 6: Core labour rights	Project activities have limited compliance with national labor standards and international labor standards due to limited knowledge of contractors, consultants and implementing organizations.	Awareness and training of labor standards actors with support from the Ministry of Labor.	Number of formal and informal complaints about non-compliance with labor standards.	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 7: Indigenous peoples	There are no indigenous communities in the Program area	No mitigation measures required	N/A	N/A	N/A	N/A	N/A
Principle 8:	Unidentified Risk	Although this risk was not determined in the	Number of families	Not required	Quarterly	Fundación	

Involuntary resettlement		consultation process, this aspect will be considered during the development of the program as a consequence of possible impacts of the effects of Climate Change that put the lives of program beneficiaries at risk or their means of subsistence.	requiring involuntary relocation.			Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 9: Protection of natural habitats	Unidentified Risk	Development of agroproductive activities in areas already dedicated to these activities. Incorporation of good productive practices (AbN) that avoid disturbance or alteration of natural habitats. Farm planning that incorporates farm natural capital management (conservation and restoration of natural habitats) as a tool to guide agricultural and productive actions (livestock and sustainable agriculture). Incorporation of good sustainable fishing practices that avoid disturbance of the mangrove and coastal marine areas.	Number of hectares under sustainable production	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 10: Conservation of biological diversity	Loss or Alteration of biological diversity	Implementation of good practices in agroproductive activities that promote the conservation of water, soil and biodiversity. Use of bioinputs and livestock rotation to reduce the use of agrochemicals. Promotion of the establishment of livestock aqueducts to reduce water pollution and loss of aquatic fauna. Conservation and recovery of riparian forests, planting trees on livestock farms and installation of living fences (local fauna corridors). Training in good fishing practices to reduce the bycatch of marine species and their release (for example, sea turtles, dolphins). Sterilization of tilapia fry and preventive management to prevent them from escaping to natural water sources. Promotion of responsible tourism with biodiversity (birds and cetaceans), respect for minimum observation distance, training of key personnel for the application of standards.).	Number of hectares deforested on beneficiary farms. Number of cases of successful or unsuccessful capture and release of valuable species due to bycatch. Number of beneficiaries trained in responsible tourism with biodiversity (disaggregated by gender).	Yes	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 11: Climate	Increased greenhouse gas emissions	Establishment of Silvopastoral and agroforestry Systems. Reforestation and/or mangrove enrichment.	Number of hectares deforested or	Not required	Annual	Fundación Natura,	

change		Protection and recovery of riparian forests. Raise awareness among beneficiaries to reduce deforestation and traditional practices of slashing and burning forests and stubble. Evaluation of loss/gain of forest cover and improved productive systems in the program area	recovered (reforested, enriched, conserved) in the program's impact area.			MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 12: Pollution prevention and resource efficiency	Increase in contamination with agrochemicals and polluting solid waste (packaging)	Promotion of the reduction in the use of agrochemicals and their replacement with biological components (bioinputs). Training of beneficiaries for controlled use of agrochemicals and preparation of bioinputs. Training on proper disposal of polluting waste. Pollution management plan and waste management (agrochemicals, fuel and oils, processing waste from fishery products).	Number of trained beneficiaries (disaggregated by gender). Number of beneficiaries who use bioinputs (disaggregated by gender)	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 13: Public health	Unidentified Risk	The Program will promote national measures to prevent the spread of diseases that affect public health in the work area in accordance with recommendations from the Ministry of Health and the WHO	Number of measures taken	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program
Principle 14: Physical and cultural heritage	There are no Physical and Natural Heritage sites	No mitigation measures required	N/A	N/A	N/A	N/A	N/A
Principle 15: Soil and land conservation	Alteration and loss of soil due to the development of productive activities with poor agricultural practices	The Program will promote soil conservation, recovery and management as part of good productive practices and Nature-Based Adaptation measures (Component 1). Good soil conservation and management practices will be applied to avoid compaction, loss due to erosion and degradation, affected areas will be identified (Before the project) in productive farms and soil recovery action will be generated through AbN actions with the use of bioinputs and other techniques in accordance with each case.	Number of trained beneficiaries (disaggregated by gender)	Not required	Quarterly	Fundación Natura, MiAMBIENTE, ARAP, MIDA, ATP	Included in the cost of the program

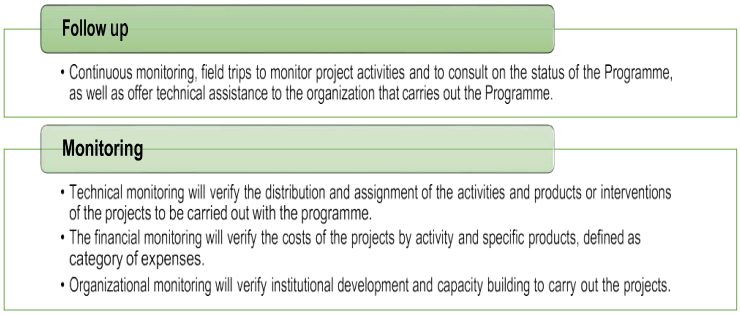
D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund

D1. Description of the Monitoring & Evaluation mechanisms

The monitoring and evaluation will be carried out in accordance with the provisions of the Fundación Natura's Quality Management System (NIE), following the Policies, guidelines and procedures of the Adaptation Fund. A Climate Change Manager will be responsible for monitoring the progress of the program and the staff of the program implementation unit. The midterm and final evaluation, the annual audits will be carried out by external consultants.

Monitoring and evaluation will take place at two (2) levels: Program Level (Climate Change Management) and Level of Organizations / implementing partners. Inter-institutional implementation mechanisms will also support the monitoring and evaluation system.

Figure 12 Monitoring and evaluation mechanism



Monitoring: Monitoring and evaluation of the program will be carried out in accordance with the provisions of the Fundación Natura's Quality Management System (NIE), following the policies and guidelines of the Adaptation Fund. The Monitoring Plan will be based on performance indicators, goals, and means of verification and will be prepared by the program implementation unit during the program planning stage. It will also establish the information system that will be used to evaluate the progress, performance, and impact of the program.

Program kick-off workshop and report: The Program kick-off workshop will be held within the first quarter from the first cash transfer to the program in 2 prioritized areas with al l stakeholders. In this workshop, the annual operating plan for the first year and the implementation and execution arrangements of the project will be defined. This activity also includes the development of facilitation training sessions with key project personnel and partners. A report will be prepared and shared with the stakeholders to formalize the coordination and agreements as a result of the workshop.

Quarterly reports: The executing agencies and entities will present technical and financial reports to Fundación Natura. The technical report will record the results of the technical execution achieved in the reported quarter. It will include the actions taken and the results, delays, justificatio ns and correction and rescheduling, where appropriate. The technical report must include graphics, photos, reports, brochures, bulletins, videos, meeting reports and other documents generated in the period and complement the information. The financial reports record the expenses incurred in the period, in accordance with the distribution of the approved budget and in accordance with the approved Annual Operating Plan.

Annual / Final Report: These reports present the performance according to the Annual Operating Plan, the limitations and challenges, the budget exec ution report, as well as the status and evaluation of the projects of each component of the program. Fundación Natura, as well as the NIE, will present

annual reports to the Adaptation Fund Program, in accordance with the requirements established by the Fund. An Annual Program Performance Review (PPR) is conducted to monitor progress made annually. The PRP includes, but is not limited to, reporting on the following: cumulative financial information since project inception, procurement data, risk assessment, compliance with environmental and social policies, compliance with gender policy, rating on progress by executing entity according to the work plan for the period, cumulative progress of the indicators, lessons learned and results monitoring according to the strategic results framework of the Adaptation Fund.
The information will be collected mainly through the quarterly reports of the executing entities, reports of field visits from Fundación Natura technicians as well as through the review of meeting memories aids. The annual RPPs will be submitted no later than two months after the end of the reporting year and the final report within six months after the end of the Program.
External audits: Annual audits will be carried out by an external auditing company of the financial statements related to the status of execution of the funds in accordance with the procedures established by the Fundación Natura's Quality Management System. The program audit report will be submitted within six (6) months after the program closes.
Final evaluation: It will be developed two months before the end of the program with an external (independent) consultancy. The evaluation will help to create knowledge, to determine if the design, timing, and funding of the program were appropriate for the achievement of the results, especially if they have contributed to the progress of the changes established as objectives. An important aspect of this final evaluation is that it will be observed if it is necessary to strengthen the products or results to achieve sustainability or maturity as the planned changes are achieved. It will present the lessons learned on the design, implementation, and management of the program. The result of the final evaluation will be delivered to the executing entities to ensure the continuity of the processes started with the program.
Field Visits / Monitoring Reports: The NIE will make periodic visits to field projects to monitor progress in its work plan, as well as for interviews / surveys of beneficiaries.

D2. Detailed Budget for the M&E Plan

Table 3.5. Monitoring and Evaluation Plan Budget

M&E activities	Responsible	Schedule / Frequency	Budget US$
Inception workshop and report	Natura, MiAmbiente, MIDA, ARAP and IMHPA	First quarter from the first cash transfer to the program in 2 prioritized areas. The report will be delivered no later than one (1) month after the workshop has been carried out.	14,000 (The travel expenses of Natura's personnel will be charged to the costs of the NIE and that of the Executing Entities in the execution costs)
Quarterly reports	Project Coordinators of Executing Entities (EE) and Natura	Quarterly. They will be submitted no later than 15 days after the end of the term.	Included in NIE costs. Nature personnel expenses Will be charged to the costs of the NIE
Annual program execution reports (PPR)	Natura and EE	PPRs will be submitted no later than two (2) months after the end of the reporting year.	5,000 Nature personnel expenses will be charged to the costs of the NIE Translation costs included.
Final report	Natura and EE	At the end of the program. It will be presented within six months after the end of the	4,400

		program.	
Meetings of the Strategic Committee of the Program and other actors	Natura, Project Coordinators of EE.	Biannual	Included in NIE costs
External final evaluation	External consultants, Project Coordinators of EE and Natura	Two (2) months before the completion of the program implementation	30,000
External Audits	Natura	Annually (according to Natura's quality management system). A final audited financial statement will be submitted within six (6) months after the end of the program	32,000 Included in NIE costs
Monitoring visits in implementation areas	Natura and EE	Quarterly	15,000 The travel expenses of Natura staff will be charged to the costs of the NIE. Travel costs and fuel for the tours are included. Tours are determined annually in the work plan.
Training workshop for key actors in the program on environmental and social safeguards and gender policy.	Natura	First quarter of implementation. It is reinforced in the second year.	10,000
Presentation of program results	Natura and EE	Two months after completion of implementation.	10,000
TOTAL			120,400

Note: Budgeted costs (USD) do not include salary costs or travel expenses for NIE staff. he M&E budget that is included in the execution costs is presented in table 3.10.

E. Include a results framework for the project proposal, including milestones, targets and indicators, including one or more core outcome indicators of the Adaptation Fund Results Framework, and in compliance with the Gender Policy of the Adaptation Fund

Program level results framework with objectives

Table 3.6. Program-level results framework with targets and indicators

Narrative summary	Indicators	Baseline	Target	Verification source	Risks and assumptions
Objective 1: Generate greater resilience at vulnerable ecosystems and essential livelihoods, through concrete actions for the restoration and climate-smart management of marine-coastal ecosystems; productive diversification; and innovation for adaptation					
Impact: Increase the resilience of the most vulnerable coastal communities and their livelihoods and improve the management of high-value ecosystems as blue carbon sinks in the Central Pacific of Panama					
Component 1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions. The activities programmed in Component 1 will generate benefits for a total of 2,249 people, of which 1,259 are men and 990 are women. This component also aims to generate new income through productive diversification and food security, benefiting at least 26 families; this through monitoring Product 1.1.1 and Product 1.1.4. Additionally, this component includes as a goal a total of 1,000 hectares to incorporate nature-based solutions to improve productive activities and generate socioeconomic and environmental benefits for the beneficiaries and the recovery of 150 hectares of key ecosystems. Indicator: 1. Percentage of beneficiary families with better income due to productive diversification and climate-smart production in target areas. This indicator will have disaggregated data on families headed by women. 2. Number of families with better access to water. 3. Number of ha. reforested, enriched or restored by type of ecosystem. Baseline: 1. TBD in targeted population households (income by source in targeted beneficiaries will be determined by a specific socioeconomic survey to be conducted as part of the baseline survey to be conducted as part of the terms of reference for implementing each product under outcome 1). 2. Cero families. 3. Cero hectares. Target: 1. At least 50% of beneficiary families show better income due to program intervention in the first 2 years. 2. 125 families to an average of 25 families per town. 3. 150 ha. recovered (enriched, reforested and / or restored). Verification source: 1. Monitoring and evaluation reports of changes in family income with respect to baseline. 2. Reports, memory aids, supplies delivery certificates, agreements with owners. 3. Execution reports, memory aid, photography, monitoring, and evaluation results. Risks and assumptions: 1. Livelihood management improvement projects will seek to generate greater participation in the number of families benefited with a focus on gender participation in the development of actions and benefits; the development of initiatives that promote the strengthening of producers' associations will be favored. 2. Rural aqueducts will be selected jointly with MINSA to benefit those with towns most affected by impacts of climate variability.					6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies. 6.2.1. Type of income sources for households generated under climate change scenario. 5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale) 8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled- up and/or replicated 8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated
1.1 Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems					
Product 1.1.1 At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based solutions (NbS) and technologies	Number of ha. with climate-smart production systems. Number of beneficiary families with productive systems more resilient to the climate change (Disaggregated by gender) Percentage of families with diversified production systems that contribute to their food security and livelihood resilience. Percentage of beneficiary	0 Ha. Total Families: 0 Men: 0 Women: 0 0%	1,000 ha under farm planning and incorporation of NbS Total Families: 60 families Total Beneficiaries: 300 Men: 160 Women: 140 70% (42 families)	Farm management plans, signed agreements, equipment delivery minutes, reports, memory aid, list of training processes. Farm management plans, production and ecosystem conservation agreements with landowners. Monitoring and evaluation reports of changes in family income with respect to baseline.	Livelihood management improvement projects will seek to generate greater participation in the number of families benefited with a focus on gender participation in the development of actions and benefits; the development of initiatives that promote the strengthening of producers' associations will be favored.

	families with better income due to productive diversification and climate-smart production (50% of 42 of families with diversified production systems)	0%	Total: 21 families 20% of households headed by women (4 families)		
Product 1.1.2 12 hives installed in 4 apiaries installed, including training of beneficiaries (beekeepers) and provision of equipment.	Number of beneficiaries disaggregated by gender	Total: 0 Men: 0 Women: 0	Total: 20 beneficiaries Men: 10 Women: 10		
Product 1.1.3 Installed four pilot oyster farming experiences, including training of beneficiaries and provision of equipment.	Number of beneficiaries disaggregated by gender	Total: 0 Men: 0 Women: 0	Total: 40 Men: 25 Women: 15		
Product 1.1.4. 17 comprehensive garden programs established (10 for vulnerable families and 7 in schools in six priority districts) with water harvesting systems and drip irrigation systems	Number of beneficiaries disaggregated by gender. Percentage of beneficiary families with better income due to productive diversification and climate-smart production (50% of 10 of families with diversified production systems) Number of beneficiaries (students) disaggregated by gender.	Total: 0 Men: 0 Women: 0 Total: 0% Total: Girls: Children:	Total: 50 Men: 30 Women: 20 Total: 50% (5 families) Total: 350 Girls: 175 Children: 175 TOTAL: 400		
Product 1.1.5. Installed 3 pilot tilapia farming project with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell	Number of beneficiaries disaggregated by gender.	Total: 0 Men: 0 Women: 0	Total: 200 Men: 120 Women: 80		The number of ha with climate-smart production systems comprise all the livelihoods that encompass planning processes and implementation of actions based on nature.
Product 1.1.6 Ten strengthened community tourism experiences including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience	Number of beneficiaries disaggregated by gender	Total: 0 Men: 0 Women: 0	Total: 259 Men: 169 Women: 90		
Product 1.1.7 12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4 projects to transform fishing products into value-added products with gender participation	Number of beneficiaries disaggregated by gender	Total: 0 Men: 0 Women: 0	Total: 120 Men: 80 Women: 40		
Product 1.1.8 10 pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology	Number of beneficiaries disaggregated by gender	Total: 0 Men: 0 Women: 0	Total: 100 Men: 60 Women: 40		
1.2 Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services					
Product 1.2.1 Ten business plans developed and implemented for products or services with the greatest potential in the program	Number of women and young people incorporated into production processes and their benefits.	Total: 0 Women: 0 Youth: 0	Total: 100 Women: 40 Young: 30	Consulting reports. Evaluation and monitoring reports.	The strategic investments determined in the business plans allow the development of the value chain, with gender inclusion, in the production process and benefits.
Product 1.2.2 Reports on strategic investments for the development of business plans and more specialized studies.	Increase in beneficiaries income as the value chains are developed (Disaggregated by gender)	Total: 0 Men: 0 Women: 0 Young: 0	Total: 50 Men: 30 Women: 20 Young: 20		

1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.					
Product 1.3.1 Management of five rural aqueducts in the program area strengthened.	Number of beneficiaries with better access to water (Disaggregated by gender) Percentage of families with better productive benefits thanks to water harvesting systems (Disaggregated by gender)	Total: 0 Men: 0 Women: 0 0 multipurpose water harvesting system. % families with better benefits in their productive systems due to better access to water. Men: 0 Women: 0	Total: 500 Men: 250 Women: 250 125 families to an average of 25 families per town. 20 multipurpose water harvesting systems installed.	Reports, memory aids, supplies delivery certificates, agreements with owners.	Rural aqueducts will be selected jointly with MINSA to benefit those with towns most affected by impacts of climate variability. As a strategy, agreements and climate-smart agriculture or livestock projects can be established with land tenants whose farms have water intakes or are located at a critical part of the river basin (the water source).
Product 1.3.2 20 multipurpose water harvesting systems installed using efficient and low-cost technologies	Number of people benefited by installation of multipurpose water harvesting systems.	Total: 0 Men: 0 Women: 0	Total: 60 Men: 30 Women: 30	Reports, memory aids, supplies delivery certificates, agreements with owners.	
1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems					
Product 1.4.1 An analysis of the loss / gain of forest cover in the program area through the use of geographic information systems.	Number of beneficiaries of the ecosystem recovery process (Disaggregated by gender). Number of ha. reforested, enriched or restored by type of ecosystem.	Total: 0 Men: 0 Women: 0	Total: 100 Men: 60 Women: 40	Execution reports, memory aid, photography, monitoring and evaluation results.	Number of families benefited is related to the output 1.1 indicator
Product 1.4.2 An action plan for the recovery of high-value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity.					
Product 1.4.3 Installed and operating at least two community nurseries in the program area		0 hectare.	150 ha. recovered (enriched, reforested and / or restored).		
Product 1.4.4 150 ha reforested, enriched and / or restored high value ecosystems.					
Component 2. Improved local and national capacity to deal with exposure to climate-related hazards and threats, through planning tools and risk reduction systems. Indicator: 1. No. of instruments developed to respond to climate-induced challenges. 2. Number of people (men and women) benefited from the development of new instruments and tools that contribute to the adaptation of their communities and livelihoods. Baseline: One instrument; 2. TBD in targeted communities will be determined by a specific survey to be conducted as part of the baseline analysis to be conducted at the beginning of the program implementation. Target: 1. 15 instruments developed. 2. 100,00 people Verification source: 1. Final reports or final products delivered and validated, plans validated by actors, memory aids, certificates of delivery of products to competent authorities. Risks and Assumptions: Target communities and local and national authorities keep their willingness to participate in the program.					1.1. No. of projects/programs that conduct and update risk and vulnerability assessments (by sector and scale). 7.1 No. of policies introduced or adjusted to address climate change risks (by sector) 7.2 No. of targeted development strategies with incorporated climate change priorities enforced. 1.2.1. Percentage of target population covered by adequate risk-reduction Systems. 8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled- up and/or replicated.
2.1 Developed baseline studies on climate change with application in planning and environmental land management					

Product 2.1.1 Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the program area Product 2.1.2 A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios. Product 2.1.3 Three Environmental Land Management plans for prioritized districts Product 2.1.4 Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories.	Number of instruments that contribute to adaptation and improvement of climate resilience developed. Number of people (men and women) benefited from the development of new instruments that contribute to the adaptation of their communities and livelihoods.	1 Instrument developed. It should be established at the beginning of the project. Men: 0 Women: 0	15 instruments developed. 100,000 people.	Final reports or final products delivered and validated. Plans validated by actors. Memory aids. Certificates of delivery of products to competent authorities.	There is an instrument developed for the Vulnerability Analysis of the Santa María River Hydrographic Basin.
2.2 Strengthened the network of meteorological stations and sea level gauges, and the related Early Warning Systems (EWS)					
Product 2.2.1 Improved meteorological stations of the hydrographic basins in the program area to generate complementary agroclimatic and hydrological information. Product 2.2.2 Acquired, installed and connected three sea level gauges to the national and global tsunami monitoring network. Product 2.2.3 The Early Warning System for floods, waves and tsunamis strengthened for the Central Pacific sector of Panama.	Percentage of stations in the program's area of influence strengthened. Number of people benefited from the strengthening of Early Warning Systems (Disaggregated by gender).	Total: 47 stations (35 meteorological and 12 hydrological). The baseline will be established according to the selected EWS. Men: 0 Women: 0	47 improved or enhanced stations.	Execution reports, equipment delivery minutes.	The 47 stations are operational and only need to incorporate equipment or enhance capacity to collect complementary meteorological and hydrological data.
2.3 Developed a climate vulnerability and environmental risk modeling platform					
Product 2.3.1 A climate vulnerability and environmental risk modeling platform installed and operating. Product 2.3.2 Protocol for information management and the use of the modeling platform for climate vulnerability and environmental risks.	Number of actors (sector and gender) that use the climate vulnerability and environmental risks modeling tool.	0 registered actor 0 registered sector	1000 actors from X sectors at the end of the program. The sectors and subsectors must be defined in the tool design process: Public Sector (sub- sectors); Private Sector (Academy, NGO, Banking, etc).	Stakeholder Registration Report	The tool must have a user registry with information that allows defining the sector, gender, nationality, place and date of birth so that it allows a broad analysis of the main users of the tool.
2.4 Prioritized adaptation measures implemented according to cost effectiveness analysis					
2.4 Developed case studies of cost effectiveness of community projects.	Number of case studies prepared.	0 case studies	10 elaborate case studies	Case study report with agreed format	There are no income/expense records to facilitate analysis. Projects and managers are selected to keep accounting records and other key information, training is provided.
2.5 The monitoring and evaluation system for adaptation to climate change has been strengthened					
2.5.1 Analysis on the implementation of the Monitoring and Evaluation System for Adaptation to Climate Change with evaluation of results and goals set, and with recommendations for improving the indicators, and monitoring and evaluation protocols.	Number and type of actions developed to improve the tool.	0 actions developed.	3 actions of 3 types (Managerial, Technical and Administrative).	Management reports, protocols, plans.	There is a tool and certain enabling conditions for its application that need to be improved.
Component 3. Strengthened the capacity of key actors and improved knowledge on climate adaptation and resilience at the local and national levels. Indicator: 1. Number of trained people disaggregated by gender. 2. Number of improved or developed tools that facilitate knowledge management. 3. Number of systematized and shared experiences through different media. Baseline: 1. Cero people trained. 2. Target: 1. Total trained 400 (200 men and 200 women) and 1000 stakeholders (500 men, 500 women) from different sectors strengthen their capacities. 2. Developed 2 tools. 3. Systematized 5 experiences.					3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders. 3.1.1 No. of news outlets in the local press and media that have

					covered the topic.
Verification source: Training reports, workshops, event reports, publications, attendance lists. Risks and assumptions: The adaptation platform facilitates the online training process. The training workshops are developed in large sites with security measures against COVID					
3.1 Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented.					
Product 3.1.1 Stakeholder training plan on climate change and ecosystem-based adaptation. Product 3.1.2 Design of training modules with content validated by the Ministry of the Environment. Product 3.1.3 Evaluation reports of each training process developed.	Number of trained people disaggregated by gender.	Total Trained: 0 Men: 0 Women: 0	Some 1,000 stakeholders from different sectors strengthen their capacities.	Field training reports. Online training reports. Memory aid, attendance list and evaluations.	The adaptation platform facilitates the online training process.
3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities					
Product 3.2.1 Action Plan for the integration of the gender perspective into the project. Product 3.2.2 Implementation reports and memories of training workshops	Number of trained people disaggregated by gender.	Total Trained: 0 Men: 0 Women: 0	Total Trained: 300 Men: 150 Women: 150	Field training reports. Online training reports. Memory aid, attendance list and evaluations. stablished agreements.	Other gender indicators established in Panama's gender and climate change plan can be incorporated (Annex 12)
3.3 Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation and comprehensive project management					
Product 3.3.1 Special modules designed and implemented for the implementation of adaptation strategies and plans at the local scale and project management for 200 beneficiaries. Product 3.3.2 Evaluation of capacity building processes. Product 3.3.3 At least 15 proposals for adaptation projects of CBOs and municipalities prepared. Product 3.3.4 Intermunicipal agreements established for the development of joint adaptation actions.	Number of trained people disaggregated by gender. Number of adaptation project proposals prepared by CBO and Municipalities. Number of inter-municipal agreements established.	Total Trained: 0 Men: 0 Women: 0 Number of proposals prepared: 0 Number of inter-municipal agreements established: 0	Total Trained: 200 Males: 100 Women: 100 Number of proposals prepared: 15 Number of inter-municipal agreements established: 5	Field training reports. Online training reports. Memory aid, attendance list and evaluations. Established agreements.	The adaptation platform facilitates the online training process. The training workshops are developed in large sites with security measures against COVID-19.
3.4 Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program to systematize experiences, lessons learned and their appropriation					
Product 3.4.1 Comprehensive knowledge management program designed and in operation with established goals and indicators that facilitate its evaluation. 3.4.2 Adaptation Platform of the Ministry of Environment strengthened and operating. 3.4.3 Systematization of experiences, exchanges and lessons learned from projects carried out in the program.	Number of trained people disaggregated by gender. Number of improved or developed tools that facilitate knowledge management. Number of actors (men and women) benefited from experiences exchange actions. Number of systematized and shared experiences through different media.	Total Trained: 0 Men: 0 Women: 0 Developed tools: 0 Exchange Experiences Total Participants: 0 Men: 0 Women: 0 Systematized Experiences: 0	Some 1,000 stakeholders from different sectors strengthen their capacities. Developed tools: 2 Exchange experiences Total participants: 200 Male: 100 Women: 100 Systematized experiences: 5	Training reports, workshops, event reports, publications, designed tools, attendance lists.	The indicator of 1,000 is related to the indicator of output 3.1
3.5 Ensured the communication actions of the program that provide information to its stakeholders.					
3.5.1 Design of tools to facilitate communication actions of the program.	Number of improved or developed tools that facilitate knowledge management	Developed tools: 0	Developed tools: 1	Report	N/A
3.5.2 Dissemination of program results, experiences, lessons learned, campaigns and opportunities to obtain benefits (training).	Number of people sensitized disaggregated by gender.	Total people sensitized.	Target: 50,000 peoples sensitized.	Press releases, awareness and/or	The scope of beneficiaries to media and social networks is

		Men: 0 Women: 0		education campaigns, notes and videos for social networks, infographics, among others.	limited

The Annex 12 contains a series of complementary gender indicators taken from the National Gender and Climate Change Plan and adapted to be implemented by the Program. In this way, the program will also contribute to the implementation of the gender indicators of this National Plan and will strengthen the monitoring and evaluation actions of gender participation in the program.

F. Demonstrate how the project / program aligns with the Results Framework of the Adaptation Fund. Alignment of the results framework of the program with the results framework of the Adaptation Fund

Table 3.7.A. Program aims AF's Results Framework

Impact: Increased resiliency at the community, national, and regional levels to climate variability and change	Core Indicator: 108,345 personas		**Total (direct + indirect beneficiaries)**	**Direct beneficiaries supported by the project: 108,345 personas**	**ndirect beneficiaries supported by the project: 114,655 habitantes**
		Total			
		% of female beneficiaries	50%	40%	10%
		% of Youth beneficiaries	20%	15%	5%
Outcome 1: Reduced exposure to climate-related hazards and threats	ndicator 1: Relevant threat and hazard nformation generated and disseminated o stakeholders on a timely basis.	Number of targeted stakeholders		Hazards information generated and disseminated	Overall effectiveness
		Total			
		% of female beneficiaries	20%	15%	5%

AF Outcomes	**AF out Put**	**Program Proposal**
Outcome 1: Reduced exposure to climate-related hazards and threats	Output 1.1: Risk and vulnerability assessments conducted and updated. Output 1.2: Targeted population groups covered by adequate risk reduction systems.	The results of risk and vulnerability analysis are considered to guide adaptation actions in communities and their livelihoods. The program supports farmers and fishermen with productive diversification and nature-based solutions. 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based technologies and solutions. The program promotes the strengthening of value chains, markets and product marketing.
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	Output 2.1: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather events. Output 2.2: Increased readiness and capacity of national and sub-national entities to directly access and program adaptation finance.	Component 3 is focused on strengthening the capacity of key actors in ecosystem-based adaptation for their communities and livelihoods. It includes strengthening of the Adaptation portal that will allow the dissemination and sharing of results, tools, experiences and lessons learned with stakeholders.
Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities. Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.	1,000 stakeholders from different sectors strengthen their capacities in ecosystem-based adaptation. 300 people trained in integration of the gender perspective. (50% women). 200 people trained in Special modules designed and implemented for the implementation of adaptation strategies.
Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	Component 2 includes the development of planning tools and risk reduction systems that will enable different sectors to address exposure to climate hazards and threats.
Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	Ecosystem services and natural resource assets will be maintained or improved under climate change and variability-induced stress thanks to the agricultural best practices implemented y and reforestation and restoration actions of key ecosystems (150 ha reforested, enriched and / or restored high value ecosystems).
Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	Component 1 is oriented towards the promotion of productive diversification and the incorporation of nature-based solutions to improve the resilience of livelihoods. 300 families benefited from productive diversification and adaptation of their livelihoods under climate-smart adaptation. 1,000 ha. under farm planning and incorporation of NbS.
Outcome 7: Improved policies and regulations that promote and enforce resilience measures	Output 7: Improved integration of climate-resilience strategies into country development plans	Three Environmental Land Management plans for prioritized districts

AF Outcomes	AF out Put	Program Proposal
Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	Mechanisms that promote innovative adaptation practices, tools and technologies. Establishment of a grants program for adaptation actions aimed at CBOs and Municipalities A microfinance scheme for the coastal-marine sector with considerations of adaptation and climate risk.

Table 3.7.B Alignment of the results framework of the program with the results framework of the Adaptation Fund

Program outcomes	Program outcome indicators	Program outputs	Proposed activities	Adaptation Fund Output	Adaptation Fund Output Indicator	Grant amount (USD)
Component 1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions						
1.1 Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems.	Number of beneficiary families with productive systems more resilient to the climate change (disaggregated by gender). Percentage of families with diversified production systems that contribute to their food security and livelihood resilience. Number of ha. with climate-smart production systems. Percentage of beneficiary families with better income due to productive diversification and climate-smart production.	At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based solutions (NbS) and technologies.	Prepare criteria for the selection of beneficiaries. Prepare Terms of Reference and Contracting services. Beneficiaries Training and Elaboration of farm diagnostic. Development of a farm management plan with a producer family. Sign agreements with beneficiaries. Implementation of nature-based solutions.	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability.	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies. 6.2.1. Type of income sources for households generated under climate change scenario	750,000
		Installed at least 4 apiaries and about 12 hives, including training of beneficiaries (beekeepers) and provision of equipment.	Prepare criteria for the selection of beneficiaries. Prepare Terms of Reference and Contracting services. Beneficiaries training and Purchase of equipment. Installation and management of hives. Harvest and processing of honey.			160,000
		Installed at least four pilot oyster farming experiences, including training of beneficiaries and provision of equipment.	Prepare criteria for the selection of beneficiaries. Prepare Terms of Reference and Contracting services. Beneficiaries training. Purchase of equipment and establishment of facilities. Management and harvest of crops.			220,000
		17 comprehensive garden programs established (10 for vulnerable families and 7 in schools in five priority districts) with water harvesting systems and drip irrigation systems.	Prepare criteria for the selection of beneficiaries. Prepare Terms of Reference and Contracting services. Beneficiaries training. Installation and management of integral garden. Installation, management and maintenance of drip irrigation system.			300,000
		Installed 3 pilot tilapia farming project with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell	Prepare criteria for the selection of beneficiaries. Prepare Terms of Reference and Contracting services. Beneficiaries training. Installation, management and maintenance of aquaponics system. Harvest and processing of tilapia cultivation.			200,000
		Ten strengthened community tourism experiences including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience	Prepare criteria for the selection of beneficiaries. Prepare Terms of Reference and Contracting services. Beneficiaries training. Preparation and validation of guidelines to reduce climate change-related risk of community tourism operations. Diagnosis to strengthen selected community tourism experiences. Implementation of actions. Monitoring, evaluation, and systematization of experiences.			225,000
		12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4	Prepare criteria for the selection of beneficiaries. Prepare Terms of Reference and Contracting services. Beneficiaries training and Diagnosis on selected projects. Implementation of actions with nature-based solutions and application of technologies. Systematization of			600,000

		projects to transform fishing products into value-added products with gender participation.	experiences.			
		10 pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology	Prepare Terms of Reference and contract services. Implementation of efficient irrigation projects for vulnerable families and Beneficiary training and system monitoring			125,000
1.2 Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services	No of women and young people incorporated into production processes and their benefits.	Ten business plans developed and implemented for products or services with the greatest potential in the program.	Establishment of criteria for the selection of products and services with the greatest development and market potential. Preparation and validation of business plans. Socialization of business plans with beneficiaries.	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability.	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies.	200,000
	Increase in family income as the value chains are developed.	Reports on strategic investments for the development of business plans and more specialized studies.	Determination of strategic investments for the development of the value chain with the incorporation of gender in its development and benefits. Systematization of experiences.	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability.	6.2.1. Type of income sources for households generated under climate change scenario	350,000
1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.	Number of families with better access to water (disaggregated by gender). Percentage of multipurpose water harvesting system established. Percentage of families with better productive benefits thanks to water harvesting systems.	Management of five rural aqueducts in the program area strengthened.	Establishment of criteria and selection of aqueducts in coordination with MINSA. Preparation of a plan to strengthen JAAR and rural aqueducts. Implementation of actions in the field to improve rural aqueducts and their surroundings. Sign agreements with owners to improve the conditions of water intakes and micro-basin.	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability.	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies. 6.2.1. Type of income sources for households generated under climate change scenario	200,000
		20 multipurpose water harvesting systems installed using efficient and low-cost technologies.	Prepare criteria for the selection of beneficiaries considering gender and productive sectors. Prepare Terms of Reference and Contracting services Purchase of supplies and equipment. Training beneficiaries for the establishment, management and maintenance of the irrigation system. Establishment of irrigation systems with the use of efficient and low-cost technologies. Improvement of the production system with the incorporation of solutions based on nature or better production practices. Improvement of capacity in control and management of pests, organic fertilizers and others.			400,000
1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems	Number of ha. reforested, enriched or restored by type of ecosystem. Number of families benefited in the process of ecosystem recovery (disaggregated by gender)..	An analysis of the loss / gain of forest cover in the program area through the use of geographic information systems.	Preparation of Terms of Reference. Development of loss / gain analysis of forest cover from interpretation of satellite images with GIS application In field verification of results and Validation of information.	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	85,000
		An action plan for the recovery of high-value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity.	Preparation of Terms of Reference. Preparation of a proposed recovery plan for valuable ecosystems with identification of sites and owners Field verification and synergies with other program efforts Validation of the plan with stakeholders.			75,000
		Installed and operating at least two community nurseries in the program area.	Establishment of criteria for selection of site and beneficiaries of the nursery. Preparation of Terms of Reference. Acquisition of space, equipment and supplies to establish the nursery and comply with established standards. Comprehensive training in the management, maintenance of nurseries (selection and maintenance of seeds, pest management, organic fertilizer, marketing, etc.).			75,000

		150 ha of high value ecosystems reforested, enriched and / or restored.	Preparation of Terms of Reference with incorporation of local labor Community training and signing of agreements with owners. Development reforestation, enrichment and / or restoration of valuable ecosystems. Monitoring and maintenance of plantations.			385.000
Component 2. Improved local and national capacity to deal with exposure to climate-related hazards and threats, through planning tools and risk reduction systems						
2.1 Developed baseline studies on climate change with application in planning and environmental land management	Number of instruments that contribute to adaptation and improvement of climate resilience developed. Number of people (men and women) benefited from the development of new instruments that contribute to the adaptation of their communities and livelihoods.	Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the program area	Preparation of Terms of Reference Selection of services for the development of studies Physical, environmental, socioeconomic and climatic diagnosis of the basin. Development of a proposal for a Vulnerability Plan and recommendations for adaptation and climate resilience Tool validation with key stakeholders Preparation of final document validated with actors.	Output 1.1: Risk and vulnerability assessments conducted and updated	1.1. No. of projects/programs that conduct and update risk and vulnerability assessments (by sector and scale)	550,000
		A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios.	Development of a methodology for the definition of parameters / criteria taking Climate Central as a reference and based on the actions carried out at the national level. Define the monitoring points for modeling sea level rise in the Central Pacific of Panama. Development of field training days for supervision and data validation. Systematization and data processing Preparation of maps with collected information.			200,000
		Three Environmental Land Management plans for prioritized districts.	Preparation of Terms of Reference. Development of socioeconomic, physical and environmental diagnosis (CC). Development of stakeholder consultation workshops. Analysis of development scenarios and projections and risk analysis. Proposal for Environmental Land Management plan. Validation Workshop with key stakeholders Final proposal of Environmental Land Management plans validated for each prioritized district.	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1 No. of policies introduced or adjusted to address climate change risks (by sector) No. of targeted development strategies with incorporated climate change priorities enforced	300,000
		Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories.	Coordination with the Ministry of Economy and Finance and selected municipalities. Adjustment in the document design (plan) to incorporate environmental and climate information. Preparation of a proposal for strategic plans for municipal development. Development of consultation and validation workshops. Final documents with validated Strategic Municipal Development Plans.			2 00,000
2.2 Strengthened the network of meteorological stations and sea level gauges, and the related Early Warning Systems (EWS)	Percentage of stations in the program's area of influence strengthened. Number of people benefited from the strengthening of Early Warning Systems (disaggregated by gender).	Improved meteorological stations of the hydrographic basins in the program area to generate complementary agroclimatic and hydrological information.	Definition and validation of met stations and improvement needs (climatic and hydrological information). Determination of potential suppliers in accordance with operating manuals. Quotation and evaluation of proposals Acquisition and installation of equipment, maintenance and development of tests. Systematization and analysis of new agroclimatic and hydrological information and its application.	Output 1.2: Targeted population groups covered by adequate risk reduction systems	1.2.1. Percentage of target population covered by adequate risk-reduction systems	200,000
		Acquired, installed and connected three sea level gauges to the national and global tsunami monitoring network and maintenance network.	Establishment of international specifications for the acquisition, installation and maintenance of sea level gauges. Validation of sites for the installation of tide gauges. Purchase and installation of sea level gauges. Calibration and test development. Strengthening of capacities for the systematization and analysis of data.			200,000
		The Early Warning System for floods, waves and tsunamis strengthened for the Central Pacific sector of Panama.	Diagnosis of main actions to strengthen EWS in the Central Pacific of Panama. Preparation of Terms of Reference. Development of actions and capacity building of stakeholders. Improvement of EWS signaling			175,000

2.3 Developed a climate vulnerability and environmental risk modeling platform	Number of actors (sector and gender) that use the climate vulnerability and environmental risks modeling tool.	A climate vulnerability and environmental risk modeling platform installed and operating.	Preparation of Terms of Reference that define scope and scheme for platform development. Contracting of services for the development (programming) of the platform based on climate information generated (vulnerability, risks, projections of sea level rise). Development of algorithms and tests of the platform. Validation with actors.	Output 1.1: Risk and vulnerability assessments conducted and updated Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	1.1. No. of rojects/programs that conduct and update risk and vulnerability assessments (by sector and scale) 8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	215,000
		Protocol for information management and the use of the modeling platform for climate vulnerability and environmental risks.	Development of a protocol proposal for information management and access to the platform.Validation with key stakeholders. Putting the platform online and Socialization of the tool with key actors.			10,000
2.4 Developed case studies of cost effectiveness of community projects	Number of case studies prepared.	Ten Cost/effectiveness analysis of community projects developed by the AF, with experiences and lessons learned identified and systematized.	Preparation of Terms of Reference. Validation of formats for case studies. Selection of community projects, preparation of tools for data collection, training of producers and preparation of case studies.	Output 1.1: Risk and vulnerability assessments conducted and updated	1.1. No. of projects/programs that conduct and update risk and vulnerability assessments (by sector and scale)	275,000
2.5 The monitoring and evaluation system for adaptation to climate change has been strengthened.	Number and type of actions developed to improve the tool.	Analysis on the implementation of the Monitoring and Evaluation System for Adaptation to Climate Change with evaluation of results and goals set, and with recommendations for improving the indicators, and monitoring and evaluation protocols.	Comprehensive diagnosis of management and goals fulfillment through the monitoring and evaluation system for adaptation to climate change. Proposal and validation of actions for its integral management (Managerial, Administrative, Technical, Products and Results) Implementation of actions for improved management (including indicators and monitoring and evaluation protocols).	Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	225,000
Component 3. Strengthened the capacity of key actors and improved knowledge on climate adaptation and resilience at the local and national levels.						
3.1 Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented.	Number of trained people disaggregated by gender.	Stakeholder training plan on climate change and ecosystem-based adaptation.	Preparation of Terms of Reference Design of the training plan proposal Consultation and validation with key stakeholders Training plan validated with monitoring and evaluation indicators.	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge.	75,000
		Design of training modules with content validated by the Ministry of the Environment.	Preparation of Terms of Reference. Design of modules and contents according to the training plan. Development of evaluation instruments Validation of modules (contents) and validation instruments with MiAmbiente and other key actors.		3.2.1 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	100,000
		Evaluation reports of each training process developed.	Monitoring and evaluation of training processes. Preparation of training reports and evaluation results.			275,000
3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities	Number of trained people disaggregated by gender.	Action plan for the integration of the gender perspective into the project.	Development of surveys and field interviews with stakeholders Development of consultation and validation workshops Action plan for the integration of the gender perspective into the project	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	10,000
		Implementation reports and memories of gender capacity building workshops	Reports on the implementation of the gender action plan Reports of gender capacity building workshops (institutions and beneficiaries).	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate	3.2.1 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant	40,000

				knowledge and learning	stakeholders	
3.3 Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation and comprehensive project management	Number of trained people disaggregated by gender. Number of adaptation project proposals prepared by CBO and Municipalities. Number of inter-municipal agreements established.	Special modules designed and implemented for the implementation of adaptation strategies and plans at the local scale and project management for 200 beneficiaries.	Preparation of Terms of Reference Design of modules and contents according to the training plan (local implementation strategies and adaptation plans and project management). Development of evaluation instruments. Validation of modules (contents) and validation instruments with MiAmbiente and other key actors.	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge. 3.2.1 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	100,000
		Evaluation of capacity building processes.	Monitoring and evaluation of training processes. Preparation of training reports and evaluation results.			10,000
		At least 15 proposals for adaptation projects of CBOs and municipalities prepared.	Development of proposal preparation workshops Monitoring and support for the development of project ideas.			25,000
		Intermunicipal agreements established for the development of joint adaptation actions.	Identification of topics and areas of interest between municipalities Facilitation of the process for establishing inter-municipal agreements Facilitation of processes for the development of joint projects (proposed preparation).			15,000
3.4 Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program to systematize experiences, lessons learned and their appropriation	Number of trained people disaggregated by gender. Number of improved or developed tools that facilitate knowledge management. Number of actors (men and women) benefited from experiences exchange actions. Number of systematized and shared experiences through different media.	Comprehensive knowledge management program designed and in operation with established goals and indicators that facilitate its evaluation.	Preparation of Terms of Reference. Design of a proposal for a Comprehensive Knowledge Management Program with evaluation goals and indicators. Proposal validation. Implementation, monitoring and evaluation of the Comprehensive Knowledge Management Program.	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge. 3.2.1 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	175,000
		Adaptation Platform established in the Ministry of Environment strengthened and operational.	Strengthening of the MiAmbiente Adaptation Platform for the Program's needs (training, communication, security, etc.) Hosting of Adaptation Platform and enabling easy access for users.			41,977
		Systematization of experiences, exchanges and lessons learned from projects carried out in the program.	Preparation of Terms of Reference Selection of best experiences and hiring of services to systematize them Development of experiences exchange actions Facilitation of communication of progress, results, experience and lessons learned generated by the Adaptation Program.			350,000
3.5 Ensured the communication actions of the program that provide information to its stakeholders.		Design of tools to facilitate communication actions of the program.	Preparation of Terms of Reference Consultant selection to develop communication plan. Program communication plan.	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	15,000
	Number of stakeholders reached (disaggregated by gender) in communication actions. Number of project communications disseminated by means (social networks, web page and press) and their impact on the public disaggregated by gender.	Dissemination of program results, experiences, lessons learned, campaigns and opportunities to obtain benefits (training).	Preparation of Terms of Reference Selection of communications specialist consultant. Preparation of communication report and impact monitoring in the different media.	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge. 3.2.1 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	285,000

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

Table 3.8. Detailed budget with budget notes

Output No.	Description	Budget notes / Activities	Year 1	Year 2	Year 3	Year 4	Total
1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions: US$4,350,000							
Output 1.1	Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems	At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based solutions (NbS) and technologies.	220,000	275,000	255,000	0	750,000
		12 hives installed in 4 apiaries installed, including the training of beneficiaries (beekeepers) and the provision of equipment	60,000	75,000	25,000	0	160,000
		Installed four pilot oyster farming experiences, including training of beneficiaries and provision of equipment.	120,000	60,000	40,000	0	220,000
		17 comprehensive garden programs established (10 for vulnerable families and 7 in schools in five priority districts) with water harvesting systems and drip irrigation systems.	150,000	105,000	45,000	0	300,000
		Installed 3 pilot tilapia farming project with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell	80,000	80,000	40,000	0	200,000
		Ten strengthened community tourism experiences including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience	25,000	100,000	100,000	0	225,000
		12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4 projects to transform fishing products into value-added products with gender participation	100,000	250,000	250,000	0	600,000
		10 pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology	25,000	50,000	50,000		125,000
		Total	780,000	995,000	805,000	0	2,580,000
Output 1.2	Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services	Ten business plans developed and implemented for products or services with the greatest potential in the program.	0.00	130,000	70,000	0	200,000
		Reports on strategic investments for the development of business plans and more specialized studies.	0.00	200,000	150,000	0	350,000
		Total	0.00	330,000	220,000	0	550,000
Output 1.3	Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.	Management of five rural aqueducts in the program area strengthened.	25,000	100,000	75,000	0	200,000
		20 multipurpose water harvesting systems installed using efficient and low-cost technologies.	25,000	200,000	175,000	0	400,000
		Total	50,000	300,000	250,000	0	600,000
Output 1.4	Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems	An analysis of the loss / gain of forest cover in the program area through the use of geographic information systems.	85,000	0	0	0	85,000
		An action plan for the recovery of high-value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity.	50,000	25,000	0	0	75,000
		Installed and operating at least two community nurseries in the program área.	40,000	20,000	15,000	0	75,000
		150 ha of high value ecosystems reforested, enriched and / or restored.	100,000	200,000	85,000	0	385.000
		Total	275,000	245,000	100,000	0	620,000
		TOTAL	1,105,000	1,870,000	1,375,000	0	4,350,000
2. Improved local and national capacity to deal with exposure to climate-related hazards and threats, through planning tools and risk reduction systems: US$2,550,000							
Output 2.1	Developed baseline studies on climate change with application in planning and environmental land management	Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the program area	250,000	200,000	100,000	0	550,000
		A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios.	140,000	60,000	0	0	200,000
		Three Environmental Land Management plans for prioritized districts.	150,000	150,000	0	0	300,000
		Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories.	50,000	110,000	40,000	0	200,000
		Total	590,000	520,000	140,000	0	1,250,000
Output 2.2	Strengthened the network of meteorological stations and sea level gauges, and the related Early Warning	Improved meteorological stations of the hydrographic basins in the program area to generate complementary agroclimatic and hydrological information.	75,000	125,000	0		200,000
		Acquired, installed and connected three sea level gauges to the national and global tsunami monitoring and maintenance network.	125,000	50,000	25,000	0	200,000

	Systems (EWS)	The Early Warning System for floods, waves and tsunamis strengthened for the Central Pacific sector of Panama.	0	100,000	75,000	0	175,000
		Total	200,000	275,000	100,000	0	575,000
Output 2.3	Developed a climate vulnerability and environmental risk modeling platform	A climate vulnerability and environmental risk modeling platform installed and operating.	65,000	125,000	25,000		215,000
		Protocol for information management and the use of the modeling platform for climate vulnerability and environmental risks.	0	10,000	0	0	10,000
		Total	65,000	135,000	25,000	0	225,000
Output 2.4	2.4 Developed case studies of cost effectiveness of community projects.	Ten Cost/effectiveness analysis of community projects developed by the AF, with experiences and lessons learned identified and systematized.	75,000	100,000	100,000		275,000
		Total	75,000	100,000	100,000	0	275,000
Output 2.5	The monitoring and evaluation system for adaptation to climate change has been strengthened.	Analysis on the implementation of the Monitoring and Evaluation System for Adaptation to Climate Change with evaluation of results and goals set, and with recommendations for improving the indicators, and monitoring and evaluation protocols.	75,000	75,000	75,000	0	225,000
		Total	75,000	75,000	75,000	0	225,000
		TOTAL	1,005,000	1,105,000	440,000	0	2,550,000
	3. Strengthened the capacity of key actors and improved knowledge on climate adaptation and resilience at the local and national levels: US$1,516,977						
Output 3.1	Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented	Stakeholder training plan on climate change and ecosystem-based adaptation.	75,000	0	0	0	75,000
		Design of training modules with content validated by the Ministry of the Environment.	75,000	25000	0	0	100,000
		Evaluation reports of each training process developed	50,000	125,000	100,000	0	275,000
		Total	200,000	150,000	100,000	0	450,000
Output 3.2	Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities	Action plan for the integration of the gender perspective into the project.	10,000	0	0	0	10,000
		Implementation reports and memories of gender capacity building workshops	15,000	15,000	10,000	0	40,000
		Total	25,000	15,000	10,000	0	50,000
Output 3.3	Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation and comprehensive project management	Special modules designed and implemented for the implementation of adaptation strategies and plans at the local scale and project management for 200 beneficiaries.	50,000	25,000	25,000	0	100,000
		Evaluation of capacity building processes.	0	5,000	5,000	0	10,000
		At least 15 proposals for adaptation projects of CBOs and municipalities prepared.	0	15,000	10,000	0	25,000
		Intermunicipal agreements established for the development of joint adaptation actions.	0	10,000	5,000	0	15,000
		Total	50,000	55,000	45,000	0	150,000
Output 3.4	Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program to systematize experiences, lessons learned and their appropriation	Comprehensive knowledge management program designed and in operation with established goals and indicators that facilitate its evaluation.	50,000	50,000	50,000	25,000	175,000
		Adaptation Platform established in the Ministry of Environment strengthened and operational.	14,000	14,000	13,977	0	41,977
		Systematization of experiences, exchanges and lessons learned from projects carried out in the program.	100,000	110,000	60,000	80,000	350,000
		Total	164,000	174,000	123,977	105,000	566,977
Output 3.5	3.5. Ensured the communication actions of the program that provide information to its stakeholders.	Program communication plan: It will allow informing, sharing, disseminating and educating key stakeholders and the general public about the results, lessons and experiences of the Project.	15,000	0	0	0	15,000
		Implementation of communication actions of the program such as calls, campaigns, dissemination of lessons learned and experiences generated by the project, dissemination of program results through the different communication media and established platforms, including social networks. Media and social media monitoring report.	35,000	140,000	110,000	0	285,000
		Total	50,000	140,000	110,000	0	300,000
		TOTAL	489,000	534,000	388,977	105,000	1,516,977
		Total Direct Costs	2,599,000	3,509,000	2,203,977	105,000	8,416,977
		Total cost of Executors	246,905	333,355	209,378	9,975	799,613
		Total Cost of the Program (Adaptation Fund)	2,845,905	3,842,355	2,413,355	114,975	9,216,590
		Total NIE	241,902	326,600	205,135	9,773	783,410
		GRAN TOTAL				10,000,000	10,000,000

Note: See Annex 18 for the Budget broken down by products, activities and subcategories of expenditure

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Budget on the implementing entity management fee use

The program will be coordinated by a manager, two project coordinators, an accountant, and a technical assistant under the supervision of the executive direction of the NIE. The proposed Budget for the NIE will be used to cover operational costs of the program and general and administrative costs.

Table 3.9. Budget on the implementing entity management fee use

Expenses (items)	Description	Cost estimation	%
General	Provide technical support for the start of the project. Support implementation and negotiation arrangements with other actors / sectors. Program kickoff workshop and report. Respond to requests for information, other requirements, etc.	32,853	4%
Implementation and Supervision	Communication with the Adaptation Fund Secretariat to obtain authorizations and others. Provide operational, general, and administrative support to the Program. Technical support in the preparation of the terms of reference and evaluation for hiring the team of the executing entities. Technical support in the preparation of the terms of reference for projects and consultancies. Announcements for projects, goods and services acquisition, and support for project evaluations and consultancies. Verify all the technical reports delivered by the executing entities so that they comply with the guidelines of the Fund and its work plans. Procedures and monitoring of goods and services procurement. Support and monitoring grants contracts. Support to verify the complementarity with other projects or programs. Carrying out technical, administrative-financial monitoring tours and field visits to projects. Follow-up to supervision missions. Monitoring so that they comply with the environmental, social, gender and risk policies of the AF and FN. Present and disseminate program progress. Strengthening of the NIE and EE team (includes related trips) Information and communication management. Conduct technical analysis, validate results, and collect lessons. Reviews of EEs annual operating plans and procurement plans for goods and services. Financial monitoring of the project and preparation of accountability reports for the EEs. Receipt, assignment, and report to the AF Secretariat of financial resources. Supervision and monitoring of AF funds. Annual audit reports. Legal assistance	625,464	80%
Project closure	Final Technical Report. External Audit Report. Intermediate and Final Evaluation Report. Disclosure of Program Results. Systematization and Lessons Learned.	125,093	16%
	TOTAL	783,410	100.0%

Execution Costs

The execution costs will be used by the four executing entities and a percentage of no more than 1.5% for administrative support to be provided by Natura at the request of the Designated Authority and the executing entities (EE). This support cost is for an amount of for personnel costs and for the acquisition of office equipment. (Support request letters, Annex 1 and See annex 16, budget of execution expenses per year with description of items).

Table 3.10. Budget for execution costs

Expenditures	Total US$
Staff	692,592
Equipment	16,400
Consultants	25,619
Travel expenses related to the Program	26,002
Monitoring & Evaluation	29,000
Dissemination of program results at the local level	10,000
Total	799,613

H. Include a disbursement schedule with time-bound milestones

Table 3.11.A General Budget

Detail	Upon grant agreement November2024 (nov.24-oct.25)	One Year after Project Start November, 2025 (nov.25-oct.26)	Year 2 November, 2026 (nov.26-oct.27)	Year 3 November, 2027 (nov.27-oct.28)	Year 4 April, 2029 (nov.28-apr.25)	Total
Direct cost (USD)	2,599,000	3,509,000	2,203,977	105,000		8,416,977
EE fee (USD)	246,905	333,355	209,378	9,975		799,613
NIE fee (USD)	241,902	326,600	205,135	9,773		783,410
Total	3,087,807	4,168,955	2,618,490	124,748		10,000,000
REPORTS	Inception workshop report	Annual program execution report (PPR)	Annual program execution report (PPR) Intermediate evaluation	Annual program execution report (PPR)	Final Report, dissemination of program results, Final Evaluation External Audits Report	

Implementation schedule

Table 3.12. Program implementation schedule

Output / Operational	Activities	Year 1				Year 2				Year 3				Year 4				Year 5	
		QUARTER																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Op	Establish the program team; program induction																		
Op	Regular meetings to monitor the implementation of the program with staff and key stakeholders																		
Op	Monitoring and evaluation of the implementation of the Program																		
Output 1.1	Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems																		
A . 1.1.1	At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating NbS and technologies.																		
	Prepare criteria for the selection of beneficiaries																		
	Prepare Terms of Reference and contract process																		
	Beneficiaries Training and Elaboration of farm diagnostic																		
	Development of a farm management plan with a producer family and Sign agreements with beneficiaries																		
	Implementation of nature-based solutions.																		
A.1.1.2	Installed at least 4 apiaries and about 12 hives, including training of beneficiaries (beekeepers) and provision of equipment																		
	Prepare criteria for the selection of beneficiaries																		
	Prepare Terms of Reference and contract services																		
	Purchase of equipment and Beneficiaries training																		
	Installation and management of hives																		
	Harvest and processing of honey.																		

A.1.1.3	Installed at least four pilot oyster farming experiences, including training of beneficiaries and provision of equipment																						
	Prepare criteria for the selection of beneficiaries and Terms of Reference																						
	Beneficiaries training																						
	Installation, management and maintenance of aquaponics system.																						
	Harvest and processing of tilapia cultivation																						
A.1.1.4	Established 17 projects of integral home gardens with water harvesting systems and drip irrigation																						
	Prepare criteria for the selection of beneficiaries, Terms of Reference and contract services																						
	Beneficiaries training																						
	Installation and management of integral garden																						
	Installation, management and maintenance of drip irrigation system																						
A. 1.1.5	Installed at least 3 pilot tilapia farming projects with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell.																						
	Prepare criteria for the selection of beneficiaries, Terms of Reference and contract services																						
	Prepare																						
	Beneficiaries training																						
	Installation, management and maintenance of aquaponics system																						
	Harvest and processing of tilapia cultivation and black shell																						
A. 1.1.6	Ten community tourism experiences strengthened including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience																						
	Prepare criteria for the selection of beneficiaries, Terms of Reference and contract services																						
	Beneficiaries training																						
	Preparation and validation of guidelines to reduce CC-related risk of community tourism operations.																						
	Diagnosis to strengthen selected community tourism experiences																						
	Implementation of actions																						
	Monitoring, evaluation, and systematization of experiences																						
A. 1.1.7	12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions																						
	Prepare criteria for the selection of beneficiaries, Terms of Reference and contract services																						
	Beneficiaries training																						
	Diagnosis on selected projects																						
	Implementation of actions with nature-based solutions and application of technologies																						
	Systematization of experiences																						
A.1.1.8	10 pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology																						
	Prepare Terms of Reference and contract services																						
	Implementation of efficient irrigation projects for vulnerable families.																						
	Beneficiary training and system monitoring.																						
Output 1.2	Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services																						
A.1.2.1	Ten business plans developed and implemented for products or services with the greatest potential in the program																						
	Establishment of criteria for the selection of products and services with the greatest development and market																						

	potential																						
	Preparation and validation of business plans																						
	Socialization of business plans with beneficiaries																						
A. 1.2.1	Reports on strategic investments for the development of business plans and more specialized studies																						
	Determination of strategic investments for the development of the value chain with the incorporation of gender in its development and benefits																						
	Systematization of experiences																						
Output 1.3	Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies																						
A.1.3.1	Management of five rural aqueducts in the program area strengthened.																						
	Establishment of criteria and selection of aqueducts in coordination with MINSA																						
	Preparation of a plan to strengthen JAAR and rural aqueducts																						
	Implementation of actions in the field to improve rural aqueducts and their surroundings																						
	Sign agreements with owners to improve the conditions of water intakes and micro-basin.																						
A.1.3.2	20 multipurpose water harvesting systems installed using efficient and low-cost technologies																						
	Prepare criteria for the selection of beneficiaries considering gender and productive sectors																						
	Prepare Terms of Reference and contract services																						
	Purchase of supplies and equipment																						
	Training beneficiaries for the establishment, management and maintenance of the irrigation system																						
	Establishment of irrigation systems with the use of efficient and low-cost technologies																						
	Improvement of the production system with the incorporation of SbN or better production practices																						
	Improvement of capacity in control and management of pests, organic fertilizers and others																						
Output 1.4	Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration.																						
A.1.4.1	An analysis of the loss / gain of forest cover in the program area through the use of geographic information systems																						
	Prepare Terms of Reference and contract services																						
	Preparation of a proposed recovery plan for valuable ecosystems with identification of sites and owners																						
	Field verification and synergies with other program efforts																						
	Validation of the plan with stakeholders																						
A.1.4.2	An action plan for the recovery of high-value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity																						
	Prepare Terms of Reference																						
	Preparation of a proposed recovery plan for valuable ecosystems with identification of sites and owners																						
	Field verification and synergies with other program efforts																						
	Validation of the plan with stakeholders																						
A. 1.4.3	Installed and operating at least two community nurseries in the program area																						
	Establishment of criteria for selection of site and beneficiaries of the nursery																						
	Preparation of Terms of Reference																						
	Acquisition of space, equipment and supplies to establish the nursery and comply with established standards																						

	Comprehensive training in the management, maintenance of nurseries (selection and maintenance of seeds, pest management, organic fertilizer, etc.)																					
A. 1.4.4	150 ha of high value ecosystems reforested, enriched and / or restored																					
	Preparation of Terms of Reference with incorporation of local labor																					
	Signing of agreements with owners																					
	Development reforestation, enrichment and / or restoration of valuable ecosystems																					
	Monitoring and maintenance of plantations																					
Output 2.1	Developed baseline studies on climate change with application in planning and environmental land management																					
A. 2.1.1	Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the program area																					
	Prepare Terms of Reference and contract process																					
	Physical, environmental, socioeconomic and climatic diagnosis of the basin																					
	Development of a proposal for a Vulnerability Plan and recommendations for adaptation and climate resilience																					
	Tool validation with key stakeholders																					
	Preparation of final document validated with actors																					
A. 2.1.2	A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios																					
	Development of a methodology for the definition of parameters / criteria taking Climate Central as a reference and based on the actions carried out at the national level.																					
	Define the monitoring points for modeling sea level rise in the Central Pacific of Panama																					
	Development of field training days for supervision and data validation																					
	Systematization and data processing																					
	Preparation of maps with collected information																					
A. 2.1.3	Three Environmental Land Management plans for prioritized districts																					
	Prepare Terms of Reference and contract process																					
	Development of socioeconomic, physical and environmental diagnosis (CC)																					
	Development of stakeholder consultation workshops																					
	Analysis of development scenarios and projections and risk analysis																					
	Proposal for Environmental Land Management plan																					
	Validation Workshop with key stakeholders																					
	Final proposal of Environmental Land Management plans validated for each prioritized district																					
A. 2.1.4	Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories																					
	Coordination with the Ministry of Economy and Finance and selected municipalities																					
	Adjustment in the document design (plan) to incorporate environmental and climate information																					
	Preparation of a proposal for strategic plans for municipal development																					
	Development of consultation and validation workshops																					
	Final documents with validated Strategic Municipal Development Plans																					
Output 2.2	Strengthened the network of meteorological stations and sea level gauges, and the related Early Warning Systems (EWS)																					
A.2.2.1	Improved meteorological stations of the hydrographic basins in the program area to generate complementary agroclimatic and hydrological information.																					

	Definition and validation of met stations and improvement needs (climatic and hydrological information)																					
	Determination of potential suppliers in accordance with operating manuals																					
	Quotation and evaluation of proposals																					
	Acquisition and installation of equipment, maintenance and development of tests																					
	Systematization and analysis of new agroclimatic and hydrological information and its application																					
A. 2.2.2	Acquired, installed and connected three sea level gauges to the national and global tsunami monitoring network.																					
	Establishment of international specifications for the acquisition, installation and maintenance of sea level gauges.																					
	Validation of sites for the installation of tide gauges.																					
	Purchase and installation of sea level gauges.																					
	Calibration and test development																					
	Strengthening of capacities for the systematization and analysis of data																					
A. 2.2.3	The Early Warning System for floods, waves and tsunamis strengthened for the Central Pacific sector of Panama																					
	Diagnosis of main actions to strengthen EWS in the Central Pacific of Panama																					
	Preparation of Terms of Reference																					
	Development of actions and capacity building of stakeholders																					
	Improvement of EWS signaling																					
Output 2.3	Developed a climate vulnerability and environmental risk modeling platform																					
A. 2.3.1	A climate vulnerability and environmental risk modeling platform installed and operating																					
	Preparation of Terms of Reference that define scope and scheme for platform development																					
	Contracting of services for the development (programming) of the platform based on climate information generated (vulnerability, risks, projections of sea level rise)																					
	Development of algorithms and tests of the platform																					
	Validation with actors.																					
A. 2.3.2	Protocol for information management and the use of the modeling platform for climate vulnerability and environmental risks																					
	Development of a protocol proposal for information management and access to the platform																					
	Validation with key stakeholders																					
	Putting the platform online																					
	Socialization of the tool with key actors																					
	Development of a protocol proposal for information management and access to the platform.																					
Output 2.4	Developed case studies of cost effectiveness of community projects.																					
A. 2.4.1	Ten Cost/effectiveness analysis of community projects developed by the AF, with experiences and lessons learned identified and systematized																					
	Prepare Terms of Reference and contract process																					
	Development and validation of tools to collect information and selection of community projects																					
	Training of community personnel to systematize information																					
	Case study development																					
A. 2.4.2	Implementation of prioritized adaptation measures, their monitoring, evaluation and systematization of the experience																					

	Implementation of prioritized adaptation measures according to the results of cost-effectiveness and feasibility analysis																					
	Monitoring and impact evaluation																					
	Systematization of lessons learned																					
Output 2.5	The monitoring and evaluation system for adaptation to climate change has been strengthened																					
A. 2.5.1	Analysis on the implementation of the Monitoring and Evaluation System for Adaptation to Climate Change with evaluation of results and goals set, and with recommendations for improving the indicators, and monitoring and evaluation protocols																					
	Comprehensive diagnosis of management and goals fulfillment through the M&E system for adaptation to CC.																					
	Proposal and validation of actions for its integral management (Managerial, Administrative, Technical, Products and Results)																					
	Implementation of actions for improved management (including indicators and M&E protocols)																					
Output 3.1	Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented																					
A. 3.1.1	Stakeholder training plan on climate change and ecosystem-based adaptation.																					
	Prepare Terms of Reference and contract process																					
	Design of the training plan proposal																					
	Consultation and validation with key stakeholders																					
	Training plan validated with monitoring and evaluation indicators																					
A. 3.1.2	Design of training modules with content validated by the Ministry of the Environment.																					
	Preparation of Terms of Reference																					
	Design of modules and contents according to the training plan																					
	Development of evaluation instruments																					
	Validation of modules (contents) and validation instruments with MiAmbiente and other key actors																					
A. 3.1.3	Evaluation reports of each training process developed																					
	Monitoring and evaluation of training processes.																					
	Preparation of training reports and evaluation results																					
Output 3.2	Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities																					
A. 3.2.1	Action plan for the integration of the gender perspective into the project.																					
	Development of surveys and field interviews with stakeholders																					
	Development of consultation and validation workshops																					
	Action plan for the integration of the gender perspective into the project																					
A. 3.2.2	Implementation reports and memories of gender capacity building workshops																					
	Reports on the implementation of the gender action plan																					
	Reports of gender capacity building workshops (institutions and beneficiaries).																					
Output 3.3	Strengthened the capacities of community-based organizations and municipalities on climate change, ecosystem-based adaptation and comprehensive project management.																					
A. 3.3.1	Special modules designed and implemented for the implementation of adaptation strategies and plans at the local scale and project management for 200 beneficiaries																					
	Prepare Terms of Reference and contract process.																					
	Design of modules and contents according to the training plan (local implementation strategies and adaptation																					

	plans and project management).																						
	Development of evaluation instruments.																						
	Validation of modules (contents) and validation instruments with MiAmbiente and other key actors																						
A. 3.3.2	Evaluation of capacity building processes																						
	Monitoring and evaluation of training processes.																						
	Preparation of training reports and evaluation results																						
A. 3.3.3	At least 15 proposals for adaptation projects of CBOs and municipalities prepared.																						
	Development of proposal preparation workshops																						
	Monitoring and support for the development of project ideas																						
A. 3.3.4	Intermunicipal agreements established for the development of joint adaptation actions																						
	Identification of topics and areas of interest between municipalities																						
	Facilitation of the process for establishing inter-municipal agreements																						
	Facilitation of processes for the development of joint projects (proposed preparation)																						
Output 3.4	Increased knowledge management on adaptation to CC at the national level, by strengthening the adaptation portal and a program to systematize experiences, lessons learned and their appropriation																						
A. 3.4.1	Comprehensive knowledge management program designed and in operation with established goals and indicators that facilitate its evaluation.																						
	Preparation of Terms of Reference																						
	Design of a Comprehensive Knowledge Management Program with goals and evaluation indicators																						
	Proposal validation																						
	Implementation, monitoring and evaluation of the Comprehensive Knowledge Management Program																						
A. 3.4.2	Adaptation Platform of the Ministry of Environment strengthened and operating.																						
	Strengthening of the MiAmbiente Adaptation Platform for the Program's needs (training, communication, etc.)																						
	Hosting of Adaptation Platform and enabling easy access for users																						
A. 3.4.3	Systematization of experiences, exchanges and lessons learned from projects carried out in the program																						
	Preparation of ToR and Selection of best experiences and hiring of services to systematize them																						
	Development of experiences exchange actions																						
	Facilitation of communication of progress, results, experience and lessons learned generated.																						
A. 3.5.1	Preparation of ToR, selection of consultant and preparation of communication plan for the program																						
A. 3.5.2	Preparation of Terms of Reference and Selection of communications specialist consultant.																						
	Preparation of communication report and impact monitoring in the different media.																						
REPORTS: Inception workshop report			x																				
Annual program execution reports (PPR)					x				x				x				x						
Final report																							x
External Audits report																							x
Intermediate evaluation and final evaluation										x													x

PARTE IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government [37]

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/program proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/program:

Juan Carlos Monterrey, *Climate Change Director - Ministerio deAmbiente de Panamá*~~Angel Cárdenas, Jefe de la Oficina Técnica de Cooperación Internacional, *Ministerio deAmbiente de Panamá*~~	Date: *November 18, 2024* ~~Fecha: *August 28, 2024*~~

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also theproject/program contact person's name, telephone number and email address.

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans. The National Climate Change Policy (Executive Decree No. 35 of 2007) and its policy of mitigation and adaptation to climate change (Executive Decree No. 100 of 2020 and Executive Decree 131 of 2021), Fourth National Communication on Climate Change of Panama (2023), Third National Communication on Climate Change of Panama Government of the Republic of Panama, The National Climate Change Strategy 2050-Panama, Vulnerabilidad, Reducción de Riesgos y Adaptación al Cambio Climático, Panamá. Perfil de país de adaptación y riesgo climático. Banco Mundial, National Institute of Statistics and Census -INEC (n / d). General geographic aspects of Panama. December 2021, The Strategic Government Plan 2019-2024 of Panama framed in objectives and goals agreed upon through a broad participatory and inclusive process called "National Consensus", Ministry of Social Development -MIDES (2020). II Voluntary National Report of the SDGs, Atlas of Local Human Development, Multidimensional Poverty Index (IPM-C), at the district and corregimiento level, using the Population and Housing Census of Panama, Second National Communication on Climate Change of Panama, Government of the Republic of Panama, National Climate Change Plan for the Agricultural Sector of Panama; and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme[38].	
Name & Signature Implementing Entity Coordinator Rosa Montañez	
Date: August 16, 2023	Tel. and email: (507) 232-7615 rmontanez@naturapanama.org info@naturapanama.org
Project Contact Person: Rosa Montanez / Vilma Cuéllar	
Tel. and Email: (507) 232-7615 vcuellar@naturapanama.org	

ANNEXES

Anexo 1 CARTAS DE ENDOSO

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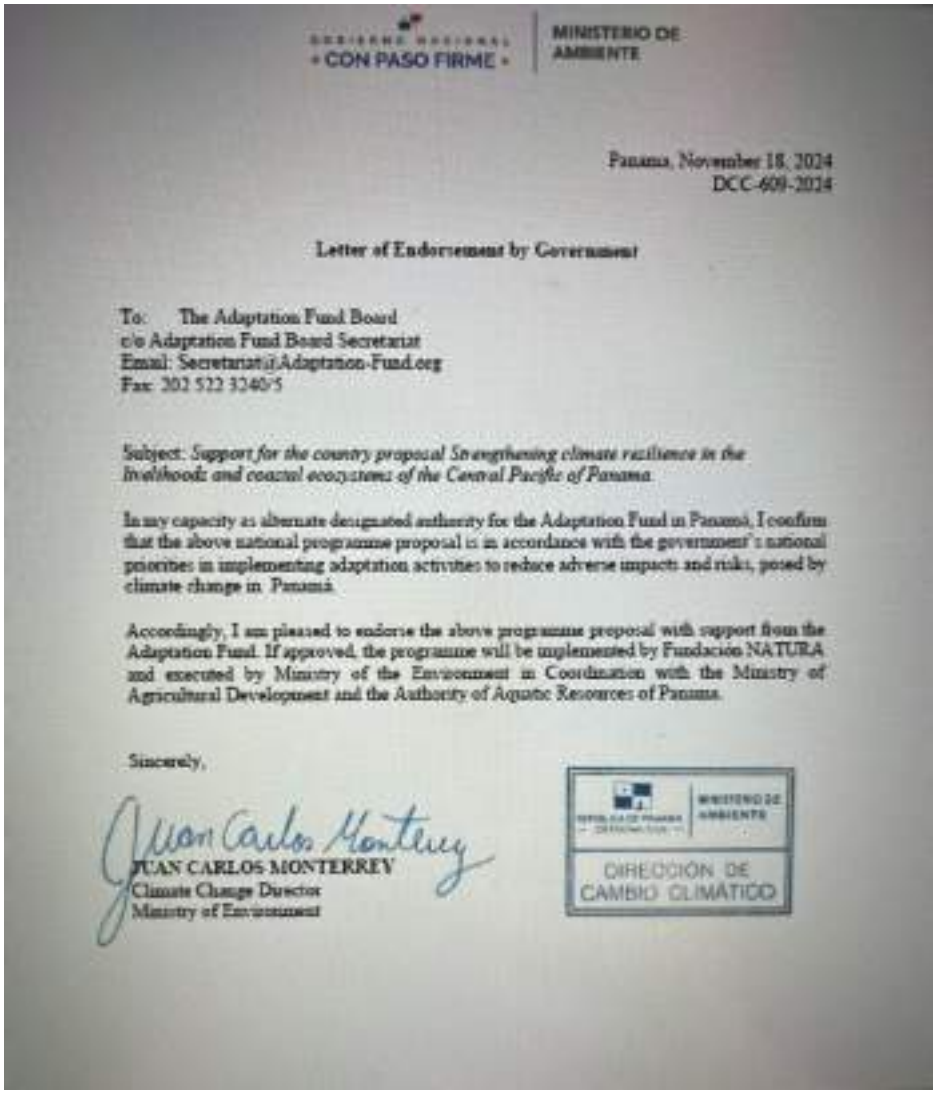


GOBIERNO NACIONAL
« CON PASO FIRME »

MINISTERIO DE AMBIENTE

Panama, November 18, 2024
DCC-609-2024

Letter of Endorsement by Government

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: *Support for the country proposal Strengthening climate resilience in the livelihoods and coastal ecosystems of the Central Pacific of Panama*

In my capacity as alternate designated authority for the Adaptation Fund in Panamá, I confirm that the above national programme proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts and risks, posed by climate change in Panamá.

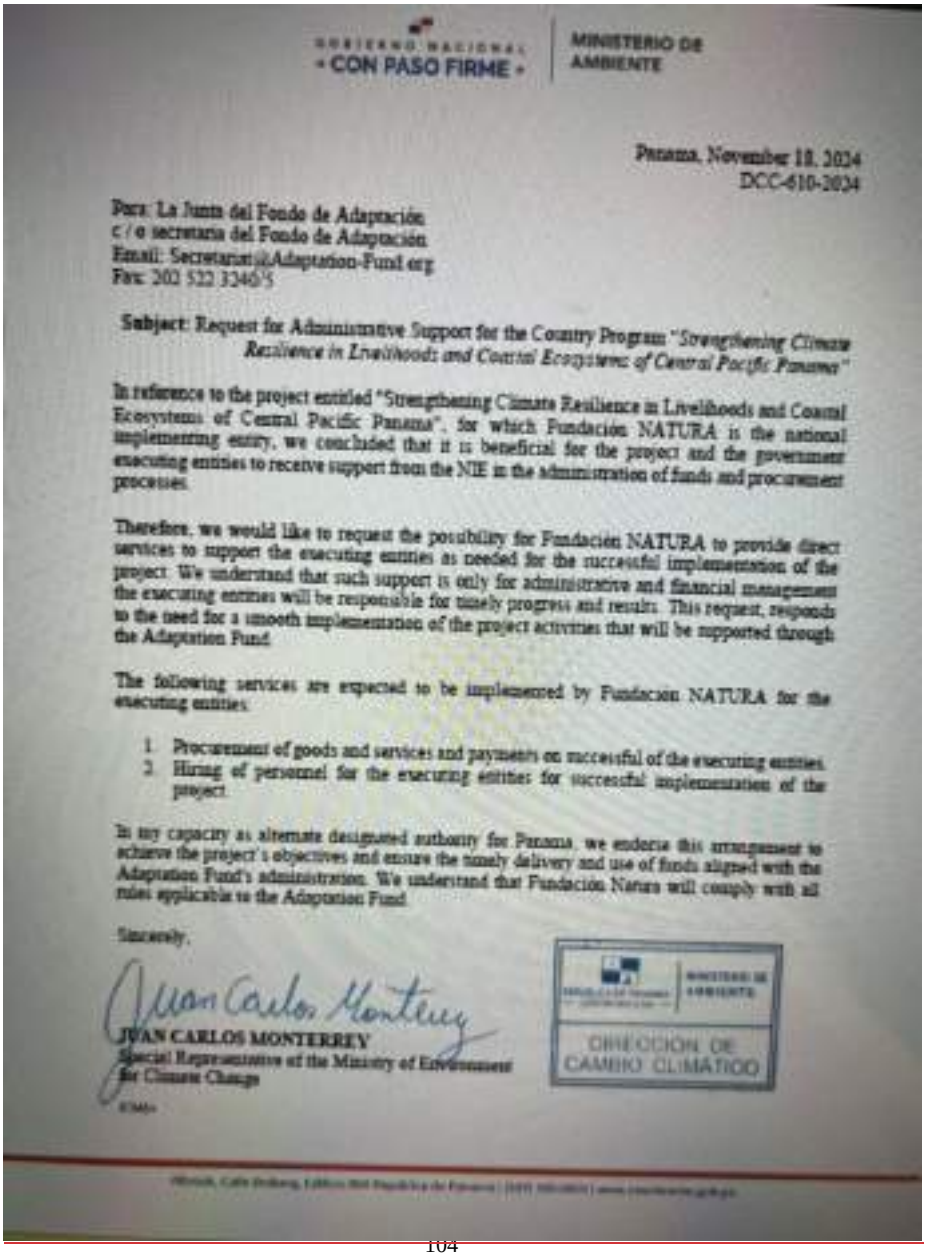
Accordingly, I am pleased to endorse the above programme proposal with support from the Adaptation Fund. If approved, the programme will be implemented by Fundación NATURA and executed by Ministry of the Environment in Coordination with the Ministry of Agricultural Development and the Authority of Aquatic Resources of Panama.

Sincerely,

Juan Carlos Monterrey

JUAN CARLOS MONTERREY
Climate Change Director
Ministry of Environment

DIRECCIÓN DE CAMBIO CLIMÁTICO



GOBIERNO NACIONAL
« CON PASO FIRME »

MINISTERIO DE AMBIENTE

Panama, November 18, 2024
DCC-610-2024

Para: La Junta del Fondo de Adaptación
c / o secretaria del Fondo de Adaptación
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Request for Administrative Support for the Country Program "*Strengthening Climate Resilience in Livelihoods and Coastal Ecosystems of Central Pacific Panama*"

In reference to the project entitled "Strengthening Climate Resilience in Livelihoods and Coastal Ecosystems of Central Pacific Panama", for which Fundación NATURA is the national implementing entity, we concluded that it is beneficial for the project and the government executing entities to receive support from the NIE in the administration of funds and procurement processes.

Therefore, we would like to request the possibility for Fundación NATURA to provide direct services to support the executing entities as needed for the successful implementation of the project. We understand that such support is only for administrative and financial management the executing entities will be responsible for timely progress and results. This request, responds to the need for a smooth implementation of the project activities that will be supported through the Adaptation Fund.

The following services are expected to be implemented by Fundación NATURA for the executing entities.

1. Procurement of goods and services and payments on successful of the executing entities.
2. Hiring of personnel for the executing entities for successful implementation of the project.

In my capacity as alternate designated authority for Panama, we endorse this arrangement to achieve the project's objectives and ensure the timely delivery and use of funds aligned with the Adaptation Fund's administration. We understand that Fundación Natura will comply with all rules applicable to the Adaptation Fund.

Sincerely,

Juan Carlos Monterrey

JUAN CARLOS MONTERREY
Special Representative of the Ministry of Environment for Climate Change

MINISTERIO DE AMBIENTE
DIRECCIÓN DE CAMBIO CLIMÁTICO

GOBIERNO NACIONAL
CON PASO FIRME

MINISTERIO
DE DESARROLLO
AGROPECUARIO

DESPACHO SUPERIOR

Panamá, 20 de agosto de 2024.
DM634-2024.

Junta del Fondo de Adaptación
C/o Secretaría de la Junta del Fondo de Adaptación
Correo electrónico: Secretary@adaptation-fund.org
Fax:202522 3240/5

Asunto: Respaldo a la propuesta país *"Fortaleciendo la Resiliencia Climática en Medios de Vida y Ecosistemas Costeros del Pacífico Central de Panamá"*

En mi calidad de Ministro del Ministerio de Desarrollo Agropecuario (MIDA), confirmo que las acciones propuestas en el Proyecto *Fortaleciendo la Resiliencia Climática en Medios de Vida y Ecosistemas Costeros del Pacífico Central de Panamá*, están de acuerdo con las prioridades nacionales del gobierno en la implementación de actividades de adaptación para reducir los impactos adversos y los riesgos al cambio climático en Panamá.

En consecuencia, me complace respaldar la 2da. propuesta de país *Fortaleciendo la Resiliencia Climática en Medios de Vida y Ecosistemas Costeros del Pacífico Central de Panamá* con el apoyo del Fondo de Adaptación. La complementariedad entre las actividades del programa y del MIDA será clave para fortalecer la resiliencia del sector en áreas vulnerables de nuestro país.

Panamá, Altos de Curundú, calle Manuel E. Melo V. Edificio 575, Apartado 0816-01611, Zona 5, Panamá
Teléfonos: 507-0600 Ext. 8534/8502

www.mida.gob.pa

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GOBIERNO NACIONAL
CON PASO FIRME

MINISTERIO
DE DESARROLLO
AGROPECUARIO

Si se aprueba la propuesta, productos del proyecto serán ejecutados técnicamente por el MIDA.

Atentamente,

Roberto José Linares Tribaldos
Ministro
Ministerio de Desarrollo Agropecuario

cc. Rosa Montañez - Directora Ejecutiva, Fundación Natura

REPÚBLICA DE PANAMÁ
— GOBIERNO NACIONAL —

IMHPA

IMHPA-577-2023
14 de diciembre de 2023

Junta del Fondo de Adaptación
Secretaría de la Junta del Fondo de Adaptación

Asunto: Respaldo a la propuesta país "*Fortaleciendo la Resiliencia Climática en Medios de Vida y Ecosistemas Costeros del Pacífico Central de Panamá*"

En mi calidad de Directora General del Instituto de Meteorología e Hidrología de Panamá (IMHPA), confirmo que las acciones propuestas en el Programa *Fortaleciendo la Resiliencia Climática en Medios de Vida y Ecosistemas Costeros del Pacífico Central de Panamá*, están de acuerdo con las prioridades nacionales del gobierno en la implementación de actividades de adaptación para reducir los impactos adversos y los riesgos al cambio climático en Panamá.

En consecuencia, me complace respaldar la propuesta de país *Fortaleciendo la Resiliencia Climática en Medios de Vida y Ecosistemas Costeros del Pacífico Central de Panamá* con el apoyo del Fondo de Adaptación. La complementariedad entre las actividades del programa y del Instituto de Meteorología e Hidrología de Panamá será clave para fortalecer la resiliencia del sector en áreas vulnerables de nuestro país.

Si se aprueba la propuesta, productos del componente 2 serán ejecutados por el IMHPA.

Atentamente,

LUZ GRACIELA DE CALZADILLA
Directora General

c: Sra. Rosa Montañez, Directora Ejecutiva, Fundación Natura

Ave. Ricardo J. Alfaro, Edificio Sun Tower Mall, Torre B, tercer piso
Teléfonos: 501-3848; 501-3849
Panamá, República de Panamá

Letters requesting administrative support

GOBIERNO NACIONAL
CON PASO FIRME

MINISTERIO DE AMBIENTE

Panama, August 28, 2024
OCTI-185-2024

Para: La Junta del Fondo de Adaptación
c / o secretaría del Fondo de Adaptación
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/3

Subject: Request for Administrative Support for the Country Program *"Strengthening Climate Resilience in Livelihoods and Coastal Ecosystems of Central Pacific Panama"*

In reference to the project entitled "Strengthening Climate Resilience in Livelihoods and Coastal Ecosystems of Central Pacific Panama", for which Fundación NATURA is the nation al implementing entity, we concluded that it is beneficial for the project and the government executing entities to receive support from the NIE in the administration of funds and procurement processes.

Therefore, we would like to request the possibility for Fundación NATURA to provide direct services to support the executing entities as needed for the successful implementation of the project. We understand that such support is only for administrative and financial management the executing entities will be responsible for timely progress and results. This request, responds o the need for a smooth implementation of the project activities that will be supported through the Adaptation Fund.

The following services are expected to be implemented by Fundación NATURA for the executing entities:

1. Procurement of goods and services and payments on successful of the executing entities.
2. Hiring of personnel for the executing entities for successful implementation of the project.

In my capacity as alternate designated authority for Panama, we endorse this arrangement to achieve the project's objectives and ensure the timely delivery and use of funds aligned wit the Adaptation Fund's administration. We understand that Fundación Nature will comply with all n ies applicable to the Adaptation Fund.

Sincerely,

ANGEL CARDENAS
Head of the International Technical Cooperation Office
Ministry of Environment

MIAMBIENTE

Albrook, Calle Bolívar, Edificio 804 República de Panamá | (507) 500-0855 | www.miambiente.gob.pa

REPÚBLICA DE PANAMÁ | IMHPA

IMHPA-578-2023
14 de diciembre de 2023

Señora
ROSA MONTAÑEZ
Directora Ejecutiva
Fundación Natura
E. S. D.

Asunto: Solicitud de servicios directos por parte de Fundación Natura

Estimada señora Montañez:

La Dirección General y el equipo técnico-administrativo del Instituto de Meteorología e Hidrología de Panamá "Ingeniero Ovigildo Herrera Marcucci" analizamos y decidimos que para la ejecución técnica, desde el IMHPA, de productos del proyecto *Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá* solicitamos a Fundación Natura, su apoyo en los procesos de gestión y adquisiciones necesarias para una implementación exitosa de los componentes que estaremos ejecutando.

Esta solicitud responde a la necesidad de una ejecución fluida dado el tiempo para la implementación. Entendemos que dicho apoyo es sólo de gestión administrativa y que las decisiones técnicas del proyecto, incluyendo el avance en tiempo y resultados, serán responsabilidad del IMHPA.

Se espera que los siguientes servicios directos sean implementados por Fundación Natura para el desarrollo de los componentes que ejecutará el IMHPA:

1. Adquisición de bienes y servicios y sus pagos respectivos.
2. Contrataciones de personal o consultorías y sus pagos respectivos.
3. Apoyo en la implementación de acciones de capacitación.

Para el IMHPA el apoyo es fundamental para lograr los objetivos establecidos en el proyecto y asegurar la entrega y utilización oportuna de los recursos de acuerdo con las reglas de gestión del Fondo de Adaptación.

Atentamente,

LUZ GRACIELA DE CALZADILLA
Directora General

c: Ing. Vilma Cuéllar, Gerente de Proyectos Especiales, Fundación Natura

[illegible]

DESPACHO DE LA ADMINISTRACIÓN GENERAL

Panamá, 22 de agosto de 2024
AG-725-2024

Señora
Rosa Montañez
Directora Ejecutiva
Fundación Natura

Asunto: Solicitud de servicios directos por parte de Fundación Natura

Estimada Sra. Montañez:

En el Autoridad de los Recursos Acuáticos de Panamá (ARAP) enalizamos y acordamos que para la ejecución técnica desde la ARAP de productos del proyecto *Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá* solicitar a Fundación Natura, su apoyo en los procesos de gestión y adquisiciones necesarios para una implementación exitosa de los componentes que estaremos ejecutando.

Esta solicitud responde a la necesidad de una ejecución financiera fluida dado el tiempo para la implementación de las acciones a realizar. El apoyo solicitado es para la gestión administrativa y financiera; las decisiones técnicas del proyecto, incluyendo el avance en tiempo y resultados, serán responsabilidad de la Autoridad de los Recursos Acuáticos de Panamá.

Se espera que los siguientes servicios directos solicitados por la Autoridad de los Recursos Acuáticos de Panamá sean implementados por Fundación Natura:

1. Adquisición de bienes y servicios y sus pagos respectivos.
2. Contrataciones de personal o consultorías y sus pagos respectivos.
1. Apoyo en la implementación de acciones de gestión del conocimiento.

Para la ARAP el apoyo es fundamental para lograr los objetivos establecidos en el proyecto y asegurar la entrega y utilización oportuna de los recursos de acuerdo con las reglas de gestión del Fondo de Adaptación.

Atentamente,

Magíster
EDUARDO CARRASQUILLA
Administrador General
Autoridad de los Recursos Acuáticos de Panamá

cc. Karla Adames, Directora Encargada I+D, ARAP
Vilma Cuéllar, Gerente de Proyectos Especiales, NATURA

GOBIERNO NACIONAL
CON PASO FIRME

MINISTERIO
DE DESARROLLO
AGROPECUARIO

DESPACHO SUPERIOR

Panamá, 20 de agosto de 2024.
DM-533-2024.

Señora
Rosa Montañez
Directora Ejecutiva
Fundación Natura

Asunto: Solicitud de servicios directos por parte de Fundación Natura

Estimada Sra. Montañez:

En el Ministerio de Desarrollo Agropecuario (MIDA) analizamos y decidimos que para la ejecución técnica desde el MIDA de productos del proyecto *Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá* solicitar a Fundación Natura, su apoyo en los procesos de gestión y adquisiciones necesarios para una implementación exitosa de los componentes que estaremos ejecutando.

Esta solicitud responde a la necesidad de una ejecución financiera fluida dado el tiempo para la implementación de las acciones a realizar. El apoyo solicitado es para la gestión administrativa y financiera; las decisiones técnicas del proyecto, incluyendo el avance en tiempo y resultados, serán responsabilidad del Ministerio de Desarrollo Agropecuario.

Se espera que los siguientes servicios directos solicitados por el MIDA sean implementados por Fundación Natura:

1. Adquisición de bienes y servicios y sus pagos respectivos.
2. Contrataciones de personal o consultorías y sus pagos respectivos.
3. Apoyo en la implementación de acciones de gestión del conocimiento.

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DE DESARROLLO
AGROPECUARIO

Para el MIDA el apoyo es fundamental para lograr los objetivos establecidos en el proyecto y asegurar la entrega y utilización oportuna de los recursos de acuerdo con las reglas de gestión del Fondo de Adaptación.

Atentamente,

Roberto José Linares Tribaldos
Ministro

cc. Carlota Mattos - Secretaria General, MIDA
Ibelice Arrifo - Jefa de la Unidad Agroambiental y Cambio Climático, MIDA
Vilma Cuéllar - Gerente de Proyectos Especiales, Nature

Anexo 2

1.1 Strengthened livelihood management through productive diversification and the incorporation of technologies and solutions based on nature in traditional production systems.

Product Summary:
Table 2.1 Product overview 1.1

Adaptation Measure	Livelihood management strengthened through productive diversification, incorporation of technology and nature-based solutions in traditional production systems
Scope:	Local: Coastal settlements and replicable at the national level.
Adaptation benefits	These systems will contribute to increasing the food and nutritional security of coastal communities and improving the resilience of livelihoods to the effects of Climate Change, including water stress, temperature rise and the impact of rising sea levels.
Technical solutions	Solutions based on nature in situ, in the selected farms, productive diversification and improvement of conditions for the sustainability of the subprojects, which includes strengthening the capacities of the beneficiaries. Incorporation of efficient and low-cost technology that contributes to diversification, adaptation, and improvement of productivity.
Adaptation additionality	It will allow the link between the adaptation action and the National Climate Change Plan for the Agricultural sector.

Adaptation reasoning:
Table 2.2. Adaptation reasoning for product 1.1

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Productive diversification, use of efficient and low-cost technology and nature- based solutions for traditional production systems.	Altered seasonal patterns of precipitation and runoff; water stress or water scarcity and sea level rise.	Less dependence on a single livelihood. Greater food and nutritional security.	Climate-smart production program incorporating efficient and low-cost technology. They include better productive practices through nature-based solutions.

1.2 Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services.

Product Summary:
Table 2.3. Product summary 1.2

Adaptation Measure	Value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services strengthened
Scope:	Local: Coastal settlements and replicable at the national level
Adaptation benefits:	Maintain the long-term sustainability of climate resilience and adaptation actions for livelihoods. Contribute to increase food and nutritional security in coastal communities, expand the participation of beneficiaries including gender in the

Technical solutions:	production process and its benefits. Consumers' awareness of the importance and impact of purchasing climate-smart products.
	Design of key strategic instruments that will make it possible to increase community benefits and the inclusion of gender in production processes and their benefits; and consumer awareness about fair and responsible markets.
Adaptation additionality:	It will allow the link between the adaptation action and the National Climate Change Plan for the Agricultural sector and will also allow to maintain and strengthen adaptation and resilience actions in long-term livelihoods.

Adaptation reasoning:

Table 2.4. Adaptation reasoning for product 1.2

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Preparation and implementation of base studies to strengthen the value chain of products with high potential that allow the inclusion of gender in their development and benefits	Altered seasonal patterns of precipitation and runoff; water stress or water scarcity and sea level rise	Generation of added value in productive processes and inclusion of women and youth in benefits that contribute to their food security and strengthen their resilience to the effects of CC.	Inclusion of good production practices, technology and capacity building in value chain development and awareness of actors about fair and responsible markets.

1.3 Improved water resource management in coastal communities through the implementation of rural aqueduct management models and water harvesting with the use of efficient and low-cost technologies.

Product Summary:

Table 2.5. Product summary 1.3

Adaptation Measure	Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies
Scope:	Local: 18 families from coastal townships, replicable on a national scale.
Adaptation benefits:	Improvement of the well-being or quality of family life, greater security in the provision of food by ensuring water for livelihoods in the face of periods with variability in precipitation.
Technical solutions:	Design and installation of water harvesting systems that help mitigate its scarcity in times of decreased rainfall so that it contributes to family well-being and maintenance of their livelihoods.
Adaptation additionality:	It will allow the linking of concrete adaptation actions through the implementation of the National Water Security Plan, strengthening the resilience of the beneficiaries and their livelihoods to variability in precipitation patterns and periods
	of water stress. Actions with the capacity for replication at the national level and for the systematization of experiences and lessons learned.

Adaptation reasoning:
Table 2.6. Adaption reasoning for product 1.3

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Better management of rural aqueducts and establishment of water harvesting systems with efficient and low-cost technology	Variability in precipitation patterns and water stress during the dry season	Increase in the resilience of communities due to better management of their rural aqueducts and of beneficiaries through water harvesting systems	Ecosystem-based adaptation measures are applied as part of comprehensive solutions for rural aqueducts and improves the resilience of beneficiaries with adaptation actions in the face of variability in precipitation and water scarcity in the dry season; improves their quality of life and food security.

1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment, or restoration of these ecosystems.

Product Summary:
Table 2.7. Product Summary 1.4

Adaptation Measure	Reduced the pressures on high value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems.
Scope:	At the site scale within the program area in the Dry Arch of Panama
Adaptation benefits:	Increased resilience to rising sea levels, storm protection, carbon sequestration, water regulation, sediment retention, fish production, and other important environmental services.
Technical solutions:	Increase in the protection and recovery of high value ecosystems and with this improvement of adaptation actions, improvement of resilience and mitigation of Climate Change at a local scale.
Adaptation additionality:	It will allow the link with the National Forest Strategy 2050 and recovery of high value ecosystems (wetlands and mangroves) and ecosystems that are under-represented in the National System of Protected Areas of Panama (dry forest)

Adaptation reasoning:
Table 2.8. Adaption reasoning for product 1.4

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Improvement in the protection, reforestation, enrichment and / or restoration of	Decrease in precipitation due to variability that affects ecosystem recovery actions. Sea level rise causing coastal erosion.	Recovered 150 ha of high value ecosystems for their environmental goods and services they provide.	Planned process in accordance with base studies developed that allow orienting actions in areas of greater impact.

high value ecosystems			

2.1 Developed baseline studies on climate change with application to planning and environmental land use planning.

Product Summary:
Table 2.11. Product Summary 2.1

Adaptation Measure	Base studies on climate change with application in planning and environmental land use planning.
Scope:	Municipal, scalable nationwide.
Adaptation benefits	Planning and land use planning tools with environmental and climatic considerations that will guide sustainable development at the municipal level.
Technical solutions	Reduction of vulnerability and risks generated by climate variability for the sustainable development of the territory, which includes livelihoods, communities, and infrastructure.
Adaptation additionality	Key instruments to guide local development with considerations of impacts and effects of global climate change, which will reduce risks in any public and / or private initiative

Adaptation reasoning:
Table 2.12. Adaptation reasoning for product 2.1

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Development of tools and plans with environmental and climatic considerations that guide a development with less exposure to the vulnerability and risks of climate variability	Seasonal variations in rainfall, with intense rains in very short periods of time, as well as rising sea levels and waves of greater magnitude.	Development process for the next few years based on planning and ordering tools that consider vulnerability and climate risks.	Design of planning, ordering and local development tools based on the results of vulnerability analysis and projection models of sea level rise.

2.2 Strengthening the network of meteorological stations and tide gauges and the related Early Warning Systems.

Product Summary:
Table 2.13. Product Summary 2.2

Adaptation Measure	Strengthening of the network of meteorological stations in the area of influence of the PROGRAM and of tide gauges, and related Early Warning Systems
Scope:	Hydrographic basins and marine-coastal zone
Adaptation benefits	Communities of the Central Pacific of Panama
Technical solutions	Strengthening of the network of agro-meteorological, hydrological and tsunami stations to improve Early Warning Systems.

Adaptation additionality	Prevention of risks on a larger scale and generation of agro-climatic and hydrological information whose analysis can contribute to different adaptation processes (planning, ordering, Agro-production, among others)

Adaptation reasoning:
Table 2.14. Adaptation reasoning for product 2.2

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Strengthening and installation of networks to collect climate information to support SAT and other adaptation actions	Variability in seasonal patterns of precipitation causes alteration in the frequency and intensity of rainfall causing flooding. Rising sea levels and waves cause flooding and coastal erosion.	Network of agro-meteorological and hydrological stations and tsunamis strengthened that provide key information to SAT and other adaptation actions.	Adaptation actions to climate variability based on better information and climate data from strengthened meteorological and tsunami networks.

2.3 A platform for modeling climate vulnerability and environmental risk has been developed.

Product Summary:
Table 2.15. Product Summary 2.3

Adaptation Measure	Developed a platform for modeling climate vulnerability and environmental risk
Scope:	At the district level in the program area, Central Pacific of Panama or Dry Arc of Panama
Adaptation benefits	Tool that will allow considering projections of vulnerability and environmental risks to guide planning, ordering and development actions in the program area.
Technical solutions	Solutions based on technical and scientific information that will reduce risks to public and private sector investments and guide local development.
Adaptation additionality	Pilot who must evaluate its effectiveness and scope to scale nationally.

Adaptation reasoning:
Table 2.16. Adaptation reasoning for product 2.3

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Design of a platform for modeling climate vulnerability and environmental risks to guide development with considerations of vulnerability and environmental and climate risks	Seasonal variations in rainfall, with intense rains in very short periods of time causing flooding, as well as rising sea levels and higher magnitude waves that cause flooding and coastal erosion.	Use of the tool to include vulnerability and environmental and climate risks in planning, ordering, investment and program actions.	Tool that facilitates decision-making with considerations of vulnerability and climate risks to facilitate adaptation and resilience measures to climate change.

2.4 Implementation of prioritized adaptation measures according to cost-effectiveness analysis.

Product Summary:

Table 2.17. Product Summary 2.4

Adaptation Measure	Prioritized adaptation measures implemented according to cost effectiveness analysis
Scope:	Coastal communities, livelihoods, ecosystems
Adaptation benefits	Increased climate resilience of communities, livelihoods and ecosystems.
Technical solutions	Implementation of nature-based adaptation to improve the climate resilience of communities, livelihoods, and ecosystems
Adaptation additionality	Greater impact on actions and investments in adaptation.

Adaptation reasoning:

Table 2.18. Adaptation reasoning for product 2.4

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Prioritized adaptation measures implemented according to cost effectiveness analysis	Seasonal variations in rainfall, with intense rains in very short periods of time that cause floods and water shortages in the dry season. Sea level rise and higher waves causing flooding and coastal erosion	Enhanced climate resilience of high value communities, livelihoods, and ecosystems.	Implementation of prioritized adaptation measures according to their cost effectiveness analysis.

2.5 Strengthening the Monitoring and Evaluation System for Adaptation to Climate Change.

Product Summary

Table 2.19. Product Summary 2.5

Adaptation Measure	Strengthening the Monitoring and Evaluation System for Adaptation to Climate Change
Scope:	At the municipal level, scalable at the national level
Adaptation benefits	Key information to improve adaptation strategies and plans and guide investments. Improvement of the evaluation and monitoring system for adaptation to Climate Change.
Technical solutions	Generation of information for informed decision-making that facilitates improving adaptation strategies and plans with more effective investments.
Adaptation additionality	Generation of information to improve national adaptation strategies and plans and investments in adaptation to climate change. Validation of the adaptation monitoring and evaluation system with its indicators and protocols.

Adaptation reasoning:

Table 2.20. Adaptation reasoning for product 2.5

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling

Strengthening the Monitoring and Evaluation System for Adaptation to Climate Change with its indicators and protocols	Seasonal variations in rainfall, with intense rains in very short periods of time, rising sea levels and waves of greater magnitude.	Monitoring and Evaluation System for Adaptation to Climate Change implemented and improved with its indicators and protocols. Generation of recommendations to improve adaptation strategies and plans.	The adaptation monitoring and evaluation system is a key tool for evaluating progress in the implementation of adaptation strategies and plans and generating recommendations to improve them.

3.1 Strengthened the capacities of key actors on Climate Change and adaptation based on ecosystems and successful experiences implemented.

Product Summary:

Table 2.21. Product overview 3.1

Adaptation Measure	Strengthened the capacity of key actors and improved knowledge on climate adaptation and resilience at the local and national levels
Scope:	Coastal District Actors
Adaptation benefits	Increased knowledge capacity on Climate Change, adaptation measures based on nature and successful experiences
Technical solutions	Preparation and implementation of training plan and modules and their evaluation.
Adaptation additionality	It will make it possible to strengthen the adaptation platform to generate the capacity of actors to improve knowledge of climate change and adaptation measures based on nature.

Adaptation reasoning:

Table 2.22. Adaptation reasoning for product 3.1

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Capacity building through the development and implementation of a training plan for actors with modules on climate change and nature-based adaptation measures	Seasonal variations in rainfall, with intense rains in very short periods of time that cause floods and water shortages in the dry season. Sea level rise and higher waves causing flooding and coastal erosion	Improving the capacity of actors to understand and deal with climate change with nature-based adaptation measures.	Generation and strengthening of capacities in climate change and adaptation that will facilitate the implementation of PROGRAM actions.

3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities.

Product Summary:

Table 2.23. Product Summary 3.2

Adaptation Measure	Strengthened capacity from a gender perspective and improved knowledge on adaptation and climate resilience at the local and

	national level
Scope:	Actors from coastal districts
Adaptation benefits	Increased knowledge capacity on Climate Change, gender inclusion in benefits and decision-making, nature-based adaptation measures and project management
Technical solutions	Preparation and implementation of an action plan with a gender perspective.
Adaptation additionality	Opportunity to align the tool with the country's Gender and Climate Change Action Plan, to learn from the experience, systematize it and disseminate it.

Adaptation reasoning:
Table 2.24. Adaptation reasoning for product 3.2

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities.	Seasonal variations in rainfall, with intense rains in very short periods of time that cause flooding and water shortages in the dry season. Rise in sea level and larger waves that cause flooding and coastal erosion.	Improvement of the actors capacity to understand and face climate change with nature based adaptation measures and the management of adaptation projects with a gender perspective.	Generation and strengthening of capacities in climate change, adaptation, implementation of adaptation policies and plans at the local scale and comprehensive project management.

3.3 Strengthened capacities of Community Based Organizations and Municipalities on climate change, nature-based adaptation, and comprehensive program management.

Product Summary:
Table 2.25. Product Summary 3.2

Adaptation Measure	Strengthened the capacity of key actors and improved knowledge on climate adaptation and resilience at the local and national levels
Scope:	Coastal District Actors
Adaptation benefits	Increased knowledge capacity on Climate Change, nature-based adaptation measures and PROGRAM management
Technical solutions	Preparation and implementation of training plan and modules on climate change, nature-based adaptation, adaptation policies and plans, PROGRAM management and evaluation of these.
Adaptation additionality	Opportunity to learn from the experience through its systematization and dissemination, in addition to scaling this pilot to other sites in Panama.

Adaptation reasoning:
Table 2.26. Adaptation reasoning for product 3.2

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling

Capacity building through the preparation and implementation of a training plan for actors with modules on climate change and adaptation measures based on nature, strategy and adaptation plans and comprehensive PROGRAM management	Seasonal variations in rainfall, with intense rains in very short periods of time that cause floods and water shortages in the dry season. Sea level rise and higher magnitude waves that cause flooding and coastal erosion.	Improvement of the capacity of actors to understand and deal with climate change with adaptation measures based on nature and the management of adaptation PROGRAMs with a local perspective.	Generation and strengthening of capacities in climate change, adaptation, implementation of adaptation policies and plans at the local scale and comprehensive management of PROGRAMs.

3.4 Escalation of knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program for systematizing experiences, lessons learned and their appropriation.

Product Summary:

Table 2.27. Product Summary 3.3

Adaptation Measure	Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program for the systematization of experiences, lessons learned and their appropriation
Scope:	Key actors of the program, nationals and foreigners with an interest in the subject
Adaptation benefits	Increased knowledge capacity on Climate Change, nature-based adaptation measures and dissemination of experiences and lessons from the program
Technical solutions	Planned development of a comprehensive knowledge management program that allows measuring its scope and goals through indicators.
Adaptation additionality	It will make it possible to strengthen the adaptation platform (of MiAmbiente) and share results, knowledge and lessons learned from the program.

Adaptation reasoning:

Table 2.28. Adaptation reasoning for product 3.3

Type of measure	CC risk or impact identified	Expected result on the ground	Difference with BAU handling
Strengthening of capacities through the elaboration and implementation of a comprehensive knowledge management program	Seasonal variations in rainfall, with intense rains in very short periods of time that cause floods and water shortages in the dry season. Sea level rise and higher waves causing flooding and coastal erosion	Improvement of the capacity of actors to understand and deal with climate change with adaptation measures based on nature and access to results, lessons, tools and experiences generated by the program	Generation and strengthening of capacities in climate change and adaptation that will facilitate the implementation of program actions and access to results, lessons, tools and experiences generated by the program.

Annex 2.1. Activities and methodologies by product, considering the associated risks, mitigation measures and those responsible for monitoring.

Product	Methodology for the execution of activities	Risks inherent to the activity	Risks related to the environmental and social environment	Measures to avoid, minimize, mitigate or manage risks
Component 1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions. 1.1 Strengthening of livelihood management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems.				
1.1.1 At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based technologies and solutions.	Physical and environmental characterization of the farm. Training in planning and preparation of farm management plan and investment plan. Incorporation of good livestock practices and technology. The proposed solutions will be identified based on the characteristics and needs of each farm; they will be both structural measures aimed at efficient water management with different options and the improvement of other farm infrastructures; as well as non-structural measures, which will include the restoration of connectivity of livestock landscapes through the planting of native and fruit trees, the protection of water sources, soil coverage with improved pastures, the division and management of pastures, the establishment of protein and energy forage banks (cutting and browsing), corridors, among others. https://stri-sites.si.edu/docs/publications/pdfs/Web-2018-Guia_64-Arboles_Nativos-Spanish.pdf https://fliphtml5.com/eebm/dxpu/basic	Resistance to change Climate variability Persistence in the use of agrochemicals	Scarcity of water resources Soil degradation Loss of biodiversity Vulnerability to natural disasters.	Technical training. Exchange of experience Use of bioinputs to reduce dependence on agrochemicals Conservation agreements for water sources and forest areas. Evaluation and monitoring **Responsible:** MIDA
1.1.2 12 hives installed in 4 apiaries installed, including the training of beneficiaries (beekeepers) and the provision of equipment.	Selection of sites with ecological conditions and free of threats (use of agrochemicals). Technical training in management, maintenance and use of beehives. Delivery of equipment, manual on apiary management Preparation of work plan. Apiary installation, management and monitoring. https://proyectos.idiap.gob.pa/uploads/adjuntos/MANEJO_T%C3%89CNICO_DEL_APIARIO_PARA_LA_PRODUCCI%C3%93N_DE_MIEL_(PLEGABLE).pdf	Low interest in the activity. Limited areas to locate apiaries with optimal conditions	Impact of agrochemicals on apiaries. Climate variability affecting flowering and honey production.	Training and exchange of experiences Comprehensive management of the environment and planning of the use of inputs Evaluation and Monitoring **Responsible**: MIDA
1.1.3 Installed four pilot oyster farming experiences, including training of beneficiaries and provision of equipment	Training for the management of the species and its environmental conditions. Selection of the polygon and adaptation of sites. Preparation of a work plan and monitoring and follow-up of the production of others. Installation of lines and art of crops (baskets). Training in management, maintenance and use of basic equipment. Utilization and post-harvest management.	Little interest in being an uncommon productive sector. There is not enough control over environmental conditions for oyster farming.	Climate variability affects optimal conditions for cultivation. Use of agrochemicals affects crop farms.	Training and exchange of experiences. Management measures and actions are adopted to mitigate risks due to climate variability and external factors such as the use of agrochemicals. **Responsible**: ARAP

1.1.4 17 comprehensive garden programs established with water harvesting systems and drip irrigation systems.	Preparation of a work plan with training and awareness-raising actions Establishment of a monitoring committee with responsibilities. Training of beneficiaries through learning-by-doing techniques Implementation of good agroecological practices. Evaluation and monitoring of the work plan.	Poor local technical support Poor compliance with established responsibilities and tasks.	Scarcity of water resources. Adverse weather conditions.	Improved coordination with the responsible entity. Greater monitoring of project technicians through digital media. Change of roles in working committee leaders. Exchange of experiences. **Responsible**: MIDA
1.1.5 Installed 3 pilot tilapia farming project with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell.	Preparation of work plans and training with beneficiaries. Establishment of a Work Committee and responsibilities. Implementation of training actions through learning-by-doing techniques. Installation of a tilapia farming farm and aquaponics system. Selection and management of sites for black clam farming. Application of good management and utilization practices. Training in post-harvest management.	Low confidence in crop management and tools. Limited actions to manage crop conditions and apply good practices	Scarcity of water resources. Adverse weather conditions.	Strengthen training actions and exchange of experiences. Change roles in working committee leaders. Increase frequency of follow-up and monitoring. **Responsible**: ARAP
1.1.6 Ten strengthened community tourism experiences	Preparation of work plan and training Determination of good practices according to the tourism product. Implementation of good practices and monitoring and evaluation. Implementation of actions to reduce risks and increase resilience to climate change. Evaluation, monitoring and adaptation of actions according to results	Limited participation. Low frequency in the follow-up and monitoring of good practices and actions to reduce risks and increase resilience	Daily activities and commitments affect beneficiary participation.	Schemes with greater flexibility for participation and training are adopted. **Responsible**: ATP
1.1.7 12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4 projects to transform fishing products into value-added products with gender participation	Selection of products with the greatest potential to add value to their chain. Preparation of work plan and training Preparation of investment plans. Establishment of Committees and their responsibilities. Implementation of actions Monitoring and evaluation and adaptation according to experiences and lessons.	Few opportunities due to market limitations and competition. Little motivation to participate. There are deficiencies in waste management	Daily activities and commitments affect beneficiary participation. Climate variability affects required volume. Conflicts over benefits arise.	Schemes with greater flexibility for participation and training are adopted. Schemes for benefits based on time spent and productivity are created. Capacities and alternatives for waste management are strengthened with the support of MINSA. Alternatives are sought to obtain fishery products in nearby fishing communities. **Responsible**: ARAP
1.1.8 10 pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology	Preparation of work plan and training. Inspection of area and selection of most appropriate system and technology. Installation of systems and field training on installation, use and maintenance. Monitoring and efficient use of the system.	Limitations in the adoption of new technologies.	Water scarcity. Soil erosion due to inappropriate practices. Climate variability.	Practical demonstrations (learning by doing and sharing experiences). Selection and implementation of technologies in accordance with the reality of the environment. **Responsible**: MIDA
1.2 Value chains for the production, marketing and commercialization of climate- smart and gender-inclusive products and services have been strengthened.				

1.2.1 Ten business plans prepared and implemented for products or services with the greatest potential in the Program.	Selection of products or services (output 1.1) with the greatest potential. Preparation of business plans following FAO methodology (RuralInvest). Preparation and implementation of training plan for beneficiaries. Prioritization and implementation of strategic investments. Follow-up and monitoring, learning.	Low interest or fear of beneficiaries to participate in the process. The process of internalization and business vision is slow. The environmental, economic and social impacts of the development of each plan are evaluated and monitored and mitigation actions are implemented.	The barrier to entering the business world is high. Climate variability affects key resources for the implementation of the plan.	Soft skills are strengthened and case studies are shared and analyzed. Exchanges of experiences are generated. Monitoring and evaluation of the process and results related to each plan and application of mitigation measures. **Responsible**: MIDA, MiAMBIENTE, ARAP and ATP according to their competencies.
1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.				
1.3.1 The management of five rural aqueducts in the Program area has been strengthened.	A diagnosis of each rural aqueduct is prepared Key actions for the management and administration of the rural aqueduct and strengthening of the JAAR are validated and prioritized. Actions based on good practices for rural aqueducts are implemented. The social, economic and environmental impact is evaluated and monitored. Lessons and experiences are systematized and shared. https://www.minsa.gob.pa/sites/default/files/general/resolucion_no_713_30-07-2020.pdf	Participation of JAAR members is low. There is resistance to adopting good practices. Monitoring of indicators and impacts is not systematic.	Climate change and climate variability impact water availability. Technical support and monitoring by the competent institution to the sub-projects is limited.	Climate information generated by IMPHA and MIDA is monitored. Technical support and monitoring are strengthened with designated personnel. The incorporation of good practices and their impact on the quality of service is monitored. **Responsible**: MINSA
1.3.2 20 multipurpose water harvesting systems installed using efficient and low-cost technologies.	Selection of the best area to install the system according to needs and the environment. Training of beneficiaries in installation and maintenance of the system. Monitoring and evaluation of impact on quality of life at home and on livelihoods.	Low capacity to manage the system. Water availability is scarce for the implementation of the system.	Climate change and climate variability affect the availability of water harvesting systems.	The capacity of local technicians from counterpart institutions is strengthened for technical assistance, evaluation and monitoring. Follow-up is given to the agroclimatic bulletin and climate information from IMPHA. **Responsible**: MIDA
1.4 Reduced pressure on high- value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems.				

1.4.3 150 ha reforested, enriched and / or restored high value ecosystems	Selection of areas of greatest value and impact. Defined ecosystems and native species to be used to reforest or enrich selected areas according to the type of ecosystem (mangroves, riparian forests, others). Preparation of reforestation plan with techniques adjusted to the selected native species (3 X 4 m or 4 X 4 m). Development of reforestation process: soil preparation, marking, digging, planting, fertilization with bioinputs, replanting and maintenance. Risk prevention measures are developed (exclusion of reforested areas, establishment of firebreaks, among others). Evaluation and monitoring of reforested / enriched plots	There is little available area for reforestation. The number of seedlings produced does not meet the demand. Irrigation exceeds the preventive measures considered.	Climate variability and climate change effects affect reforested areas.	Other areas with potential for reforestation have been identified. There is information on nurseries with species required as an alternative for reforestation and/or enrichment. Fire risks and isolation status are monitored to prevent negative impacts on reforested areas. The replanting of dead seedlings in reforested plots is established in the contract. The progress of reforestation is monitored and evaluated. **Responsible**: MiAMBIENTE
2.4 Developed case studies of cost effectiveness of community projects.				
2.4.1 Ten Cost/effectiveness analysis of community projects developed by the AF, with experiences and lessons learned identified and systematized.	Selection of projects for cost-effectiveness analysis related to output 1.1 Establishment of a framework for the cost/effectiveness analysis process of projects. Development of a consultation process and systematization of results. Validation of the results of the cost-effectiveness study with its lessons learned. Dissemination of results.	Systematized information is scarce or there are gaps in information about periods.	N/A	During the monitoring and evaluation of this product, the information records are reviewed according to established indicators. The subproject that keeps records systematically and that does not allow for adequate analysis is replaced. No environmental, economic or social impacts are expected since it is an activity of gathering, analyzing and systematizing information. The impacts of the selected subprojects are described in output 1.1 **Responsible**: MIDA, MiAMBIENTE, ARAP and ATP according to their competencies.

Anexo 3

Figura 1. Sea level rise projection for Chame district

Figure 2. Sea level rise projection for Chitré district

Figure 3. Sea level rise projection for the San Carlos district

Figure 4. Sea level rise projection for the Chorrera district

Figure 5. Sea level rise projection for the Parita district

Figure 6. Sea level rise projection for the Natá district

Figure 7. Sea level rise projection for the Capira distric

Figure 8. Sea level rise projection for the Anton distric

Figure 9. Sea level rise projection for the Aguadulde district

Anexo 4

Table 2.29. Social, economic and environmental benefits of the Program, by component.

COMPONENT	SOCIAL BENEFITS	ECONOMIC BENEFITS	ENVIRONMENTAL BENEFITS
1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions.	• Improved food safety. • Higher level of participation and dialogue with stakeholders. • Population with less risk exposure due to climate-resistant sources of income and adapted livelihoods. • Improved awareness of fair and responsible consumers regarding goods and services from the program area. • Better access to water for households (for consumption and for irrigation in areas of hydrological stress).	• Greater income generation for program participants. • Discourage the unsustainable exploitation of fishery resources, avoiding the total loss of sources of income for coastal communities. • Increase productivity per hectare of farm. • Use of low-cost technologies. • Generate evidence to support the hypothesis that financial risk to support adaptation initiatives could be appropriately quantified and managed. • Encourage microfinance for the coastal marine sector with adaptation and climate risk considerations. • Access to resources for prioritized actions for adaptation to global climate change through FONACC	• Soil erosion and flood control. • Water purification and biological control. • Benefits for biodiversity. • Aesthetic and recreational values for the communities involved in the project. • Recovery of high value ecosystems and improvement of connectivity, through reforestation, enrichment or restoration. • Protection of blue carbon sink ecosystem services.
2. Improve local and national capacity to face exposure to climate-related hazards and threats, through planning tools and risk reduction systems.	• Early warning systems save lives and help protect livelihoods. • Local authorities are better able to evacuate or shelter people in advance; and have a faster response to situations of climatic vulnerability. • Informed decisions produce positive impacts on food security and social well-being. • Improved response capacity to extreme weather events: more communities and people trained. • Availability of climate information and data to stakeholders - public and private - on an equal access basis. • Higher level of participation and dialogue with stakeholders. • Municipalities that actively participate in adaptation actions. • Sustainable livelihoods.	• Access to information generated on the levels of vulnerability and risks in the program area. • inclusion of climatic considerations in land planning, land and environmental management activities. • Potential economic losses -due to extreme events- avoided through strengthened SATs. • Information available to consider climate risks in public and private sector project investments. • More informed decisions result in positive impacts on production and diversified incomes of the vulnerable population. • The evaluation of the monitoring system can increase the number of potential beneficiaries. • Greater possibility of success selecting suitable productive activities (and cost-effective) and compatible areas to increase their performance and economic benefits.	• Development process for the next years based on planning and management tools that consider vulnerability and climate risks. • Prevention of risks on a larger scale and generation of agroclimatic and hydrological information whose analysis can contribute to different adaptation processes (planning, management, agro-production, among others). • Updated management plan with data on climate change and a clear understanding of future scenarios for the region. • Access to better data to help make informed decisions about the protection of conservation sites; restore heavily intervened areas; and adapt to climate change.

3. Strengthen the capacity of stakeholders and improve knowledge on climate adaptation and resilience at the local and national levels, with gender perspective.	• Dimension of climate change included in the decision-making processes of local organizations. • Up-to-date information on adaptation available for public use (increased capacity to develop and implement efficient approaches to adaptation to climate change). • Users of ecosystem goods and services and institutions with related competencies (water, agricultural production, fisheries resources, environment, land use planning, local authority and others) use climate data on a regular basis for planning, budgeting and reporting purposes. • Higher level of participation and dialogue with stakeholders. • Strengthening national and local capacities for participation and inclusion with a gender perspective. • Incorporation of the gender perspective by participation and dedication share in the program.	• Increased capacity to develop and implement efficient climate change adaptation approaches that lead to the protection of property and income of communities in the Central Pacific climate region. • Greater equity in the benefits derived from the implementation of project activities. • Future planning and analysis carried out at different levels using climate data. • Updating of adaptation information available for public use, to make informed decisions about the economy.	• Increased knowledge and awareness about climate change and its impacts will help raise awareness about protecting the environment. • Dimension of climate change included in the decision-making processes of local organizations with gender perspective. • Increased public awareness of the causes of climate change, impacts and adaptation options. • Improved understanding of adaptation experiences, translated into improvements in adaptation project planning and implementation skills, both locally and nationally. • Implementation of the National Plan of Gender and Climate Change.

Anexo 5

Table 2.30. Criteria for the selection of beneficiaries by proposed outcomes and outputs

Expected outcomes	Expected concrete outputs	Criteria for the selection of beneficiaries
1.1 Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems.	At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based technologies and solutions.	• Small farmers. • Physical location of the farms. • Interest and commitment to the farm management plan process. • Co-financing commitment in cash or in kind (manpower) depending on financial capacity; willingness to participate in replication activities; Long-term legal commitment through the formalization of the farm management plan. • Site connectivity with prioritized ecosystem values. • Potential general and local benefits of adaptation to climate change. • Equal participation of women.
	Installed at least 4 apiaries and about 12 hives, including the training of beneficiaries (beekeepers) and the provision of equipment.	• Small farmers. • Possibility of improving productivity per unit of production. • Co-financing commitment in cash or in kind (manpower) depending on financial capacity; willingness to participate in replication activities. • Equal participation of women. • Equity in the distribution of benefits (similar support for all). • Limited access to traditional financial sources.
	Installed at least four oyster farming pilot experiences, including training of beneficiaries and provision of equipment.	• Families in a condition of socioeconomic vulnerability, with a background in the activity, according to updated inventories of the ARAP-MiAmbiente. • Commitment to complete the pilot project cycle. • Equal participation of women. • Equity in the distribution of benefits (similar support for all).
	12 projects of integral home gardens with water harvesting and drip irrigation systems established.	• Families in a socioeconomic vulnerability condition, with a background in the activity, according to updated information provided by MIDA. • Equity in the distribution of benefits: similar coverage of the productive model for all. • Establish a maximum limit and an average area for the garden. • Responsibility of the user with the conservation of water. • Identification of the type of soil and crop. • Equal participation of women. • Co-financing commitment in cash or in kind (manpower) depending on financial capacity; willingness to participate in replication activities.
	Installed at least 3 pilot tilapia farming projects with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell.	• Families in a socioeconomic vulnerability condition, with a background in the activity, according to updated inventories of the ARAP-MiAmbiente. • Commitment to complete the pilot project cycle. • Commitment to transfer knowledge to other producers. • Equal participation of women. • Equity in the distribution of benefits (similar support for all).

	Three experiences of community tourism strengthened including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience.	• Communities with a background in the activity, according to updated inventories of the ATP-MiAmbiente. • Commitment of the participating communities to complete the cycle of the pilot project. • Commitment to transfer knowledge to other residents who are interested in the activity. • Equal participation of women. • Equity in the distribution of benefits (similar support for all).
	12 pilot community fishing projects developed with the incorporation of nature- based technologies and solutions.	• Families in a socioeconomic vulnerability condition, with a background in the activity, according to updated inventories of the ARAP-MiAmbiente. • Commitment to complete the pilot project cycle. • Commitment to transfer knowledge to other producers. • Equal participation of women. • Equity in the distribution of benefits (similar support for all).
1.2 Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services.	Ten business plans prepared and implemented for products or services with the greatest potential in the program.	• Existence of commercial potential. • Families in a condition of socioeconomic vulnerability, with a background in the activity, and who are participants in productive activities served by the program. • Commitment to complete the technical and financial cycle of the project. • With limited access to traditional financing sources. • Commitment to transfer knowledge to other producers. • Equal participation of women. • Equity in the distribution of benefits (similar support for all).
1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.	Improved management of five rural aqueducts in the program.	• Communities in a condition of environmental and socioeconomic vulnerability, according to updated information to be provided by MINSA-MiAmbiente. • Physical location of the aqueduct. • Equity in the distribution of benefits for the five communities: similar coverage for all, adjusted to the initial condition of the aqueduct. • Interest, responsibility and commitment of the JAAR with the project. • Equal participation of women.
	20 multipurpose water harvesting systems installed using efficient and low-cost technologies.	• Families in a socioeconomic vulnerability condition, according to updated information provided by MIDA-MiAmbiente. • Climate vulnerability: beneficiaries are affected by severe recurrent droughts and / or contaminated water sources, according to information provided by SINAPROC, MIDA. • Equity in the distribution of benefits: similar system coverage for all. • Responsibility of the user with the conservation of water. • Equal participation of women. • Commitment to transfer knowledge to other producers.

1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems. .	Installed and operating at least two community nurseries in the program area.	• Communities in a condition of environmental and socioeconomic vulnerability. • Location close to high value ecosystems and offer a better opportunity to create connectivity between currently isolated segments. • Equity in the distribution of benefits for the two communities. • Interest, responsibility and commitment of the community with the project. • Equal participation of women.
	150 ha of high value ecosystems reforested, enriched and / or restored.	• Communities in condition of environmental and socioeconomic vulnerability. • Location in high value ecosystems for the environmental goods and services that they provide. • Opportunity to create or restore connectivity. • Interest, responsibility and commitment of the communities involved with the project. • Equal participation of women.
2.1 Developed baseline studies on climate change with application in planning and environmental land management	Three environmental land management plans for prioritized districts.	The criteria for your prioritization are: Marine - coastal areas vulnerable to the rise of sea level, with populations categorized as highly vulnerable according to the Environmental Atlas of the Ministry of Environment of the Year 2010. Towns that will disappear according to the projections of rising sea level at 2050 of MiAmbiente u Central Climate. High level of vulnerability according to the Vulnerability Index to Climate Change 2021. A low human development index. High poverty values according to the UNDP multidimensional poverty (IPM) index, 2015.
	Ten municipal strategic plans that incorporate environmental information, adaptation actions and strengthening of climate resilience in their territories.	These districts have district strategic plans; an update of them is proposed including environmental information and adaptation actions and strengthening of climate resilience in their territories. The Strategic District Plans of La Chorrera, Parita, Capira and Aguadulce are valid until 2022, meanwhile those of Anton and Natá were valid until 2019. The criteria for their selection were: Affected by the sea level rise, which requires establishing adaptation actions to climate change. High frequency of flooding. They are a source of important livelihoods such as fishing, aquaculture, among others. Plans do not have strategic lines related to climate change.
3.1 Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences	Training Plan for key actors on climate change and ecosystem-based adaptation.	With a presence in the area of the program and interest in the objectives of this. Academic / experience requirements based on the technical specifications of the course / training. Equity in the distribution of benefits for inhabitants of the communities of the program. Interest, responsibility and commitment to the project. Equal participation of women.

implemented.		
3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities	Prepared an action plan for the integration of the gender perspective in the project aligned with the National Gender and Climate Change Plan of Panama, which must include actions to strengthen and include gender in project activities.	Interested parties, including institutions and beneficiaries for gender strengthening. Beneficiaries who live in the communities of the area's coastal districts. Participation of vulnerable groups: women, youth, the elderly.
3.3 Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation, and comprehensive project management.	Designed and developed special training modules for implementation of adaptation strategies and plans at local level and project management for 200 beneficiaries.	With the presence / experience in the area of the program and interest in the objectives of this. Academic / experience requirements based on the technical specifications of the course / training. Equity in the distribution of benefits for CBO and municipalities in the program area. Interest, responsibility and commitment to the project. Equitable participation of women and men.
3.4 Escalation of knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a Program for	A comprehensive knowledge management program has been designed with indicators that facilitate its evaluation and a strengthened adaptation platform. Systematized experiences and lessons learned.	• With presence in the program area and interest in its objectives. • Interest, responsibility, and commitment to the project. • Equal participation of women.

systematizing experiences, lessons learned and their appropriation.		
3.5 Ensured the communication actions of the program that provide information to its stakeholders.	Communication plan prepared and implemented to ensure the dissemination of information to the different interest groups of the program: training opportunities, project benefits, results, experiences, lessons learned, and education and awareness campaigns.	The communicative language must be inclusive, considering the different interest groups and vulnerable groups and complementing/facilitating compliance with the knowledge management strategy and the gender perspective integration plan of the program.

Annex 6

Fundación Natura: Environmental and social safeguards

Versión: 1	Fecha de revisión 11/03/15	Página 1 de 2	Políticas Contra la Corrupción

Formulario de Reporte por Inobservancia a las Salvaguardas Ambientales y Sociales de la Fundación Natura

Descripción textual del hecho reportado (lo más detallado posible):

_____
_____
_____

Identifique la salvaguarda específica que se ha inobservado:

_____
_____

¿La práctica reportada ha ocasionado algún tipo de consecuencia en razón a su comisión?

_____
_____

Datos de la persona que formula el reporte:

Primer Nombre_____ Segundo Nombre _____

Primer Apellido _____ Segundo Apellido _____

Número de identificación personal: _____

Organización _____

Puesto que ocupa: _____

Correo electrónico _____

Teléfono fijo _____ Teléfono celular _____

Dirección completa:

País _____ Provincia _____ Distrito _____

Corregimiento _____ Lugar poblado (o barriada) _____

Calle _____ Número de casa _____

Datos de las personas físicas y/o jurídicas involucradas (favor especificar nombres completos ya sean de personas como de organizaciones y aporte la mayor cantidad de información posible sobre estas y sobre el hecho en cuestión):

_____
_____
_____

Firma: Fecha y lugar:

Enviar formulario a: quejas@naturapanama.org ó entregarlo en sobre cerrado con el distintivo **SALVAGUARDAS**.

El reporte presentado tiene como única finalidad tomar las acciones efectivas que eviten recurrencias de situaciones similares que afecten el resultado de nuestras actividades. Agradecemos su aporte el cual nos permite actuar con transparencia y mejorar continuamente.

Nota:

1. Todos los campos son obligatorios y deben responderse en forma precisa y completa, con letra legible a fin de poderlo atender de manera oportuna.
2. Anexe tantas hojas sean necesarias para completar la información solicitada.

Annex 7

Annex 7.1. Financial analysis of oyster farming

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ACTIVIDAD - OSTRAS

PROYECCIONES FINANCIERAS

Items	Año 1
paquetes de docena de ostras	2916
ciclo por año / unidad productiva	1.5
producción docenas por año	4374
Precio paquete (docena)	B/. 10.00
Ingresos proyectado por año	B/. 43,740.00
Merma 15%	***B/. 6,561.00***
Ingreso Bruto (menos merma 15%)	***B/. 37,179.00***
costos directos por año	B/. 5,426.40
salarios	B/. 12,960.00
otros gastos administrativos	B/. 1,000.00
Inversión	***B/. 55,000.00***

ACTIVIDAD - OSTRAS

PROYECCIONES FINANCIERAS

Items	Año 1
paquetes de docena de ostras	2916
ciclo por año / unidad productiva	1.5
producción docenas por año	4374
Precio paquete (docena)	B/. 10.00
Ingresos proyectado por año	B/. 43,740.00
costos directos por año	B/. 5,426.40
salarios	B/. 12,960.00
otros gastos administrativos	B/. 1,000.00
Inversión	B/. 55,000.00

ACTIVIDAD - OSTRAS

ESTADO DE RESULTADOS Y FLUJO DE CAJA PROYECTADOS - 10 AÑOS

	Años										
Estado de Resultados	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
Caja Inicial	***B/. 0.00***	***B/. 20,324.60***	***B/. 40,649.20***	***B/. 60,973.80***	***B/. 81,298.40***	***B/. 101,623.00***	***B/. 121,947.60***	***B/. 142,272.20***	***B/. 162,596.80***	***B/. 182,921.40***	***B/. 81,298.40***
Ingresos proyectados	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 437,400.00
Merma 15%	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 40,290.00
Costos directos	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 54,264.00
Ganancia Bruta	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 34,284.60**	**B/. 342,846.00**
Salarios	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 129,600.00
Otros gastos administrativos	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 10,000.00
Utilidad Neta	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 20,324.60**	**B/. 203,246.00**
Rentabilidad	***46.5%***	***46.5%***	***46.5%***	***46.5%***	***46.5%***	***46.5%***	***46.5%***	***46.5%***	***46.5%***	***46.5%***	***46.5%***
Flujo Neto de Caja anual	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 20,324.60	B/. 81,298.40
Caja Final	***B/. 20,324.60***	***B/. 40,649.20***	***B/. 60,973.80***	***B/. 81,298.40***	***B/. 101,623.00***	***B/. 121,947.60***	***B/. 142,272.20***	***B/. 162,596.80***	***B/. 182,921.40***	***B/. 203,246.00***	***B/. 162,596.80***

ACTIVIDAD - OSTRAS

ESTADO DE RESULTADOS Y FLUJO DE CAJA PROYECTADOS - 10 AÑOS

	Años										
Estado de Resultados	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
Caja Inicial	***B/. 0.00***	***B/. 24,353.60***	***B/. 48,707.20***	***B/. 73,060.80***	***B/. 97,414.40***	***B/. 121,768.00***	***B/. 146,121.60***	***B/. 170,475.20***	***B/. 194,828.80***	***B/. 219,182.40***	***B/. 97,414.40***
Ingresos proyectados	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 43,740.00	B/. 437,400.00
Costos directos	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 5,426.40	B/. 54,264.00
Ganancia Bruta	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 38,313.60**	**B/. 383,136.00**
Salarios	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 12,960.00	B/. 129,600.00
Otros gastos administrativos	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 10,000.00
Utilidad Neta	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 24,353.60**	**B/. 243,536.00**
Rentabilidad	***55.7%***	***55.7%***	***55.7%***	***55.7%***	***55.7%***	***55.7%***	***55.7%***	***55.7%***	***55.7%***	***55.7%***	***55.7%***
Flujo Neto de Caja anual	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 24,353.60	B/. 97,414.40
Caja Final	***B/. 24,353.60***	***B/. 48,707.20***	***B/. 73,060.80***	***B/. 97,414.40***	***B/. 121,768.00***	***B/. 146,121.60***	***B/. 170,475.20***	***B/. 194,828.80***	***B/. 219,182.40***	***B/. 243,536.00***	***B/. 194,828.80***

ACTIVIDAD - OSTRAS

TASA INTERNA DE RETORNO / VALOR ACTUAL NETO

INVERSION	**TiR**	**TD**		**Pasos**
55,000.00	**35.13%**	**35.13%**		1. Inversión
Flujo Act.	**55,005.52**	**55,005.52**		2. Flujos Neto
VAN≈	**5.52**	**5.52**		3. Tasa de Descuento
				4. TIR
Flujo Neto	203,246.00	203,240.48		
Inversión	55,000.00	55,000.00		
Excedente	**148,246.00**	**148,240.48**	-5.52	

n	FLUJOS NETO	TIR		TD	
		$(1+i)^n$	Flujo Act.	$(1+i)^n$	Flujo Act.
1	20,324.60	1.3513	15,040.78	1.3513	15,040.78
2	20,324.60	1.8260	11,130.60	1.8260	11,130.60
3	20,324.60	2.4675	8,236.95	2.4675	8,236.95
4	20,324.60	3.3343	6,095.58	3.3343	6,095.58
5	20,324.60	4.5057	4,510.90	4.5057	4,510.90
6	20,324.60	6.0885	3,338.19	6.0885	3,338.19
7	20,324.60	8.2274	2,470.36	8.2274	2,470.36
8	20,324.60	11.1177	1,828.13	11.1177	1,828.13
9	20,324.60	15.0233	1,352.87	15.0233	1,352.87
10	20,324.60	20.3010	1,001.16	20.3010	1,001.16
Total	**203,246.00**		**55,005.52**		**55,005.52**

ACTIVIDAD - OSTRAS					
TASA INTERNA DE RETORNO / VALOR ACTUAL NETO					
INVERSION		**TiR**	**TD**		**Pasos**
55,000.00		**43.04%**	**43.04%**		1. Inversión
	Flujo Act.	**55,005.61**	**55,005.61**		2. Flujos Neto
	VAN≈	**5.61**	**5.61**		3. Tasa de Descuento
					4. TIR
	Flujo Neto	243,536.00	243,530.39		
	Inversion	55,000.00	55,000.00		
	Excedente	**188,536.00**	**188,530.39**	-5.61	

n	FLUJOS NETO	TIR		TD	
		$(1+i)^n$	Flujo Act.	$(1+i)^n$	Flujo Act.
1	24,353.60	1.4304	17,025.73	1.4304	17,025.73
2	24,353.60	2.0460	11,902.77	2.0460	11,902.77
3	24,353.60	2.9267	8,321.29	2.9267	8,321.29
4	24,353.60	4.1863	5,817.46	4.1863	5,817.46
5	24,353.60	5.9881	4,067.01	5.9881	4,067.01
6	24,353.60	8.5653	2,843.27	8.5653	2,843.27
7	24,353.60	12.2519	1,987.74	12.2519	1,987.74
8	24,353.60	17.5251	1,389.64	17.5251	1,389.64
9	24,353.60	25.0679	971.51	25.0679	971.51
10	24,353.60	35.8571	679.19	35.8571	679.19
Total	**243,536.00**		**55,005.61**		**55,005.61**

Analysis: Investment – Costs – Income – Profitability – IRR

For the oyster production and marketing project, an initial investment in infrastructure, inputs, and start-up of the activity was estimated for the sum of B/.55,000.00. With parameters of 1.5 cycles per year, calculated according to the productive capacity of 2,916 dozen oysters per cycle, generating 4,374 dozen per year, the conservative estimated price for sale per dozen is B/.10.00 / dozen, totaling annual income of B/.43,740.00.

Annual direct production costs were estimated for the sum of B/.5,426.40, therefore, the unit cost per dozen would be B/.1.24 / dozen, salaries and other annual administrative expenses obtained were B/.13,960.00.

The annually projected income, established conservatively, without proposing an increase in production or price, with the purpose of being as strict as possible and not generating growth expectations that imply scenarios at the time, due to any unforeseen event, possibly difficult to achieve. Under this real scenario, the gross profit obtained is B/.38,313.60; After covering salary and administrative expenses, the net profit would be B/.24,353.60 annually, which is a profitability of 46.5~~55.7~~%.

Considering the annual profit, as the net flow of each year, the equilibrium point is reached in the third year, since the accumulated flow would be B/.73,060.80, which covers the initial investment of B/.55,000.00 with a rate internal return (IRR) of 35.13~~43.04~~%.

Annex 7.2 Financial analysis of tilapia farming with the use of geomembranes.

ACTIVIDAD - TILAPIA

PROYECCIONES FINANCIERAS

Items	Año 1
libras de producción	1975
ciclo por año / unidad productiva	3
# estanques	4
Precio / libra	B/. 1.70
Ingresos proyectado por año	B/. 40,290.00
Merma 10%	***B/. 4,029.00***
Ingreso Bruto (menos merma 10%)	***B/. 36,261.00***
costos directos por año	B/. 16,650.00
salarios y gastos administrativos	B/. 14,700.00
otros gastos administrativos	B/. 1,000.00
Inversión	***B/. 30,000.00***

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ACTIVIDAD - TILAPIA

PROYECCIONES FINANCIERAS

Items	Año 1
libras de producción	1975
ciclo por año / unidad productiva	3
# estanques	4
Precio / libra	B/. 1.70
Ingresos proyectado por año	B/. 40,290.00
costos directos por año	B/. 16,650.00
salarios y gastos administrativos	B/. 14,700.00
otros gastos administrativos	B/. 1,000.00
Inversión	B/. 30,000.00

ACTIVIDAD - TILAPIA

ESTADO DE RESULTADOS Y FLUJO DE CAJA PROYECTADOS - 10 AÑOS

	Años										
Estado de Resultados	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
Caja Inicial	***B/. 0.00***	***B/. 3,911.00***	***B/. 7,822.00***	***B/. 11,733.00***	***B/. 15,644.00***	***B/. 19,555.00***	***B/. 23,466.00***	***B/. 27,377.00***	***B/. 31,288.00***	***B/. 35,199.00***	***B/. 15,644.00***
Ingresos proyectados	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 402,900.00
Merma 10%	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 4,029.00	B/. 40,290.00
Costos directos	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 166,500.00
Ganancia Bruta	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 19,611.00**	**B/. 196,110.00**
Salarios	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 147,000.00
Otros gastos administrativos	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 10,000.00
Utilidad Neta	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 3,911.00**	**B/. 39,110.00**
Rentabilidad	***9.7%***	***9.7%***	***9.7%***	***9.7%***	***9.7%***	***9.7%***	***9.7%***	***9.7%***	***9.7%***	***9.7%***	***9.7%***
Flujo Neto de Caja anual	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 3,911.00	B/. 15,644.00
Caja Final	***B/. 3,911.00***	***B/. 7,822.00***	***B/. 11,733.00***	***B/. 15,644.00***	***B/. 19,555.00***	***B/. 23,466.00***	***B/. 27,377.00***	***B/. 31,288.00***	***B/. 35,199.00***	***B/. 39,110.00***	***B/. 31,288.00***

ACTIVIDAD - TILAPIA

ESTADO DE RESULTADOS Y FLUJO DE CAJA PROYECTADOS - 10 AÑOS

	Años										
Estado de Resultados	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
Caja Inicial	***B/. 0.00***	***B/. 7,940.00***	***B/. 15,880.00***	***B/. 23,820.00***	***B/. 31,760.00***	***B/. 39,700.00***	***B/. 47,640.00***	***B/. 55,580.00***	***B/. 63,520.00***	***B/. 71,460.00***	***B/. 31,760.00***
Ingresos proyectados	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 40,290.00	B/. 402,900.00
Costos directos	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 16,650.00	B/. 166,500.00
Ganancia Bruta	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 23,640.00**	**B/. 236,400.00**
Salarios	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 14,700.00	B/. 147,000.00
Otros gastos administrativos	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 10,000.00
Utilidad Neta	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 7,940.00**	**B/. 79,400.00**
Rentabilidad	***19.7%***	***19.7%***	***19.7%***	***19.7%***	***19.7%***	***19.7%***	***19.7%***	***19.7%***	***19.7%***	***19.7%***	***19.7%***
Flujo Neto de Caja anual	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 7,940.00	B/. 31,760.00
Caja Final	***B/. 7,940.00***	***B/. 15,880.00***	***B/. 23,820.00***	***B/. 31,760.00***	***B/. 39,700.00***	***B/. 47,640.00***	***B/. 55,580.00***	***B/. 63,520.00***	***B/. 71,460.00***	***B/. 79,400.00***	***B/. 63,520.00***

ACTIVIDAD - TILAPIA

TASA INTERNA DE RETORNO / VALOR ACTUAL NETO

INVERSION	**TiR**	**TD**		**Pasos**
30,000.00	***23.17%***	***23.17%***		1. Inversión
Flujo Act.	**30,004.18**	**30,004.18**		2. Flujos Neto
VAN≈	**4.18**	**4.18**		3. Tasa de Descuento
				4. TIR
Flujo Neto	79,400.00	79,395.82		
Inversión	30,000.00	30,000.00		
Excedente	**49,400.00**	**49,395.82**	-4.18	

n	FLUJOS NETO	TIR		TD	
		$(1+i)^n$	Flujo Act.	$(1+i)^n$	Flujo Act.
1	7,940.00	1.2317	6,446.37	1.2317	6,446.37
2	7,940.00	1.5171	5,233.72	1.5171	5,233.72
3	7,940.00	1.8686	4,249.19	1.8686	4,249.19
4	7,940.00	2.3015	3,449.85	2.3015	3,449.85
5	7,940.00	2.8348	2,800.89	2.8348	2,800.89
6	7,940.00	3.4916	2,274.00	3.4916	2,274.00
7	7,940.00	4.3007	1,846.23	4.3007	1,846.23
8	7,940.00	5.2971	1,498.93	5.2971	1,498.93
9	7,940.00	6.5245	1,216.96	6.5245	1,216.96
10	7,940.00	8.0362	988.03	8.0362	988.03
Total	**79,400.00**		**30,004.18**		**30,004.18**

ACTIVIDAD - TILAPIA

TASA INTERNA DE RETORNO / VALOR ACTUAL NETO

INVERSION		TiR	TD		Pasos
30,000.00		5.14%	5.14%		1. Inversión
	Flujo Act.	29,995.43	29,995.43		2. Flujos Neto
	VAN≈	-4.57	-4.57		3. Tasa de Descuento
					4. TIR
	Flujo Neto	39,110.00	39,114.57		
	Inversión	30,000.00	30,000.00		
	Excedente	9,110.00	9,114.57	4.57	

n	FLUJOS NETO	TIR		TD	
		$(1+i)^n$	Flujo Act.	$(1+i)^n$	Flujo Act.
1	3,911.00	1.0514	3,719.80	1.0514	3,719.80
2	3,911.00	1.1054	3,537.95	1.1054	3,537.95
3	3,911.00	1.1623	3,364.99	1.1623	3,364.99
4	3,911.00	1.2220	3,200.49	1.2220	3,200.49
5	3,911.00	1.2848	3,044.02	1.2848	3,044.02
6	3,911.00	1.3509	2,895.21	1.3509	2,895.21
7	3,911.00	1.4203	2,753.67	1.4203	2,753.67
8	3,911.00	1.4933	2,619.05	1.4933	2,619.05
9	3,911.00	1.5700	2,491.01	1.5700	2,491.01
10	3,911.00	1.6507	2,369.23	1.6507	2,369.23
Total	**39,110.00**		**29,995.43**		**29,995.43**

Analysis: Investment – Costs – Income – Profitability – IRR

For the tilapia production and marketing project, an initial investment in infrastructure, inputs, and start-up of the activity was estimated for the sum of B/.30,000.00. With parameters of 3 cycles per year, 4 production tanks (water mirrors) and each tank produces per cycle, an approximate of 1,975 pounds calculated, and that at a conservative estimated price for sale per pound of B/.1.70 / pound, Annual income totals B/.40,290.00.

Annual direct production costs were estimated for the sum of B/.16,650.00, therefore, for the pounds produced in a year, which are 23,700, generate a unit cost per pound of B/.0.7025 / pound, while salaries and other annual administrative expenses obtained were B/.15,700.00.

The annually projected income, established conservatively, without proposing an increase in production or price, with the purpose of being as strict as possible and not generating growth expectations that imply scenarios at the time, due to any unforeseen event, possibly difficult to achieve. Under this real scenario, the gross profit obtained is B/.23,640.00; After covering salary and administrative expenses, the net profit would be B/.7,940.00 annually, which is a profitability of ~~1~~9.7%.

Considering the annual profit, as the net flow of each year, the equilibrium point is reached in the fourth year, since the accumulated flow would be B/.31,700.00, which covers the initial investment of B/.30,000.00 with a rate internal return (IRR) of 5.14~~23.17~~%.

ACTIVIDAD - PESCA COMUNITARIA SOSTENIBLE

PROYECCIONES FINANCIERAS

Items	Año 1
# capacidad de libras por bote	150
# salidas mensuales	8
# meses	12
precio / libra	B/. 2.50
Ingresos proyectado por año	B/. 36,000.00
costos directos por año	B/. 15,000.00
salarios y gastos administrativos	B/. 7,000.00
otros gastos administrativos	B/. 1,000.00
Inversión	B/. 35,000.00

ACTIVIDAD - PESCA COMUNITARIA SOSTENIBLE

ESTADO DE RESULTADOS Y FLUJO DE CAJA PROYECTADOS - 10 AÑOS

	Años										
Estado de Resultados	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
Caja Inicial	***B/. 0.00***	***B/. 13,000.00***	***B/. 26,000.00***	***B/. 39,000.00***	***B/. 52,000.00***	***B/. 65,000.00***	***B/. 78,000.00***	***B/. 91,000.00***	***B/. 104,000.00***	***B/. 117,000.00***	***B/. 52,000.00***
Ingresos proyectados	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 36,000.00	B/. 360,000.00
Costos directos	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 15,000.00	B/. 150,000.00
Ganancia Bruta	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 21,000.00**	**B/. 210,000.00**
Salarios	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 7,000.00	B/. 70,000.00
Otros gastos administrativos	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 1,000.00	B/. 10,000.00
Utilidad Neta	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 13,000.00**	**B/. 130,000.00**
Rentabilidad	***36.1%***	***36.1%***	***36.1%***	***36.1%***	***36.1%***	***36.1%***	***36.1%***	***36.1%***	***36.1%***	***36.1%***	***36.1%***
Flujo Neto de Caja anual	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 13,000.00	B/. 52,000.00
Caja Final	***B/. 13,000.00***	***B/. 26,000.00***	***B/. 39,000.00***	***B/. 52,000.00***	***B/. 65,000.00***	***B/. 78,000.00***	***B/. 91,000.00***	***B/. 104,000.00***	***B/. 117,000.00***	***B/. 130,000.00***	***B/. 104,000.00***

ACTIVIDAD - PESCA COMUNITARIO SOSTENIBLE

TASA INTERNA DE RETORNO / VALOR ACTUAL NETO

INVERSION		TiR	TD		Pasos
35,000.00		35.34%	35.34%		1. Inversión
	Flujo Act.	35,001.43	35,001.43		2. Flujos Neto
	VAN≈	1.43	1.43		3. Tasa de Descuento
					4. TIR
	Flujo Neto	130,000.00	129,998.57		
	Inversión	35,000.00	35,000.00		
	Excedente	95,000.00	94,998.57	-1.43	

n	FLUJOS NETO	TIR		TD	
		$(1+i)^n$	Flujo Act.	$(1+i)^n$	Flujo Act.
1	13,000.00	1.3534	9,605.44	1.3534	9,605.44
2	13,000.00	1.8317	7,097.26	1.8317	7,097.26
3	13,000.00	2.4790	5,244.03	2.4790	5,244.03
4	13,000.00	3.3551	3,874.71	3.3551	3,874.71
5	13,000.00	4.5408	2,862.94	4.5408	2,862.94
6	13,000.00	6.1455	2,115.37	6.1455	2,115.37
7	13,000.00	8.3173	1,563.00	8.3173	1,563.00
8	13,000.00	11.2567	1,154.87	11.2567	1,154.87
9	13,000.00	15.2348	853.31	15.2348	853.31
10	13,000.00	20.6187	630.49	20.6187	630.49
Total	**130,000.00**		**35,001.43**		**35,001.43**

Analysis: Investment – Costs – Income – Profitability – IRR

For the sustainable community fishing production and marketing project, an initial investment in equipment (boats), inputs, and start-up of the activity was estimated for the sum of B/.35,000.00. With parameters of 8 trips to the sea per month, capacity of 150 pounds per boat, and at a conservative estimated price for sale per pound of B/.2.50 / pound, annual income of B/.36,000.00 is totaled.

Annual direct production costs were estimated for the sum of B/.15,000.00, therefore, for the pounds caught one year, which are 14,400, generate a unit cost per pound of B/.1,042 / pound, while salaries and Other annual administrative expenses obtained were B/.8,000.00.

The annually projected income, established conservatively, without proposing an increase in production or price, with the purpose of being as strict as possible and not generating growth expectations that imply scenarios at the time, due to any unforeseen event, possibly difficult to achieve. Under this real scenario, the gross profit obtained is B/.21,000.00; After covering salary and administrative expenses, the net profit would be B/.13,000.00 annually, which is a profitability of 36.1%.

Considering the annual profit, as the net flow of each year, the equilibrium point is reached in the third year, since the accumulated flow would be B/.39,000.00, which covers the initial investment of B/.35,000.00 with a rate internal return (IRR) of 35.34%.

ANEXO 7.4

Annex 7.4. Economic valuation of the main environmental goods and services of the mangroves of the Western Pacific of Panama.

Environmental service	Economic Value perspective of environmental goods and services flow	VET (US$ / year)
Provision		
Food: Snapper, snook, tuna, cherna, mix, black shells, other species.	The commercial value of the identified species will be estimated, considering the volume extracted by period and market prices. The contribution of this item to the local economy will be analyzed. The behavior of the catch will be determined for the last 5 years.	447,139
Raw materials: Mangrove bark	The commercial value of the mangrove bark will be estimated, considering the volume extracted and market prices. The contribution of this activity to the local economy will be analyzed.	124,800
Black shells	The commercial value of the black shell is estimated, considering the volume extracted and market prices. The contribution of this activity to the local economy is analyzed.	93,600
Regulation		
Carbon fixation (sink):	Based on satellite images and field visits, the type of mangrove species and the volume of biomass and CO2 per hectare are determined. The stored stock is avoided emission, which is multiplied by the voluntary market prices of CO2 equivalent.	9,857,576
Eroded soil retention	The universal formula for soil loss is applied and the sediment volume is determined. The percentage retained in the mangroves is estimated. The avoided cost of mitigating such sediment is considered.	16,363,615
Cultural		
Recreation and tourism:	The volume of tourists visiting ecotourism products is estimated. The percentage of traditional tourists visiting the mangroves will be estimated.	292,140
Habitat		
Hatchery: Habitat of species: fish, crustaceans, reptiles, mammals, birds.	An analysis of the status of these species has been made, however, it has not been translated into monetary values (except for the fishing that has market records).	
TOTAL		**27,178,870**

Annex 8

Table 2.35 Considering the expected products with the development of the program it will be followed the technical norms specific for these products.

Outcome/Outputs	AF ESP	Compliance with relevant legal or technical standards	Institution Responsible Standard Compliance (EE)*	Compliance: how it is fulfilled.
1.1 Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems.				
1.1.1 At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based technologies and solutions.	Compliance with the law, Access and Equity, Marginalized and Vulnerable, Groups, Gender Equity and Women's Empowerment, Core Labor Rights and Climate Change	- Resolution No. OAL-039-ADM-2022 Panama, March 30, 2022, application of the Guide for agricultural farm management plans.	MIDA: National Directorate of Livestock. Provincial Offices and Local Agencies. Agro-Environmental Unit and CC.	- Mandatory compliance with the standard established in the ToR and in the Contract (standard attached as part of the Contract). - Evaluation and monitoring of compliance with the standard by EE personnel. - Verification of compliance with the standard in product review and its approval. - Verification of compliance with the standard in Project Monitoring and Evaluation actions. Additionally, for all these outputs, the standards apply: Law 11 of April 15, 2016 and its regulations, Executive Decree 30 of June 24, 2019: Regulates agricultural traceability and animal and plant health safety for all agricultural products and by-products. The application of these rules is mandatory and will be defined in the ToR and Contract. Additionally, the responsible EE (MIDA) must assign qualified personnel to ensure compliance with this standard.
1.1.2 Installed at least 4 apiaries and about 12 hives, including the training of beneficiaries (beekeepers) and the provision of equipment.	Idem 1.	- Law 46 of August 31, 1989: regulates beekeeping activities. They indicate recommendations and specifications for Beekeeping Improvement and Development. - Law 46 of August 31, 1999: Considers animal and population safety standards, and hive density criteria by region.	MIDA: National Directorate of Livestock. MIDA Provincial Offices and Local Agencies.	
1.1.3 Installed at least four oyster farming pilot experiences, including training of beneficiaries and provision of equipment.	Compliance with the law, Access and Equity, Marginalized and Vulnerable Groups, Gender Equity and Women's Empowerment.	- Law No. 204 of March 18, 2021: regulate the activities of fishing, aquaculture and related activities, with the objective that they are carried out in a sustainable manner, using the appropriate methods that ensure the conservation, reproduction, production, renewal and permanence of aquatic resources.	ARAP: General Directorate of Research and Development of Panama.	
1.1.4 12 projects of integral home gardens with water harvesting and drip irrigation systems established.	Idem 1.	- Law No. 127 of March 3, 2020 that dictates measures for the development of family farming in Panama, through chapter III in its article 12, which recognizes the National Agriculture Plan as an instrument of Family Policy in Panama.	MIDA: Agro-environmental and Climate Change Unit / Rural Development Directorate.	
1.1.5 Installed at least 3 pilot tilapia farming projects with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell.	Idem 1.	- Idem Law No 204 of March 18, 2021.	ARAP: General Directorate of Research and Development of Panama.	

1.1.6 Ten experiences of community tourism strengthened including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy. Incorporating considerations for risk reduction and increased climate resilience.	Idem 1.	- Decree Law No. 4 of February 27, 2008: promotes the development, promotion and regulation of tourism as a priority activity of national interest, public utility and social interest. Identifies and protects tourist resources and their sustainable use, respecting the customs of its inhabitants and optimizing the quality of tourist services in accordance with international standards.	ATP: Tourism Planning and Development Directorate	
1.1.7 12 pilot community fishing projects developed with the incorporation of nature- based technologies and solutions.	Compliance with the law, Access and Equity, Marginalized and Vulnerable Groups and Gender Equity and Women's Empowerment	- Idem Law No 204 of March 18, 2021. - ADM/ARAP Resolution No.041 of July 21, 2022, granting a special authorization to carry out commercial fishing operations. - Executive Decree No. 33 of August 20, 1997; through which the fishing of certain species is regulated and other provisions are adopted.	ARAP: General Directorate of Research and Development.	
1.2 Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services.				
1.2.1 Ten business plans prepared and implemented for products or services with the greatest potential in the program.	Idem 1.	- No specific rules apply. Subject to the institution to which the business plan will be presented.		Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
1.2.2 Reports on strategic investments for the development of business plans and more specialized studies.	Idem 1.	- N/A		
1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.				
1.3.1 Improved management of five rural aqueducts in the program.	Idem 1.	- Resolution No. 713 of July 30, 2020 that approves and adopts the manual of Good Environmental Practices for aqueducts and Rural Sanitation Systems. It is mandatory for the actors involved in construction projects of Aqueducts and Rural Sanitation Systems.	Ministry of Health.	- Mandatory compliance with the standard established in the ToR and in the Contract (standard attached as part of the Contract). - Evaluation and monitoring of compliance with the standard by EE personnel. - Verification of compliance with the standard in product review and its approval. - Verification of compliance with the standard in Project Monitoring and Evaluation actions.
1.3.2 20 multipurpose water harvesting systems installed using efficient and low-cost technologies.	Compliance with the law, Access and Equity, Marginalized and Vulnerable Groups and Gender Equity and Women's Empowerment.	- Cabinet Resolution No. 114 of August 23, 2016. Approves the National Water Security Plan and establishes the National Water Council and the Technical Secretary who provide the guidelines for these issues. - Resolution of the Board of Directors No. 30-2007 of IDAAN. Compliance with quality standards for drinking water and wastewater approved by the Panamanian Commission of Industrial and Technical Standards of the	Water Safety Directorate / Ministry of Environment IDAAN	- Mandatory compliance with the standard established in the ToR and in the Contract (standard attached as part of the Contract). - Evaluation and monitoring of compliance with the standard by EE personnel. - Verification of compliance with the standard in product review and its approval. - Verification of compliance with the standard in Project Monitoring and Evaluation actions.

		Ministry of Commerce and Industries.		
1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems.				
1.4.1 Establishment of a finance Program for local climate action that allows financing adaptation actions through Programs proposed by CBOs and municipalities. 1.4.2 An action plan for the recovery of high-value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity. 1.4.3 Installed and operating at least two community nurseries in the program area. 1.4.4 150 ha of high value ecosystems reforested, enriched and / or restored.	Idem 1.	- Law No. 1 of February 3: 1994, establishes the Forest Legislation of the Republic of Panama. Gives the guidelines for the protection, conservation, education, growth, improvement, research, management and rational use of the forest resources of the Republic.	MiAMBIENTE: Forestry Directorate	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
2.1 Developed baseline studies on climate change with application in planning and environmental land management				
2.1.1 Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the program area. 2.1.2 A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPPC scenarios.	- Compliance with the law - Access and Equity - Climate Change	- N/A	- N/A	- Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
2.1.3 Three Environmental Land Management plans for prioritized districts.	Compliance with the law, Access and Equity and Climate Change	- Law 06 of 2006. It defines the instruments for Territorial Planning and the mechanisms for its preparation, approval, modification and execution.	MiAMBIENTE	- Mandatory compliance with the standard established in the ToR and in the Contract (standard attached as part of the Contract). - Evaluation and monitoring of compliance with the standard by EE personnel. - Verification of compliance with the standard in product review and its approval. - Verification of compliance with the standard in Project Monitoring and Evaluation actions.
2.1.4 Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories.	Compliance with the law, Access and Equity and Climate Change	- Executive Decree No. 135 of April 30, 2021. Regulating Chapter No. 1 of Title 5 of the Single Text of Law 41 of July 1, 1998, General Environmental Law of the Republic of Panama on Adaptation to Climate Change.	MiAMBIENTE: Climate Change Directorate	- Mandatory compliance with the standard established in the ToR and in the Contract (standard attached as part of the Contract). - Evaluation and monitoring of compliance with the standard by EE personnel. - Verification of compliance with the standard in product review and its approval. - Verification of compliance with the standard in Project Monitoring and Evaluation actions.
2.2 Strengthening the network of meteorological stations and tide gauges, and related Early Warning Systems				

2.2.1 Improved meteorological stations of the hydrographic basins of the Program area to generate complementary agroclimatic and hydrological information. 2.2.2 Acquired, installed and connected three sea level gauges to the national and global tsunami monitoring network. The Early Warning System for floods, waves and tsunamis strengthened for the Central Pacific sector of Panama.	- Compliance with the law - Access and Equity - Climate Change	- Law No. 209 of April 22, 2021: that creates the Institute of Meteorology and Hydrology of Panama. Establishes, plans, expands, operates and oversees the maintenance of hydrological agrometeorological and early warning systems in the national territory.	IMPHA	Mandatory compliance with the standard established in the ToR and in the Contract (standard attached as part of the Contract). - Evaluation and monitoring of compliance with the standard by EE personnel. - Verification of compliance with the standard in product review and its approval. - Verification of compliance with the standard in Project Monitoring and Evaluation actions.
2.3 Developed a platform for modeling climate vulnerability and environmental risk				
2.3.1 A climate vulnerability and environmental risk modeling platform installed and operating. 2.3.2 Protocol for the management of information and the use of the platform for modeling vulnerability and environmental risks.	- Compliance with the law - Climate Change	N/A	MiAMBIENTE	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
2.4 Developed case studies of cost effectiveness of community projects.				
2.4.1 Ten Cost/effectiveness analysis of community projects developed by the AF, with experiences and lessons learned identified and systematized	- Compliance with the law - Climate Change	- N/A	MiAMBIENTE	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
2.5 Strengthening the Monitoring and Evaluation System for Adaptation to Climate Change.				
2.5.1 Analysis of the implementation of the Monitoring and Evaluation System for Adaptation to climate change with evaluation of the results and goals set and with recommendations for improving the indicators and monitoring and evaluation protocols.		- Does not apply	MiAMBIENTE	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
3.1 The capacities of key actors on Climate Change and adaptation based on ecosystems have been strengthened and successful experiences implemented.				
3.1.1 Actors training plan on climate change and ecosystem-based adaptation. 3.1.2 Design of training modules with content validated by the Ministry of the Environment. 3.1.3 Evaluation reports of each training process developed.	Idem 1.	- Protocol for protection measures from COVID-19 - Executive Decree No. 285. Ministry of the Presidency that regulates Law 81 of 2019 on the protection of personal data.	Ministry of Health	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
3.2 Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities				
3.2.1 Action plan for the integration of the gender perspective in the project. 3.2.2. Reports on implementation and memories of gender capacity building	Idem 1.	- Protocol for protection measures from COVID-19 - Executive Decree No. 285. Ministry of the Presidency that regulates Law 81 of 2019 on the	Ministry of Health	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.

workshops		protection of personal data.		
3.3 Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation, and comprehensive project management.				
3.3.1 Designed and developed special training modules for implementation of adaptation strategies and plans at local level and project management for 200 beneficiaries. 3.3.2 Evaluation of capacity building processes.	Idem 1.	N/A	N/A	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
3.3.3 At least 15 proposals for adaptation Programs of CBOs and municipalities prepared.	Idem 1.	N/A	N/A	
3.3.4 Inter-municipal agreements established for the development of joint adaptation actions.	Compliance with the law and Access and Equity	N/A	N/A	
3.4 Escalation of knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a Program for systematizing experiences, lessons learned and their appropriation.				
3.4.1 A comprehensive knowledge management program has been designed with indicators that facilitate its evaluation and a strengthened adaptation platform. Systematized experiences and lessons learned. 3.4.2 Adaptation Platform strengthened and operating.	Idem 1.	N/A	N/A	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
3.4.3 Systematization of experiences and lessons learned from Programs carried out in the Program.	Idem 1.	N/A	N/A	
3.5 Ensured the communication actions of the program that provide information to its stakeholders.				
3.5.1 Design of tools to facilitate communication actions of the program.	Idem 1.	Include in the ToR that the communication specialist consultant must comply with a communicator license.	N/A	Monitoring of the responsible EE in accordance with the business plan and monitoring of the EI as part of the evaluation and monitoring actions.
3.5.2 Dissemination of program results, experiences, lessons learned, campaigns and opportunities to obtain benefits (training).			N/A	

Note: Government entities or institutions are responsible for compliance with standards and policies for production, health, and management of agricultural products and by-products. The implementation of the program is planned so that the program productive activities are developed under the technical guidance and supervision of the competent entities of each technical standard.

Annex 9

Table 2.36. Duplice of Program with other funding.

Project	Characteristics	Description
Project for the Bay of Parita and Guararé coast wetlands, EcoBio Panama, 2021	The Project is based on the conservation and management of the wetlands located between Ciénaga de las Macanas and Cenegón del Mangle, District of Parita, in the province of Herrera, as well as the mangroves and tropical dry forest of the corridor near the lower course of the Guararé river, District of Guararé, Province of Los Santos, both located in the Republic of Panama.	This project has been coordinated with the Directorates of Seas and Coasts, the Directorate of Protected Areas and Biodiversity, the Regional Directorates of MiAmbiente of the province of Herrera and Los Santos, the Regional Center of Wetlands of the Western Hemisphere (CREHO), and owners of farms in the surrounding towns. The Littoral Zone of La Enea was declared a protected area. This includes the area from the mouth of the Guararé River to the mouth of the Quebrada de Las Tablas Abajo, including mangroves and albinas on the land and a marine strip parallel to the coast 5 (five) kilometers wide. Synergy and actions without duplication The project provided an installed capacity in groups of fishermen for environmental monitoring of the sectors in which they work and presents a joint work with the NGO Eco-Bio Panamá. The project, despite being carried out in the study area of the proposal, does not present a duplication of actions and offer opportunities for synergies in Bahía de Parita, specifically in conservation and recovery of mangroves.
Protection of mangrove reserves and carbon sinks, and protected areas of Panama (IKI, Ministry of the Environment, Wetlands International, Conservation International, UNDP) (2014-2017- 3.2 M USD)	It demonstrates the contribution that mangrove ecosystems make to risk management and climate change from both an adaptation and mitigation perspective. This research improves understanding of carbon dynamics in mangroves and associated ecosystems in Panama. This knowledge is incorporated into national strategies and reported to international conventions.	Training in adaptation measures to Climate Change and mangrove conservation at the institutional and community level in conjunction with the Aquatic Resources Authority of Panama, Conservation International, Ministry of Environment, Municipalities of San Lorenzo, San Felix and Remedios, UNDP Panama, Wetlands International. The Project ended more tan 3 years ago. Synergy and actions without duplication The project provided an advance in the strengthening of capacities on measures to adapt to climate change and mangrove conservation, at the institutional and community level, these activities being a complement to component 3 of the proposal. Additionally, the project offers experiences that can be retaken by the program, in valuing the ecosystem services of the mangroves, the socioeconomic and environmental impact of rising sea levels at the site, as well as the design of municipal strategic plans with environmental information and vulnerability. to climate change. The project does not represent a duplication, but rather it is an advance in the restoration actions of the mangrove area, thus complementing the actions foreseen in component 1 of livelihoods. In this component,

		studies are expected to be carried out on the increase and decrease of the coverage of valuable ecosystems, to subsequently implement restoration actions in identified priority areas.
Program for adaptation to climate change through the integrated management of water resources in Panama (Adaptation Fund / Ministry of the Environment) (2018-2022)	This Adaptation Program to climate change, through the management of water resources in Panama, seeks to address this condition by placing water management at the center of adaptation efforts, promoting climate resilience, and reducing vulnerability through improvement of food and energy security, based on an integrated water resources management approach that highlights the nexus between water-energy-food-adaptation to climate change.	This program is currently under execution and will conclude before the end of the first semester of 2022. The project focuses on integrated watershed management using water as the axis of integration of actions for the application of nature-based solutions for water and food security at communities of the Santa María River Basin and the Chiriquí Viejo River Basin. Synergy and actions without duplication: Lessons learned and best production practices will be incorporated into the proposed program, such as sustainable production actions and water harvesting systems. The lessons learned to improve associativity between producers will be a useful input for component 3 of the proposal. There is no duplication due to the different scope and location; rather the incorporation of lessons and experiences is foreseen to generate greater impact in the new program.
Integrated Management of Watersheds (National Directorate	Establish integration mechanisms between civil society and public institutions as a platform for the administration of natural	This project is developed in conjunction with public entities such as the Ministry of the Environment, and civil society to work on the administration and distribution of environmental land use planning. Synergy and actions without duplication:
of Water Security / Ministry of the Environment)	resources, promoting citizen participation in decision-making, for the sustainable management of hydrographic basins.	Promote the development of the necessary instruments for the creation of administrative units, for the performance of planning, administration and management in the corresponding hydrographic basins through the generation of Environmental Territorial Planning Plans at the hydrographic basin level, generating POAT for the basins del Río la Villa (128), Río Indio (111) and Río Miguel de la Borda (109). There is no duplication due to its different scope and location. The experience generated can serve to strengthen governance in the program's watersheds.
National Strategy for the Small Grants Program Ministry of the Environment / UNDP in partnership with	National Strategy for the Small Grants Program 2020-2023 for environmental conservation, climate action and poverty alleviation in Panama. The topics that may be financed with the new Strategy are linked to 'Community conservation of ecosystems and endangered species',' Secondary benefits of access to a low-carbon	Synergy and actions without duplication: Small Grants Program-GEF-UNDP, in conjunction with the Ministry of the Environment, will invest in the next three years in three priority landscapes of Panama, which include the province of Darién, the La Amistad International Park - Caribbean Slope (PILA) and the South of the Azuero Peninsula, covering an estimated 816,544 hectares. It proposes to improve practices and methodologies, led by the

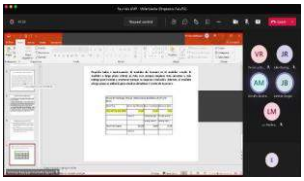
the Panama Small Grants Program 2020-2023	energy source ', and 'Coalitions from a local level to a global level for the management of chemicals and waste ', connected with circular economy in the three prioritized landscapes.	community, that are respectful of biological diversity, such as the promotion of the blue green economy (for example, agriculture, fisheries, forestry, tourism, sustainable infrastructure, climate adapted, etc.). On the other hand, it seeks to promote the use of non-traditional renewable energy technologies (especially solar energy) and efficient from the energy point of view; offer socioeconomic benefits; and improve livelihoods. Through the projects that are intended to be carried out with the strategy, a collaboration could be forged for component 1, sharing sustainable experiences obtained with the development of this project.
Sustainable Azuero Project, Ministry of the Environment and UNDP in partnership with the Small Grants Program of Panama	It is expected to improve the living conditions of the men, women, girls and boys of Azuero by conserving biodiversity and avoiding the degradation of ecosystems in the marine-coastal areas of the south of the Azuero peninsula.	The project will contribute to promoting sustainable fishing practices, as well as various conservation actions, such as the protection of turtles, protection of the mangrove forest cover, the reduction of pollution (waste, solid waste and agrochemicals) and erosion control, ensuring the participation and leadership of women. Synergy and actions without duplication: Among the synergies that can be highlighted, is to promote initiatives and strengthen the capacities of community organizations in the conservation of biodiversity, the strengthening of biodiversity-friendly fishing and sustainable tourism. The experiences and lessons in sustainable community fishing and tourism will be considered in order to replicate or improve the implementation of actions in this new program proposal. The project does not present duplication since it is developed in a different location.
Communication, Capacity-building, Education, Participation and Awareness (CEPA) plans for wetlands of Panama and Panama Bay (The Audubon Society of Panama and Ministry of the Environment 2017)	Project to rise awareness in communities and society in general about the ecological, cultural, social and economic importance of wetlands. Among its plans is to carry out coordinated education and communication actions for the benefit of local and migratory birds, especially the migratory shorebirds of the Bay of Panama.	The project has been led by The Audubon Society of Panama, in coordination with the Ministry of the Environment (Mi Ambiente), financial support from Fundación Natura, National Audubon Society and The David and Lucile Packard Foundation, as well as the collaboration of local experts in communications. Under this project, the National Plan for Communication, Education, Awareness and Public Participation (CECop) for wetlands in Panama and the CECoP Site Plan for the wetlands of the Bay of Panama were developed. Synergies and actions without duplication: The plans will help to sensitize communities about the importance of mangroves and their benefits. Also, the importance of nature-based solutions and its relevance to avoid sea level rise as a priority in the communities. The project does not present duplication since it is developed in a different location.

Colmena Strategy (Ministry of the Presidency / Ministry of the Environment)	In this context, the Ministry of the Environment (MiAmbiente) has been responsible for the development of three major projects: the development of the ecological stove program, water harvesting systems, and the generation of nurseries in rural areas.	Synergies and actions without duplication: The project aims to benefit the population with a high level of poverty according to the Multidimensional Poverty Index, representing an advance in adaptation actions with water harvesting systems and the nursery establishment. The project does not represent a duplication of actions, but rather proposes the complementarity of actions aiming to respond to the communities affected by saline intrusion and those that do not have a water service for consumption, focusing on the coastal areas of the project.
Development of a Marine Dynamics database on Panamanian coasts to assess impact and vulnerability due to sea level rise (Technical Assistance from Climate Technology Center & Network)	The objective of this project is to develop key tools for risk assessment in Panamanian coasts in order to implement adaptation to climate change in marine-coastal areas. This project seeks to develop data numbers of marine dynamics in high resolution, methodological tools for the generation of data and thus evaluate the coastal risk, including evaluating and recommending adaptation measures for the coastal zone with nature based solutions; create technical capacities for the officials of the MiAmbiente Climate Change Directorate; and lastly, developing high-impact graphic material for communities at risk.	The project has been coordinated with the Directorate of Climate Change of the Ministry of the Environment of Panama. Other interested parties are: Directorate of Coasts and Seas of MiAmbiente, the Tourism Authority of Panama, the Authority of Aquatic Resources of Panama, Tommy Guardia Geographic Institute, Institute of Meteorology and Hydrology of Panama, SINAPROC, Association of Municipalities of Panama, AMP, Congress of Guna Yala, Ngäbe Buglé and Emberá Wounaan. Synergies and actions without duplication: The project to be developed by CTCN will be integrated into the proposed program, specifically in component 2 of adaptation planning, where the data generated will be used to develop effective and efficient adaptation measures based on the results obtained from rigorous studies. scientists, as well as in the development of sea level rise modeling with IPPC scenarios.
Increase forest cover to capture carbon and reduce vulnerability in priority watersheds in Panama (CABEI / GCF) (NC formulation stage - proposed implementation: 5 years and USD 92M)	Restoration, reforestation and sustainable management of productive ecosystems for clean and resilient development, by promoting approaches, knowledge, technologies and investments for climate action in vulnerable communities at priority watersheds.	Synergies and actions without duplication: Although the project has not yet started, potential synergies in terms of proposed climate-smart practices can be explored by establishing a channel for dialogue at the full proposal level. Examples are: investment to boost the green and blue economy in productive and conservation practices associated with mangroves as ecotourism communities, restoration and revegetation of mangrove areas and other associated wetlands to strengthen resilience, cultivation of oysters as a carbon sink, reduction of the Eutrophication and economic development in fishing communities that in turn contributes to the restoration of mangroves and marine-coastal zones, management and co-management of filtering marine species (black shell) to reduce eutrophication of the marine- coastal zone due to runoff from the watershed and increase the resilience of the productive ecosystem, restoration of marine biodiversity and its role in the carbon cycle through the extraction of ghostnets and sustainable management.

		The project does not represent a duplication of actions since it is proposed for a different location and the actions within the project will represent a complement to the actions of the present program proposal.
Regional Initiatives		
Binational Cuba: Strengthening the adaptation capacity of the coastal communities of Cuba and Panama to climate change through the binational exchange of best practices for climate management and local food security.	Strengthen the adaptive capacity of coastal municipalities and their local livelihoods (agricultural and fishing production) in Cuba and Panama, as well as enrich, through the exchange of successful practices (including the use of a loss and damage methodology), the capacities of local decision makers to implement strategies to deal with climate change scenarios and protect local food security.	The project will be implemented in the Caribbean Coast, province of Colon, within the municipalities of Santa Isabel, Portobelo, Chagres and Donoso, seeking to guarantee an inclusive approach for vulnerable populations that face different needs and conditions for climate adaptation. Synergies and actions without duplication: Improve the organizational capacities of producer associations to optimize the livelihoods of vulnerable communities in coastal areas. Diversify local productive value chains to increase the income and food security of small producers, favoring livelihoods and resilience against the impacts of climate change. There is no duplication as the project will focus on the Western Caribbean Region of Panama and not the Central Pacific Region. However, there are important opportunities to make synergies related to actions in livelihoods and capacity building.
Binational Costa Rica: Improving the climate resilience of the coastal communities of Limón (Costa Rica) and Bocas del Toro (Panama) through nature-based solutions for local livelihoods.	The objective of the project is to increase the resilience to climate change of the coastal communities of Limón and Bocas del Toro to face the phenomena of climate change, both fast and slow, reinforcing and integrating local livelihoods around nature-based solutions to reduce vulnerability and build adaptive capacity. This will be accomplished by: Ensuring ecological resilience and the integrity of ecosystems that support sustainable livelihoods and reduce climate risks. climatic risks. Improving the adaptive capacity of livelihoods and nature- based value chains, as well as access to financial mechanisms that support adaptation processes. Increasing access to and use of information by key stakeholders, as well as cross-sectoral capacity for decision- making in a changing climate.	Synergies and actions without duplication: Through this project, nature-based solutions (NbS) will be applied to mitigate climate risk and create resilient local livelihoods (tourism and associated agriculture, fishing practices), while strengthening conditions conducive to the climate adaptation of coastal communities. The actions envisaged in the project could be used in collaboration to learn about their successful experiences obtained and leverage those envisaged within component 1 of the proposal. The project does not represent a duplication of actions since it contemplates an implementation location different from the present program proposal.

Climate Change Impact Assessment on the sandy coasts of the Caribbean: alternatives for control and resilience (Association of Caribbean States)	The objective is to improve the resilience of coastal communities towards climate change and sea level rise, through the establishment of a coastal erosion monitoring network and the exchange of best practices in beach rehabilitation, observation and conservation.	Synergies and actions without duplication: The project seeks to develop actions for the rehabilitation of beaches in those coastal sectors that, due to their social and economic importance, require immediate action. The project does not represent a duplication of actions since it contemplates an implementation location different from that of the present proposal, focusing on the Caribbean Region of Panama.

ANEXO 10

Autoridad de Recursos Acuáticos de Panamá (ARAP) Se establecieron ***tres (3)*** reuniones virtuales con Darío López, Thelma Quintero y Leyka Martínez, representantes de la ARAP para la captura de información relevante para el programa. 	**Ministerio de Desarrollo Agropecuario (MIDA** Continuando con las consultas, se convocaron ***tres (3) reuniones*** con los regentes del MIDA, contando con la participación de Rodrigo Luque, Yanet Sierra, Rita Vallejos, Zonia Ortega, Jorge Escudero, Warren García, Ramón Cedeño y José Rodríguez 	**Autoridad de Turismo de Panamá** Siguiendo con la captura de información, se realizaron ***dos (2) reuniones*** con los regentes de la ATP, contando con la asistencia de Evans Canto y Diwidgi Valiente  
Sistema Nacional de Protección Civil (SINAPROC) Se realizó una (1) reunión virtual con el Ingeniero Luis Villamonte de la Dirección de Prevención y Mitigación de Desastres.	**Autoridad Marítima de Panamá** Se realizó una (1) reunión virtual Arnulfo Sánchez, oceanográfico Físico de Ambiente del Despacho de Administración. 	**Hidromet Empresa de Transmisión Eléctrica (ETESA)** Se realizó una (1) reunión virtual con la participación de la Lcda. Rossy Carrera de la Dirección de Hidrometeorología.

Municipios de Aguadulce, Antón, Capira y San Carlos

En la semana del 27 al 31 de diciembre de 2021, se solicitaron cortesías de salas a los municipios de Aguadulce, Antón, Capira y San Carlos con el propósito de realizar una inducción y socialización de la nueva propuesta de país, a la vez que se les hacía participe de esta iniciativa como socios estratégicos. Durante la misma el Ministerio de Ambiente compartió encuestas a los asistentes con la finalidad de obtener la mayor información sobre los principales vacíos y necesidades de la comunidad en cuanto a temas de planificación y fortalecimiento de capacidades relacionados a cambio climático, como también los principales efectos que esta causa sobre sus sistemas productivos.

Como resultados de las encuestas se puede resaltar que la mayoría de los encuestados poseen conocimientos en temas de cambio climático y comprenden cuales son los efectos que estos causan en sus comunidades y sus sistemas de subsidencia. Sin embargo, cabe mencionar que las herramientas de planificación para contrarrestar estos efectos son nulas, por lo cual permite al nuevo programa fortalecer estos vacíos para aumentar la capacidad adaptativa de estas poblaciones.

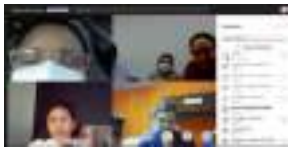
Municipio de Capira

Municipio de Aguadulce

Municipio de Antón

Municipio de San Carlos

Organizaciones y Academia

Organizaciones	**Academia**
La Sociedad Audubon de Panamá: Para evitar la duplicidad de información se realizó una reunión con Lourdes Sugasti, consultora del proyecto ""Mejorando, Valorando y Protegiendo el Capital Natural Costero de Panamá, quien nos explicó los conceptos básicos del mismo, resaltando que se estarían implementando en las áreas de Bahía de Parita y Bahía de Panamá"	**Instituto Smithsonian de Investigaciones Tropicales:** Continuando con la captura de información, se estableció comunicación con Steve Paton, quien nos compartió los avances de un proyecto que está ejecutando llamado "Monitoreo Aéreo Fotográfico de las Costas de Panamá" donde se tiene como objetivo obtener imágenes del estado de los manglares.
	
Centro Regional para el Hemisferio Occidental: Se realizó el primer acercamiento con CREHO Ramsar, por medio de Osvaldo Jordán, director ejecutivo de CREHO Ramsar Digna González y Andreina Pernía, coordinadoras de proyectos, en la misma se realizó una presentación por parte del consultor de Fundación Natura, Julio Rodríguez. 	

Lista de partes interesadas consultadas durante el proceso de consulta

N°	Actor Local	Organización/Institución	Tipo de Organización	Ámbito Geográfico	Género	
					F	M
1	Cesar Castillo	Ministerio de Ambiente- Dirección Regional de Panamá Oeste	Institución Pública	Panamá Oeste		x
2	Lilibeth Barba	Ministerio de Ambiente- Dirección Regional de Panamá Oeste	Institución Pública	Panamá Oeste	x	
3	Manuel López	Ministerio de Ambiente – Dirección Regional de Coclé	Institución Pública	Coclé		x
4	Evelyn Jaén	Ministerio de Ambiente – Dirección Regional de Coclé	Institución Pública	Coclé	x	
5	Rolando Ruiloba	Ministerio de Ambiente – Dirección Regional de Veraguas	Institución Pública	Veraguas		x
6	Darinel Pérez	Ministerio de Ambiente – Dirección Regional de Veraguas	Institución Pública	Veraguas		x
7	Yasbell Castillo	Ministerio de Ambiente – Dirección Regional de Veraguas	Institución Pública	Veraguas	x	
8	Graciela González	Ministerio de Ambiente – Dirección Regional de Herrera	Institución Pública	Herrera	x	
9	Ronald Rodríguez	Ministerio de Ambiente – Dirección Regional de Herrera	Institución Pública	Herrera		x
10	Ariel Sandoval	Ministerio de Ambiente – Dirección Regional de Herrera	Institución Pública	Herrera		x
11	Maribel Pinto	Ministerio de Ambiente – Dirección de Cambio Climático	Institución Pública	Nacional	x	
12	Priscila Riquelme	Ministerio de Ambiente – Dirección de Cambio Climático	Institución Pública	Nacional	x	
13	Carmen Prieto	Ministerio de Ambiente – Dirección de Cambio Climático	Institución Pública	Nacional	x	
14	Ligia Castro de Doens	Ministerio de Ambiente – Dirección de Cambio Climático	Institución Pública	Nacional	x	
15	Lourdes Sugasti	Sociedad Audubon de Panamá	ONG	Nacional	x	
16	Andreina Pernia	CREHO - Ramsar	ONG	Nacional	x	
17	Osvaldo Jordán	CREHO - Ramsar	ONG	Nacional		x

N°	Actor Local	Organización/Institución	Tipo de Organización	Ámbito Geográfico	Género	
					F	M
18	Digna González	CREHO - Ramsar	ONG	Nacional	x	
19	Darío López	Autoridad de Recursos Acuáticos de Panamá (ARAP) - Departamento deInvestigación y Desarrollo	Institución Pública	Nacional		x
20	Thelma Quintero	Autoridad de Recursos Acuáticos de Panamá (ARAP) - Departamento deInvestigación y Desarrollo	Institución Pública	Nacional	x	
21	Leyka Martínez	Autoridad de Recursos Acuáticos de Panamá (ARAP) - Departamento deManejo de los Recursos Acuáticos	Institución Pública	Nacional	x	
22	Jorge Jaén	Ministerio de Ambiente - DICOMAR	Institución Pública	Nacional		x
23	Luis Villamontes	SINAPROC - Dirección de Prevención y Mitigación de Desastres	Institución Pública	Nacional		x
24	Rodrigo Luque	MIDA - Unidad Agroambiental yCambio Climático	Institución Pública	Nacional		x
25	Yanet Sierra	MIDA - Secretaría Técnica	Institución Pública	Nacional	x	
26	Rita Vallejos	MIDA – Dirección de Agricultura	Institución Pública	Nacional	x	
27	Zonia Ortega	MIDA - Unidad Agroambiental y Cambio Climático	Institución Pública	Nacional	x	
28	Jorge Escudero	MIDA – Dirección de Agricultura	Institución Pública	Nacional		x
29	Warren García	MIDA - Unidad Agroambienta y Cambio Climático – MIDA	Institución Pública	Nacional		x
30	Ramón Cedeño	MIDA - Secretaría Técnica	Institución Pública	Nacional		x
31	José Rodríguez	MIDA - Dirección de Ganadería	Institución Pública	Nacional		x
32	Evans Canto	ATP - Coordinador de la Dirección de Planificación	Institución Pública	Nacional		x
33	Diwidgi Valiente	ATP - Oficina de Sostenibilidad	Institución Pública	Nacional		x
34	Arnulfo Sánchez	AMP	Institución Pública	Nacional		x
35	Rossy Carrera	ETESA – Dirección de Hidrometeorología	Institución Pública	Nacional	x	
36	Steve Paton	Instituto Smithsonian de Investigaciones Tropicales	Academia	Nacional		x
37	Juan Carlos Herrera	Municipio de Capira	Gobierno Local	Capira		x
38	Pedro Moreno	Municipio de Capira	Gobierno Local	Capira		x

N°	Actor Local	Organización/Institución	Tipo de Organización	Ámbito Geográfico	Género	
					F	M
39	Luis Díaz	Municipio de Capira	Gobierno Local	Capira		x
40	Nelson García	Municipio de Capira	Gobierno Local	Capira		x
41	Luis González	Municipio de Capira	Gobierno Local	Capira		x
42	Alcibíades Medina	Municipio de Capira	Gobierno Local	Capira		x
43	Edwin Soto	Municipio de Capira	Gobierno Local	Capira		x
44	Carmen Muñoz	Municipio de Capira	Gobierno Local	Capira	x	
45	Jorge Ramos	Municipio de Capira	Gobierno Local	Capira		x
46	Alejandro Herrera	Municipio de San Carlos	Gobierno Local	San Carlos		x
47	Camilo Calderón	Municipio de San Carlos	Gobierno Local	San Carlos		X
48	Arístides Vásquez	Municipio de San Carlos	Gobierno Local	San Carlos		X
49	Álvaro Sánchez	Municipio de San Carlos	Gobierno Local	San Carlos		X
50	Balbino Hidalgo	Municipio de San Carlos	Gobierno Local	San Carlos		X
51	María Sánchez	Municipio de San Carlos	Gobierno Local	San Carlos	X	
52	Abed Martínez	Municipio de San Carlos	Gobierno Local	San Carlos		X
53	Deyanira Samaniego	Municipio de San Carlos	Gobierno Local	San Carlos	X	
54	Luis Martínez	Municipio de San Carlos	Gobierno Local	San Carlos		x
55	Alberto Navarro	Municipio de San Carlos	Gobierno Local	San Carlos		X
56	Johana Osorio	Municipio de San Carlos	Gobierno Local	San Carlos	X	
57	Antonio Bernal	Municipio de San Carlos	Gobierno Local	San Carlos		x
58	Lloel Muñoz	Municipio de San Carlos	Gobierno Local	San Carlos		x
59	Viodelda Sánchez	Municipio de Antón	Gobierno Local	Antón	x	
60	Virgilio Rodríguez	Municipio de Antón	Gobierno Local	Antón		X
61	Ofelia Rodríguez	Municipio de Antón	Gobierno Local	Antón	X	
62	Secundino Hernández	Municipio de Antón	Gobierno Local	Antón		x
63	Luis Trejos	Municipio de Antón	Gobierno Local	Antón		x
64	Joaquín Rodríguez	Municipio de Antón	Gobierno Local	Antón		x
65	Eric Domínguez	Municipio de Antón	Gobierno Local	Antón		x
66	Oliver Tomas	Municipio de Antón	Gobierno Local	Antón		
67	Marlenis Rodríguez	Municipio de Antón	Gobierno Local	Antón	X	
68	Julio Arosemena	Municipio de Antón	Gobierno Local	Antón		x
69	Ana Marisín González	Municipio de Antón	Gobierno Local	Antón	X	
70	Abraham González	Municipio de Antón	Gobierno Local	Antón		x
71	Carlos Fernández	Municipio de Antón	Gobierno Local	Antón		x
72	Hernán Castrellón	Municipio de Antón	Gobierno Local	Antón		x
73	Rafael Sánchez	Municipio de Antón	Gobierno Local	Antón		x

N°	Actor Local	Organización/Institución	Tipo de Organización	Ámbito Geográfico	Género	
					F	M
74	Fennet Aguilar	Municipio de Antón	Gobierno Local	Antón		x
75	Siria López	Municipio de Aguadulce	Gobierno Local	Aguadulce		x
76	Eric Chiari	Municipio de Aguadulce	Gobierno Local	Aguadulce	X	
77	José Aranda	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
78	Nelvin Castillo	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
79	David Ortiz	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
80	Benjamín Jalomin	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
81	Raúl Euclides	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
82	Amelia Cruz	Municipio de Aguadulce	Gobierno Local	Aguadulce	X	
83	Mayra Rivera	Municipio de Aguadulce	Gobierno Local	Aguadulce	X	
84	Carlos Díaz	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
85	Osman Guerra	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
86	José Gonzales	Municipio de Aguadulce	Gobierno Local	Aguadulce		X
87	Edwin Pérez	Municipio de Aguadulce	Gobierno Local	Aguadulce		x
88	Natividad Ledezma	Municipio de Aguadulce	Gobierno Local	Aguadulce	x	
89	Leonardo Aguilar	Municipio de Aguadulce	Gobierno Local	Aguadulce		x

ANNEX 11

Programa País: "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacifico Central de Panamá".

Proceso de consulta Panamá Oeste

Información general del evento/reunión	
Nombre del evento/reunión:	Taller de Consulta Pública.
Lugar:	Casa de Cultura de Chame, Panamá Oeste
Fecha:	25 de julio de 2023
Participantes:	Total: 15 Hombres: 7 Mujeres: 8 Participación de cinco (5) Organizaciones de Base Comunitario (OBC) (Panamá Ambiental, Asociación eco ambiental de Monte Oscuro, Defensores Unidos por el manglar de Sajalices, Asociación Puerto Julián, Chamexplora
Otros Participantes:	MiAMBIENTE: 4 Fundación Natura: 1

1. **Agenda**

Título: Proceso de consulta – Formulación de la propuesta de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá / Ministerio de Ambiente – Fondo de Adaptación – Fundación Natura.
Objetivos:

- Sociabilizar información general del programa y componentes.
- Obtener recomendaciones, comentarios y reacciones sobre las actividades del proyecto previstas.

Hora: 9:30 am – 10:45 am.
Lugar: Casa Cultura, distrito de Chame, Provincia de Panamá Oeste.

AGENDA		
Hora	**Contenido**	**Ponente**
09:00 a 9:30 am	Recepción y registro de participantes	Recepción
09:30 a 9:40 am	Palabras de Bienvenida y presentación de la jornada	Jefe Regional de Cambio Climático – Provincia de Panamá Oeste
9:40 a 10:30 am	Presentación General del Proyecto: cómo surge la iniciativa, etapas de formulación, presupuesto y detalles técnicos	Consultor Fundación Natura
10:30 a 10:45 am	Encuesta en tiempo real	Todos

2. **Objetivo del Taller**

Presentar la propuesta desarrollada y recibir retroalimentación de los actores clave, que permita enriquecer y fortalecer el documento, de manera que el Programa propuesto responda de manera contundente a los retos de adaptación ante el cambio y la variabilidad climática en el área de impacto del Proyecto.

3. Resultados Esperados:

- Actores claves informados sobre la propuesta, su fundamento, lógica de intervención, alcance y actividades.
- Se reciben reacciones, sugerencias y aportes para fortalecer el documento para presentación ante el FA

4. Metodología:

El taller tendrá una lógica participativa y de interacción, a fin de facilitar el diálogo informado entre los participantes. Para ello se hizo una presentación en Power Point facilitada por personal de Fundación Natura y MiAmbiente que abordaba los principales puntos de la propuesta haciendo especial énfasis en los Resultados y Productos propuestos y sus alcances. A lo largo de la presentación se fueron dando espacios para consultas y observaciones de los participantes y finalmente se realizó una encuesta estructurada para que los participantes pudieran complementar sus aportes a partir de un conocimiento más amplio de la propuesta y sus alcances.

Los aportes que se recojan serán documentados y considerados posteriormente por Fundación Natura para efectos de su incorporación en el documento final.

5. Principales Resultados:

5.1 Resultados del Taller de consulta:

a. Participación de cinco organizaciones de base comunitaria (OBC) con un total de 16 personas, de las cuales 7 fueron hombre y 9 mujeres.
b. Los participantes se identificaron con los principales impactos generados por el Cambio Climático contenidos en la propuesta y validaron los siguientes impactos que enfrentan actualmente en sus comunidades:
    - Erosión costera por aumento del nivel del mar y mayores oleajes que afectan medios de vida e infraestructura.
    - Salinización de acuíferos por intrusión marina en algunas áreas costeras.
    - Disminución de disposición de agua en época seca que afecta la calidad de vida de las comunidades y sus actividades productivas.
    - Perdida de cobertura boscosa de importancia como manglares para enfrentar el Cambio Climático.
c. Se destacaron las capacidades de las OBC en relación a la propuesta:
    - Todas las OBC cuentan con experiencia en reforestación o enriquecimiento de manglares.
    - Todas las OBC cuentan con mujeres como parte de su membresía.
    - Algunas OBC cuentan con experiencia en el manejo de viveros y tienen capacidad para la reproducción de plántulas de mangle para acciones de reforestación.
    - Todas las OBC tienen experiencia en limpiezas de playas.
    - Algunas han trabajo con comunidades en diferentes acciones productivas que incluyen apicultura, recolección de conchas, turismo comunitario y producción de carbón de mangle.
    - Estas cinco OBC representan a más de 100 miembros que pertenecen a estas organizaciones.
d. Entre las recomendaciones presentadas por las OBC para la mejora de la propuesta están:

- Considerar que las OBC puedan implementar pequeños proyectos en base a sus capacidades y experiencia (Respuesta: se debe considerar en la estrategia de implementación del proyecto).
- Apoyar el fortalecimiento de capacidades de las OBC en la preparación de propuestas relacionadas a Cambio Climático y otras áreas (Respuesta: contemplado componente 3).
- Tener acceso a la información que va generando el proyecto (Respuesta: Contemplado Estrategia Gestión del Conocimiento y Pagina web de MiAmbiente y Fundación Natura).

5.2 Principales Resultados de la encuesta:

La encuesta realizada a 15 participantes muestra que el 93% ha escuchado hablar del Cambio Climático, el 87% considera que el Cambio Climático está afectando sus actividades (medios de vida) que incluyen: turismo, producción de carbón, agricultura, apicultura y acuicultura. El 73% de los encuestados afirma que la familia apoya las actividades productivas.

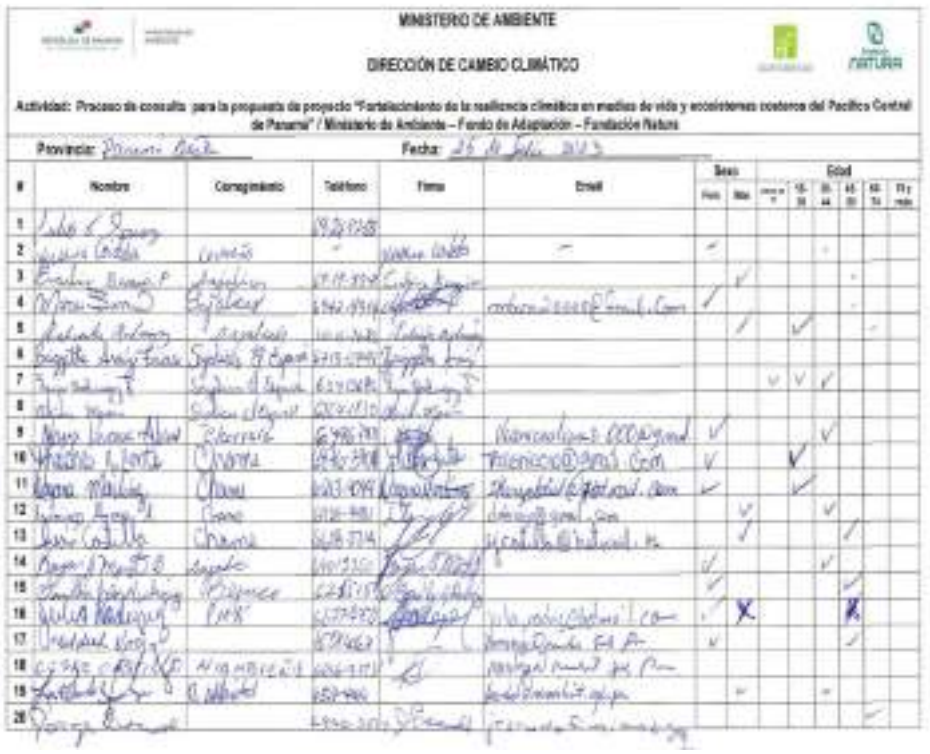
El 40% de los encuestado considera que la adaptación es la opción para enfrentar los efectos del cambio climático. El 33% expresa que la adaptación no es la mejor opción para enfrentar los efectos del cambio climático y el 27% no respondió. Este resultado demuestra la necesidad de trabajar con los grupos comunitarios en información básica de cambio climático y adaptación como se establece en el Componente 3 de este programa.

Los participantes mostraron interés en participar en otras actividades productivas como elaboración de planes de manejo, pesca, cosecha de agua, ganadería sostenible y cultivo de ostras; además de su actividad principal. No tienen conocimiento de proyectos relacionados con cambio climático, excepto de las acciones de reforestación de manglares.

Entre los temas importantes que deberían impulsarse en la comunidad están: Conservación de recursos hídricos, protección de áreas protegidas, conservación y restauración de manglares y gestión de basura. Las principales medidas a nivel comunitario para afrontar los efectos al cambio climático están: Eliminar extracción de arena, controlar tala de manglar, capacitaciones, reforestación y educación.

Imágenes de la actividad

Lista de asistencia



MINISTERIO DE AMBIENTE

DIRECCIÓN DE CAMBIO CLIMÁTICO

Actividad: Proceso de consulta para la propuesta de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá" / Ministerio de Ambiente – Fondo de Adaptación – Fundación Natura

Provincia: Herrera Fecha: 26 de Julio 2023

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Programa País: "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacifico Central de Panamá".

Proceso de consulta Provincia de Herrera

Información general del evento/reunión	
Nombre del evento/reunión:	Taller de Consulta Pública
Lugares:	Hotel Versalles Comunidad del Retén
Fecha:	27 de julio de 2023 29 de Julio de 2023
Participantes:	Total: 53 Hombres:23 Mujeres: 30 La primera presentación se realizó a un grupo de servidores públicos de diferentes entidades entre ellas: Ministerio Ambiente, Municipio, Procuraduría de la Administración, Ministerio de Salud y ARAP. Segunda presentación en la comunidad del Retén, la misma se realizó en la casa del señor Eduardo Pérez presidente de la asociación ANUMA (Asociación Nuevo Manglar), en esta

	presentación participaron agentes de la Policía Ambiental, miembros de la asociación y moradores de la comunidad.
Otros Participantes:	MiAMBIENTE

1. **Agenda**

Título: Proceso de consulta – Formulación de la propuesta de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá" | Ministerio de Ambiente – Fondo de Adaptación – Fundación Natura.

Objetivos:
- Socializar información general del programa y sus componentes
- Obtener recomendaciones, comentarios y reacciones sobre las actividades de proyecto previstas

Hora: 8:30 am – 15:00 p.m.

Lugar: Provincia de Herrera

AGENDA		
Hora	Contenido	Ponente
08:00 am a 9:30 am	Recepción y registro de los participantes	Recepción
09:30 am a 9:40 am	Palabras de Bienvenida y presentación de la jornada	Jefe Regional de Cambio Climático - Provincia de Coclé
9:40 am a 10:30 am	Presentación General del Proyecto, cómo surge la iniciativa, etapas de formulación, presupuesto y detalles técnicos	Jefe Regional de Cambio Climático - Provincia de Coclé
10:30 am a 10:45 am	Encuesta en tiempo real	Todos

2. **Objetivo del Taller**

Presentar la propuesta desarrollada y recibir retroalimentación de los actores clave, que permita enriquecer y fortalecer el documento, de manera que el Programa propuesto responda de manera contundente a los retos de adaptación ante el cambio y la variabilidad climática en el área de impacto del Proyecto.

3. **Resultados Esperados:**
   - Actores claves informados sobre la propuesta, su fundamento, lógica de intervención, alcance y actividades.
   - Se reciben reacciones, sugerencias y aportes para fortalecer el documento para presentación ante el FA

4. **Metodología:**

El taller tendrá una lógica participativa y de interacción, a fin de facilitar el diálogo informado entre los participantes. Primeramente 30 minutos de recepción de las personas invitadas. Posteriormente inicio de la presentación empleando una presentación en Power Point con la finalidad de facilitar por el personal técnico del Ministerio de Ambiente la comprensión y visualización. Durante la presentación se abordó los principales puntos de la propuesta haciendo especial énfasis en los resultados y productos propuestos y sus alcances. A lo largo

de la presentación se fueron dando espacios para consultas y observaciones de los participantes y finalmente se realizó una encuesta estructurada para que los participantes pudieran complementar sus aportes a partir de un conocimiento más amplio de la propuesta y sus alcances.

Los aportes que se recojan serán documentados y considerados posteriormente por Fundación Natura para efectos de su incorporación en el documento final.

5. Principales Resultados:

a. Participación de una Organización de Base Comunitaria (OBC), instituticones como MINSA, ARAP entre otras en total participaron 53 personas, de las cuales 23 fueron hombres y 30 mujeres.
b. Los participantes reconocieron como los principales problemas que enfrenta la comunidad:
    1. Las inundaciones, deslizamiento y sequía que afecta la comunidad.
c. Se destacaron las capacidades de las OBC en relación a la propuesta entre estas capacidades:
        a. Uso de abono orgánico en sus cultivos.
        b. Curvas de nivel y barreras muertas.
d. Entre las recomendaciones presentadas por las OBC para la mejora de la propuesta están:
    1. Recomiendan trabajar en agrupación comunitaria para realizar actividades que cuiden el ambiente.
    2. Concientizar a los habitantes sobre la importancia que debemos tener en el cuidado del ambiente.

Más educación ambiental, asesoría técnica para asistir actividades de cultivos que sea aplicables con nuevas alternativas de producción.

6. Principales Resultados de la encuesta:

La encuesta realizada a 43 participantes muestra que el 93% ha escuchado hablar del Cambio Climático, el 93% considera que el Cambio Climático está afectando sus actividades (medios de vida) que incluyen: en su mayoría agricultura, turismo, docencia y trabajo con viveros. El 74% de los encuestados afirma que la familia apoya las actividades productivas y el resto no respondió (Anexo 1).

El 74% de los encuestado considera que la adaptación es la opción para enfrentar los efectos del cambio climático y una persona no respondió. El 26% expresa que la adaptación no es la mejor opción para enfrentar los efectos del cambio climático. Este resultado demuestra la necesidad de trabajar con los grupos comunitarios en información básica de cambio climático y adaptación como se establece en el Componente 3 de este programa.

Los participantes mostraron interés en participar en otras actividades productivas como el uso de sistemas de cosecha de agua y reforestación, que permitan la conservación del medio ambiente como reciclaje y reforestación del manglar.

Entre los temas importantes que deberían impulsarse en la comunidad están: Educación ambiental y concientización sobre el cuidado del medio ambiente (sostenible) en relación a las actividades productivas que practican como ganadería y agricultura.

Imágenes de la actividad

Lista de asistencia

MINISTERIO DE AMBIENTE

DIRECCIÓN DE CAMBIO CLIMÁTICO

Provincia:

Fecha:

MINISTERIO DE AMBIENTE

DIRECCIÓN DE CAMBIO CLIMÁTICO

Actividad: Proceso de consulta para la propuesta de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá" / Ministerio de Ambiente – Fondo de Adaptación – Fundación Natura

Provincia: Veraguas Fecha: 22 de julio 2023

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MINISTERIO DE AMBIENTE

DIRECCIÓN DE CAMBIO CLIMÁTICO

Actividad: Proceso de consulta para la propuesta de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá" / Ministerio de Ambiente – Fondo de Adaptación – Fundación Natura

Provincia: Veraguas Fecha: 22 de julio de 2023

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Programa País: "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacifico Central de Panamá".

Proceso de consulta Provincia de Coclé

Información general del evento/reunión	
Nombre del evento/reunión:	Taller de Consulta Publica
Lugares:	Ministerio de Ambiente – Regional de Coclé, salón de reuniones.
Fecha:	31 de julio
Participantes:	Total: 14 Hombres:6 Mujeres: 8 OBC participantes (CEOTECH, ACAE y Halcones del Jobo), Universidad de Panamá, Universidad Tecnológica de Panamá
Otros Participantes:	MiAMBIENTE

1. **Agenda**

Título: Proceso de consulta – Formulación de la propuesta de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá" / Ministerio de Ambiente – Fondo de Adaptación – Fundación Natura.

Objetivos:

- Socializar información general del programa y sus componentes
- Obtener recomendaciones, comentarios y reacciones sobre las actividades de proyecto previstas

Hora: 9:30 am – 10:00 p.m

Lugar: Provincia de Coclé

AGENDA		
Hora	**Contenido**	**Ponente**
09:00 am a 9:30 am	Recepción y registro de los participantes	Recepción
09:30 am a 9:40 am	Palabras de Bienvenida y presentación de la jornada	Jefe Regional de Cambio Climático - Provincia de Coclé
9:40 am a 10:30 am	Presentación General del Proyecto: cómo surge la iniciativa, etapas de formulación, presupuesto y detalles técnicos	Jefe Regional de Cambio Climático - Provincia de Coclé
10:30 am a 10:45 am	Encuesta en tiempo real	Todos

2. Objetivo del Taller

Presentar la propuesta desarrollada y recibir retroalimentación de los actores clave, que permita enriquecer y fortalecer el documento, de manera que el Programa propuesto responda de manera contundente a los retos de adaptación ante el cambio y la variabilidad climática en el área de impacto del Proyecto.

3. Resultados Esperados:

- Actores claves informados sobre la propuesta, su fundamento, lógica de intervención, alcance y actividades.
- Se reciben reacciones, sugerencias y aportes para fortalecer el documento para presentación ante el FA

4. Metodología:

El taller tendrá una lógica participativa y de interacción, a fin de facilitar el diálogo informado entre los participantes. Primeramente 30 minutos de recepción de las personas invitadas. Posteriormente inicio de la presentación empleando una presentación en Power Point con la finalidad de facilitar por el personal técnico del Ministerio de Ambiente la comprensión y visualización. Durante la presentación se abordó los principales puntos de la propuesta haciendo especial énfasis en los resultados y productos propuestos y sus alcances. A lo largo de la presentación se fueron dando espacios para consultas y observaciones de los participantes y finalmente se realizó una encuesta estructurada para que los participantes pudieran complementar sus aportes a partir de un conocimiento más amplio de la propuesta y sus alcances.

Los aportes que se recojan serán documentados y considerados posteriormente por Fundación Natura para efectos de su incorporación en el documento final.

5. Principales Resultados:

a. Participación de cinco organizaciones de base comunitaria (OBC) con un total de 14 personas, de las cuales 6 fueron hombres y 8 mujeres.
b. Los participantes se identificaron con los principales impactos generados por el Cambio Climático contenidos en la propuesta y validaron los siguientes impactos que enfrentan actualmente en sus comunidades:
    1. Problemáticas como la sequía y vendavales.
    2. Inundaciones y aumento del nivel como una problemática que prevalece.
    3. Mencionan a las altas temperaturas como un impacto.
c. Se destacaron las capacidades de las OBC en relación a la propuesta:
    1. Todas las OBC cuentan con resaltan las actividades de reforestación en la toma de agua.
    2. Todas las OBC cuentan con mujeres como parte de su membresía.
    3. Algunas OBC resaltan que la mayoría de las actividades propuestas en el proyecto, son realizadas por ellos en sus comunidades.
d. Entre las recomendaciones presentadas por las OBC para la mejora de la propuesta están:
    1. Hacer cosecha de agua, reforestación y uso de abonos orgánicos e insecticidas.
    2. Impulsar capacitaciones para realizar actividades sostenibles, como también que el proyecto incluya la participación de las nuevas generaciones.

3. Recomiendan docencia a toda la población y actividades puntuales que actualmente causan problemas.

6. Principales Resultados de la encuesta:

La encuesta realizada a 14 participantes muestra que el 100% ha escuchado hablar del Cambio Climático, el 92% considera que el Cambio Climático está afectando sus actividades (medios de vida) que incluyen: en su mayoría agricultura, turismo, docencia y trabajo con viveros. El 78% de los encuestados afirma que la familia apoya las actividades productivas y el resto no respondió.

El 71 % de los encuestado considera que la adaptación es la opción para enfrentar los efectos del cambio climático y una persona no respondió. El 21% expresa que la adaptación no es la mejor opción para enfrentar los efectos del cambio climático y el 0.07% no respondió. Este resultado demuestra la necesidad de trabajar con los grupos comunitarios en información básica de cambio climático y adaptación como se establece en el Componente 3 de este programa y que los mismo tienen el deseo de formar parte.

Los participantes mostraron interés en participar en otras actividades productivas como elaboración de actividades sostenibles, que permitan la conservación del medio ambiente como reciclaje y reforestación del manglar.

Entre los temas importantes que deberían impulsarse en la comunidad están: Programa de conciencia a las comunidades, es decir capacitación en temas y medidas que permitan enfrentar los efectos del cambio climático.

Imágenes de la actividad

Lista de asistencia

MINISTERIO DE AMBIENTE

DIRECCIÓN DE CAMBIO CLIMÁTICO

Actividad: Proceso de consulta para la preparación de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá" / Ministerio de Ambiente – Fondo de Adaptación – Fundación Natura

Provincia: Coclé Fecha: 21 de Julio de 2023

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FUNDACIÓN NATURA
REPORTE DE PARTICIPACIÓN CON ACTOS/REUNIONES

Información general del evento/reunión			
Nombre del evento/reunión:	Reunión - Proceso de Consulta Pública Revisión de la propuesta de proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá / Fondo de Adaptación – Fundación Natura.		
Lugar:	Oficina Fundación Natura Oficina de ARAP,		
Fecha:	5 de octubre de 2023 5 de diciembre de 2023		
Participantes:	Total: 10 Hombres: 4 Mujeres: 6 Dirección General de Fomento a la Productividad y Asistencia Técnica (FP), Dirección General de Investigación y Desarrollo (I&D), Planificación y Administración de la ARAP y Técnicos de la Dirección de Cambio Climático de la Regional de MiAmbiente, Fundación Natura		
Nombre	**Institución**	**Teléfono**	**E-mail**
Zedna Ibis Guerra	Técnica I&D /ARAP	6532-7174	zguerra@arap.gob.pa
Nelson Collado	TécnicoI&D /ARAP	511-6033	ncollado@arap.gob.pa
César Castillo	Técnico Regional Dir. Cambio Climático / MiAmbiente	6636-3178	mvasquez@miambiente.gob.pa
Mildred Vásquez	Técnica Regional Dir. Cambio Climático / MiAmbiente	----	mvasquez@miambiente.gob.pa
Bernardo Melo	Director Fomento / ARAP	6515-0625	bmelo@arap.gob.pa
Elizabeth Wittingham	Directora Planificación/ARAP	6112-7825	ewittingham@arap.gob.pa
Celestino Martínez	Técnico Fomento /ARAP	511-6034	cmartinez@arap.gob.pa
Karla Adames	Directora I&D /ARAP	511-6033	kadames@arap.gob.pa
Lourdes Domínguez	Directora Administración / ARAP	6504-5971	ldominguez@arap.gob.pa
Vilna Cuéllar	Gerente de Proyectos Especiales / NATURA	66780682	vcuellar@naturapanama.org

1. **Agenda**
   - Sociabilizar información general del programa a los nuevos directivos de ARAP para obtener aportes y sugerencias, en particular las relacionadas con las medidas de adaptación en las áreas priorizadas.
   - Revisión de las listas de las OBC en las área priorizadas del proyecto y verificación de cuáles son sus prioridades y necesidades con base a documentación técnica emitida por las Direcciones Nacionales y Regionales de ARAP.

2. **Resultados Esperados:**
   - Nuevos directivos informados sobre la propuesta, su fundamento, lógica de intervención, alcance y actividades.
   - Recibir retroalimentación para fortalecer la propuesta definiendo ubicación, OBC beneficarias de los proyectos presentados inicialmente en la propuesta.

3. **Metodología:**

Se presentó a los directivos y técnicos la propuesta presentada al Fondo de Adaptación; durante la presentación se abordó los principales puntos de la propuesta haciendo especial énfasis en los resultados y productos propuestos y sus alcances.
Se realizó una revisión de los proyectos presentados en la propuesta.
Los aportes que se recogieron serán documentados y considerados posteriormente por Fundación Natura para efectos de su incorporación en el documento final.

4. **Principales Resultados:**
   a. Se explicó el proyecto; los resultados esperados con la implementación y la estructura de ejecución. Los nuevos directivos de ARAP apoyan plenamente el proyecto propuesto.
   b. Se revisaron documentos de ARAP e información suministrada por la Regional de Panamá Oeste de MiAmbiente donde se detalla las comunidades donde se ubican y la estructura de las organizaciones con las que trabajan.
   c. Se verificaron los posibles socios beneficiarios y seleccionaron las organizaciones que cumplen con los requisitos establecidos para participar en el proyecto. La ARAP indicó que se ha venido trabajando con OBC; sin embargo no cuentan con recursos para iniciar los procesos.
   d. Natura solicitó hacer las consultas a las OBCs para verificar sus prioridades y necesidades para la elaboración de las propuestas de intervención.

Distrito	Potenciales beneficiarios OBC, Cooperativas, Comunidades
Arraiján	Asociación de Pescadores de Veracruz
	Veracruz
	Chapala
Chorrera	Asociación de Pescadores Artesanales de Playa Leona
	Asociación de Pescadores y Extractores Playa Leona
Capira	Instituto Profesional y Técnico de Capira
	Asociación Eco-Ambiental de Monte Oscuro
	Centro Educativo de Monte Oscuro
	Hogares Crea
Chame	Defensores Unidos por el Manglar de Sajalices
	Asociación Puerto Julián
	Asociación de Pescadores Artesanales y Agroturística del

Distrito	Potenciales beneficiarios OBC, Cooperativas, Comunidades
	Espavé (APAAE)
	El Espavé
	Chame Explora
	Pachamama Punta Chame
	Asociación de pescadores artesanales y turísticos de Punta Chame.
	Punta Chame
	Asociación Agro-ecoturística Eben Ezer
	Cooperativa de Pesca El Diamante del Mar, R.L.
Aguadulce	Cooperativa Unida Comercializadora del Puerto de Aguadulce
	Puerto Aguadulce COOPUCPA, R.L
	Cooperativa de Pescadores Artesanales El Salao, R.L.
Antón	Asociación de Pescadores Artesanales Playa La Pacora
	Playa La Pacora
	Los Azules
	Cooperativa de Pesca Artesanal Nueva Generación, R.L.
	Boca de Río Hato
	Hogares CREA
Parita	Asociación Sardineros Boca Parita
	Cooperativa de Servicio Múltiples Pescadores Artesanales y Comercializadores de la Actividad del Mar R.L. (COOPACAMAR R.L.)
	Asociación de Sardineros de Boca de Parita
	Cooperativa de Servicios Múltiples Pescadores Río Santa María, R.L. (COOPRISMA, R.L.)
	Paris

Reunión 5 diciembre, 2023. Nuevo equipo directivo de ARAP

FUNDACIÓN NATURA
REPORTE DE PARTICIPACIÓN EN ACTOS/REUNIONES

Información general del evento/reunión			
Nombre del evento/reunión:	Reunión - Proceso de Consulta Pública Proyecto "Fortalecimiento de la resiliencia climática en medios de vida y ecosistemas costeros del Pacífico Central de Panamá / Fondo de Adaptación – Fundación Natura.		
Lugar:	Comunidades y virtual		
Fecha:	Octubre a diciembre 2023		
Participantes:	Total: Hombres: Mujeres: Técnicos de ARAP y de Dirección de Cambio Climático de la Regional de MiAmbiente. Comunitarios		
Nombre	**Institución**	**Teléfono**	**E-mail**
Zedna Ibis Guerra	Técnica I&D /ARAP	6532-7174	zguerra@arap.gob.pa
Nelson Collado	Técnico I&D /ARAP	511-6033	ncollado@arap.gob.pa
César Castillo	Técnico Regional Dir. Cambio Climático / MiAmbiente	6636-3178	mvasquez@miambiente.gob.pa
Mildred Vásquez	Técnica Regional Dir. Cambio Climático / MiAmbiente	----	mvasquez@miambiente.gob.pa
Celestino Martínez	Técnico Fomento /ARAP	511-6034	cmartinez@arap.gob.pa

1. **Agenda**
   - Verificar con los Presidentes de las organizaciones sus prioridades y necesidades con base a documentación técnica emitida por las Direcciones nacionales y Regionales de ARAP.
   - Obtener comentarios y reacciones sobre las actividades del proyecto previstas.

2. **Resultados Esperados:**
   - Recibir retroalimentación para fortalecer la propuesta definiendo ubicación, OBC beneficarias de los proyectos presentados inicialmente en la propuesta.
   - Validar por parte de los potenciales beneficiarios los efectos o impactos que el Cambio Climático provoca en sus comunidades y medios de vida y definir prioridades de trabajo.

3. Metodología:

Una actualización del proceso de consulta se realizó a través de diversas entrevistas y/o consultas de manera presencial o virtual entre los meses de octubre a diciembre de 2023 para recoger información con los directivos de las organizaciones comunitarias sobre las necesidades de apoyo para enfrentar los impactos del cambio climático que están afectando los ecosistemas y sus medios de vida.

Se generó un cuadro de los posibles socios del proyecto junto con las actividades priorizadas por las comunidades que incluyen también la identificación de factores internos y externos que podrían ser de riesgo para el éxito del proyecto. Estos documentos están disponibles en los archivos de la ARAP y Fundación Natura.

4. Principales Resultados:

a. Se explicó el proyecto; los resultados esperados con la implementación y la estructura de ejecución.
b. Los resultados de las consultas contribuyeron a definir la ubicación específica de las propuestas de intervención como la naturaleza de las actividades por las comunidades.
c. Se identificaron los riesgos ambientales y sociales de cada actividad (los mismos se incluirán en la sección de riesgos de la propuesta).
d. En la consulta se determinó que las comunidades tenían mayor preferencia por trabajar con recolección y manejo de la concha negra y pesca comunitaria y/o transformación. Estas actividades incrementa el número de beneficiarios por comunidad.




Fotos de consultas comunitarias presenciales y virtuales.

Resultados de las consultas por comunidad

Distrito	**Comunidad**	**Socios Beneficiarios** (OBC, Cooperativas, comunidades)	**Prioridades** solicitadas por comunidades
Arraiján	Veracruz	Asociación de Pescadores de Veracruz	Turismo pesquero experiencial comunitario
		Veracruz	Pesca comunitaria
	Vista Alegre	Chapala	Pesca comunitaria
Chorrera	Playa Leona	Asociación de Pescadores Artesanales de Playa Leona	Turismo pesquero experiencial comunitario
		Asociación de Pescadores y Extractores Playa Leona	Pesca comunitaria y/o Transformación
Capira	Capira	Instituto Profesional y Técnico de Capira	Tilapia
	Monte Oscuro	Asociación Eco-Ambiental de Monte Oscuro	Concha Negra
		Centro Educativo de Monte Oscuro	Tilapia
		Hogares Crea	Tilapia
Chame	Sajalices	Defensores Unidos por el Manglar de Sajalices	Concha Negra
		Asociación Puerto Julián	Concha Negra
		Asociación de Pescadores Artesanales y Agroturística del Espavé (APAAE)	Turismo pesquero experiencial comunitario
		El Espavé	Pesca comunitaria
	Punta Chame	Chame Explora	Concha Negra
		Pachamama Punta Chame	Concha Negra
		Asociación de pescadores artesanales y turísticos de Punta Chame.	Turismo pesquero experiencial comunitario
		Punta Chame	Pesca comunitaria
	Espavé	Asociación Agro-ecoturística Eben Ezer	Cultivo de ostras
	Nueva Gorgona	Cooperativa de Pesca El Diamante del Mar, R.L.	Turismo pesquero experiencial comunitario
Aguadulce	Aguadulce	Cooperativa Unida Comercializadora del Puerto de Aguadulce	Cultivo de ostras
		Puerto Aguadulce COOPUCPA, R.L	Pesca comunitaria y/o Transformación
	Playa el Salao	Cooperativa de Pescadores Artesanales El Salao, R.L.	Turismo pesquero experiencial comunitario

Distrito	**Comunidad**	**Socios Beneficiarios** (OBC, Cooperativas, comunidades)	**Prioridades** solicitadas por comunidades
Antón	Antón	Asociación de Pescadores Artesanales Playa La Pacora	Turismo pesquero experiencial comunitario
		Playa La Pacora	Pesca comunitaria
		Los Azules	Pesca comunitaria
	Río Hato	Cooperativa de Pesca Artesanal Nueva Generación, R.L.	Turismo pesquero experiencial comunitario
		Boca de Río Hato	Pesca comunitaria
	El Chirú	Hogares CREA	Pesca comunitaria y/o Transformación
Parita	Parita	Asociación Sardineros Boca Parita	Cultivo de ostras
		Cooperativa de Servicio Múltiples Pescadores Artesanales y Comercializadores de la Actividad del Mar R.L. (COOPACAMAR R.L.)	Turismo pesquero experiencial comunitario
		Asociación de Sardineros de Boca de Parita	Pesca comunitaria y/o Transformación
	Paris	Cooperativa de Servicios Múltiples Pescadores Río Santa María, R.L. (COOPRISMA, R.L.)	Turismo pesquero experiencial comunitario
		Paris	Pesca comunitaria

ANNEX 12

Annex 12. Complementary Gender Indicators

Narrative summary	Indicators	Baseline	Target	Verification source	Risks and assumptions
1. RESULTADO 1	Number and percentage of women and men who increase their income due to activities to adapt to change.	Total = 0 Women = 0 Men = 0	Total = 568 Women = 126 Men =442 30% Women 70% Men	Reports and memory aids of the activities carried out	
1.1 Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems					
Product 1.1.1 At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based solutions (NbS) and technologies	Number of men and women who participate in the preparation of farm management plans.	Total = 0 Women = 0 Men = 0	Total = 60 Women = 20 Men = 40	Farm management plans	There are not enough women farm owners to reach the number.
Product 1.1.2 12 hives installed in 4 apiaries installed, including training of beneficiaries (beekeepers) and provision of equipment.	Number of women who increase their income from agricultural initiatives.	Total = 0 Women = 0 Men = 0	Total = 20 Women = 8 Men = 12	Report with evaluation of income of beneficiaries	A baseline of current income of the beneficiaries must be established before the start of the productive activity
Product 1.1.3 Installed four pilot oyster farming experiences, including training of beneficiaries and provision of equipment.	Percentage of men and women in fishing activities and its value chain Number of men and women who increase their income from productive activities.	% Women % Men Total = 0 Women = 0 Men = 0	30% Women 70% Men Total = 32 Women = 12 Men = 20	Reports and memory aids of the activities carried out	At least 8 beneficiaries per productive association
Product 1.1.4 17 comprehensive garden programs established (10 for vulnerable families and 7 in schools in six priority districts) with water harvesting systems and drip	Number of men and women participating in agricultural activities Number of women who increase their income from agricultural	Total = 0 Women = 0 Men = 0	Total = 200 Women = 120 Men = 80	Reports and memory aids of the activities carried out	A baseline of current income of the beneficiaries must be established before the start of the productive activity

Narrative summary	Indicators	Baseline	Target	Verification source	Risks and assumptions
irrigation systems.	initiatives.				
	Number of men and women trained and transferring knowledge at the community level	Total = 0 Women = 0 Men = 0	Total = 50 Women = 30 Men = 20	Reports and memory aids of the activities carried out and attendance list	This indicator is evaluated from the 5 model comprehensive school gardens that will be implemented in schools in the study area where the parents of the students will be trained theoretically and practically (learn by doing).
• Product 1.1.5 Installed 3 pilot tilapia farming project with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell. .	Percentage of men and women in fishing activities and its value chain Number of men and women who increase their income from productive activities.	% Women % Men	30% Women 70% Men Total = 96 Women = 36 Men = 60	Reports and memory aids of the activities carried out	A baseline of current income of the beneficiaries must be established before the start of the productive activity. At least 8 beneficiaries per productive association
Product 1.1.6 Ten strengthened community tourism experiences including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience.	Number of men and women who increase their income from productive activities.	Total = 0 Women = 0 Men = 0	Total = 100 Women = 40 Men = 60	Reports and memory aids of the activities carried out	A baseline of organizations that develop tourism activities should be established, determining the total number of participants segregated by gender and estimating their benefits.
Product 1.1.7 12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4 projects to transform fishing products into value-added products with gender participation	Percentage of men and women in fishing activities and its value chain Number of men and women who increase their income from productive activities.	% Women % Men	50% Women 50% Men Total = 100 Women = 50 Men = 50	Reports and memory aids of the activities carried out	A baseline of current income of the beneficiaries must be established before the start of the productive activity. At least 8 beneficiaries per productive association
1.3 Improved water resource management in coastal communities through strengthening the management of rural aqueducts and water harvesting with the use of efficient and low-cost technologies.					
Product 1.3.1 Management of five rural aqueducts in the program area strengthened	Percentage of men and women on the board of directors of the Water Administrative Boards: Rural aqueducts	% Women % Men	30% Women 70% Men	Reports and memory aids of the activities carried out	

Narrative summary	Indicators	Baseline	Target	Verification source	Risks and assumptions
1.4 Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems					
Product 1.4.4 150 ha of high value ecosystems reforested, enriched and / or restored	Number of men and women who carry out actions to restore high-value ecosystems: Mangroves Cantidad y porcentaje de mujeres y hombres formados en adaptación para prácticas basadas en ecosistemas	Total = 0 Women = 0 Men = 0	Total = 100 Women = 40 Men = 60	Reports and memory aids of the activities carried out	
2.1 Developed baseline studies on climate change with application in planning and environmental land management					
Product 2.1.3 Three Environmental Land Management plans for prioritized districts	Percentage of men and women who participate in the preparation of Environmental Land Management plans	% Women % Men	40% Women 60% Men	Reports and memory aids of the activities carried out and attendance list.	
Product 2.1.4 Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories.	Percentage of men and women who participate in the preparation of municipal strategic plans	% Women % Men	40% Women 60% Men	Reports and memory aids of the activities carried out and attendance list.	
3.1 Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented.					
Product 3.1.1 Stakeholder training plan on climate change and ecosystem-based adaptation.	Number of men and women trained and transferring knowledge at the community level	Total = 0 Women = 0 Men = 0	Total = 20 Women = 10 Men = 10	Field training reports. Online training reports. Memory aid, attendance list and evaluations	Training of CBO technicians and community leaders who can replicate the knowledge acquired

ANEX 13

Procedimiento de la Fundación Natura para el seguimiento de programas y proyectos.

Procedure

1. **PURPOSE:** To establish the steps observed by Natura Foundation for follow up of sub-projects in order to ensure the successful execution of allocated sub-projects.

2. **SCOPE**: Responsible for the procedure: Project Manager.
This procedure is applicable to the Trustees Board, the Executive Director, the Executive Director Assistant, the Project Manager, the Administration and Finances Manager, the Project Coordinator, the Administrative Assistant, Accounting and Receptionist; goes from the organization and undertaking of the installation visit by the Project Coordinator up to when the Administrative Assistant receives notice of receipt of Note and Report with sub-projects' performance comments, by the Executing Agency.

3. **RELATED PROCEDURES AND OTHER DOCUMENTS:**

Documentation Level	**Code**	**Related Documents**
ISO 9001 Standard	7.5.1	Control of the production and service provision
Management Manual:	M-GO-2	Production and service provision
This Procedure		
Work instructions:	I-GO-10.1	Installation Visit
	I-GO-10.2	Revision of the Quarterly Technical and Financial Report and of the request for payment
	I-GO-10.3	Penalty for noncompliance in report delivery
	I-GO-10.4	Technical and administrative monitoring of the sub-project
Records:	F-GO-10.1.1	Visit of Installation Minutes
	D	Quarterly Technical Report
	D	Quarterly Financial Report
	D	Request for Disbursement
	F-GO-10.0.1	Note of Comments to the Quarterly Reports or/and Request for Disbursement
	D	Payment Control Sheet and Financial Plan
	F-GO-10.4.1	Sub-project's technical and administrative monitoring report
	F-GO-10.0.2	Note and Report with comments to sub-project performance
External documentation:	N/A	N/A
Related MS documentation:	P-GO-9	Contracting
	P-GO-11	Sub-projects evaluation
	P-GO-14	Accountability

4. **PROCEDURE:**

Note 1: This procedure is not applicable to the Annual Operational Plan and Budget presented by the National Environmental Authority.

4.1. Once the Administrative Assistant sends the notarized contract and receives notification of receipt from the Executing Agency, informs the Project Coordinator who organizes and carries out the installation visit, according to I-GO-10.1 Installation Visit then prepares the Installation Visit Minutes, F-GO-10.1.1, uploads the digital file to the corresponding activity in SIIAP and informs the Project Management.

4.2. The Receptionist receives from the Executing Agency: D-Quarterly Technical Report, D-Quarterly Financial Report, D-Request for Disbursement and sends them to the Administrative Assistant, who records the entry and uploads the progress report in SIIAP during the sub-project's monitoring phase with input data from the technical and financial reports and during the sub-project's supervision and control phase with the input data from the Request for Disbursement.

4.3. The Project Coordinator revises the Technical and Financial Report and the Request for Disbursement, according to instructions: I-GO-10.2 Revision of the Quarterly Technical and Financial Reports and Request for Disbursement and I-GO-10.3 Penalty for Noncompliance in Report Delivery, then proceeds as per case:

Note 2: Technical and financial quarterly reports from Executing Agency are due 15 calendar days prior to the termination of the reported quarter and shall be submitted to Natura Foundation 7 calendar days prior the end of the reported quarter.

4.3.1. If the Project Coordinator has comments to any of the documents in item 4.2; goes to 4.4.
4.3.2. If the Project Coordinator has no comments to any of the documents in 4.2; goes to 4.6.

4.4. The Project Coordinator prepares prints and signs the Note of Comments to Quarterly Reports and/or Request for Disbursement, F-GO-10.0.1 and sends it to the Administrative Assistant.

4.5. The Administrative Assistant delivers then Note of Comments to Quarterly Reports and/or Request for Disbursement, F-GO-10.0.1, gives follow up to the receipt and to the response of respondent to them; goes to 4.2.

4.6. The Project Coordinator prepares a quarterly report for donors and sends it to the Project Management for it to be considered in Accountability, P-GO-14, files the technical and financial reports; goes to
4.7 for carrying out the payment to the organization and goes to 4.15 for monitoring.

4.7. The Project Coordinator prepares the Request for Payment, F-GO-9.2.1, according to I-GO-9.2 Request for Payment, submits Request for Payment to the Project Management, who signs it in approval by the superior in line, the Project Coordinator sends the Administrative Assistant the Request for Payment together with the Request for Disbursement of the Executing Agency.

4.8. The Administrative Assistant sends the Request for Payment and Request for Disbursement and updates their disbursement status in SIIAP.

4.9. Accounting compares the stipulated amount in the request for payment to the request for disbursement and the modified budget (the period indicated in the request for disbursement) of the sub-project. If all documentation is in compliance, accounting updates D-Disbursement Control Sheet and Financial Plan, prepares D-Prepared Payment, fills out the information in the Request for Payment and files them in the disbursement files, and then sends the file to the Administration and Finances Management and registers the file exit.

Note 3: If Accounting finds and discrepancy between the documents verified, it informs the Administrative Assistant, who will correct the discrepancy together with the Project Coordinator and if necessary with the Project Manager and/or respondent.

4.10. The Administration and Finance Management verifies the file and marks the D-Payment prepared in conformity with the documentation and forwards to accounting where it they register file entry, and send it to the Executive Direction and register file exit.

4.11. The Executive Direction Assistant sends the Executive Director the file, and the Director marks the prepared D-Payment in conformity and sends it to the Executive Direction Assistant, who coordinates

the delivery of the full file to the President of the Board of Trustees who verifies the documentation and sign payment.

Note 4: When the payment amount requires two signatures the Executive Direction Assistant will coordinate the delivery of the contract file to another member of the Board of Trustees signatory of the bank account from which the payment is to be withdrawn and then he shall proceed with verifying and signature.

4.12. The Executive Direction Assistant received the file with the signed payment and sends it to Accounting.

4.13. Accounting executes disbursement in favor of the Executing Agency and informs via email to the Project Management, the Administrative Assistant and the Project Coordinator.

4.14. The Administrative Assistant informs the Executing Agency that the disbursement has been executed and registers it in SIIAP the disbursement of 100% with the date on which it was informed to the Executing Agency.

4.15. The Project Coordinator prepares and carries out the Sub-project monitoring, according to instructions I- GO-10.5 Sub-project technical and administrative monitoring and prepares the Sub-project technical and administrative monitoring Report, F-GO-10.5.1 and sends it to the Project Management. Updates in SIIAP: status of the monitoring activity and uploads digital monitoring report to monitoring activity and updates the progress status on each' sub-project outcome.

4.16. The Project Management revises the technical and administrative monitoring Report for the sub- project and if it has any comments or suggestions informs them the Project Coordinator who will include them in the sub-project technical and administrative Report.

4.17. The Project Coordinator prepares, prints and signs the Note and Report with comments to sub- project's performance, F-GO-10.0.2 to be considered by the Executing Agency in the next technicaland financial report and sends it to the Administrative Assistant. Uploads the note and report with comments to sub-project's performance in SIIAP in the corresponding monitoring activity.

Note 5: In the revision of the next-to-last technical and financial report, the Project Coordinator includes in the note a reminder for finishing the works and about the delivery of final technical and financial reports.

4.18. The Administrative Assistant delivers the Note and Report with comments to sub-project's performance and gives follow up to the receipt by the Executing Agency.

END OF PROCEDURE

ANNEX 14

POLITICA DE GENERO.

ENFOQUES DE LA POLÍTICA DE GÉNERO Esta Política de Género toma en cuenta los siguientes enfoques: Enfoque de derechos humanos: Se refiere a un enfoque en el que cada ser humano es reconocido como persona y como titular de derechos. Un enfoque basado en los derechos humanos se esfuerza por asegurar la libertad, el bienestar y la dignidad de todas las personas en todas partes, en el marco de normas y principios esenciales, deberes y obligaciones. Los derechos son indivisibles, interdependientes e interrelacionados, y el enfoque se centra en aquellas personas que son más vulnerables, excluidas o discriminadas. Fundación NATURA reconoce la importancia de los derechos humanos para el desarrollo sostenible, la mitigación de la pobreza, para asegurar la participación y distribución de los beneficios de sus programas y proyectos de manera equitativa y apoya el respeto universal de los derechos humanos y el respeto a la libertad fundamental de todas las personas. Enfoque de género: La legislación panameña instituye en su Ley Nº4 de 1999 la Igualdad de Oportunidades para las Mujeres y considera a esta como una política de Estado; mencionando en concreto la necesidad de que las mujeres se integren plenamente a los procesos de desarrollo y a la puesta en marcha de programas, citando entre otros los vinculados con la salud integral, el medio ambiente o la vivienda con mínimas condiciones. adicionalmente, esta ley considera a las mujeres indígenas y mujeres campesinas como grupos de especial interés. Para lograr resultados en términos de disminución de las brechas de género existentes, es importante que los aspectos de género no sólo sean considerados en los documentos de formulación del programas y proyectos, sino que también los equipos técnicos y administrativos tengan claridad sobre cómo o dónde incorporarlos, y conozcan herramientas que en la práctica puedan facilitar la incorporación del enfoque de género en todas las estructuras y ámbitos de acción de la Fundación NATURA. 4. PRINCIPIOS

Principio 1. Participación e inclusión social y no discriminación: Por raza, origen étnico, género y la identidad de género, edad, idioma, discapacidad, orientación sexual, religión, opinión política o de otra índole nacional o social origen geográfico, nacimiento o cualquier otra condición, incluyendo como una minoría.

Principio 2. Cumplimiento de las leyes nacionales y los marcos internacionales en material de género: La política de género, planes, programas y proyectos deben estarán alineadas con las políticas de género del país, con el marco internacional sobre derechos de las mujeres con el marco legal nacional e internacional en materia ambiental.

Principio 3. Compromiso: Fundación NATURA se compromete a respetar los derechos humanos de mujeres y hombres, a contribuir a la igualdad de género y a alinear sus iniciativas con las políticas de género del país.

Por ende, la Fundación NATURA se compromete según corresponda a: ▪ Adoptar métodos y herramientas para promover la igualdad de género y reducir las discriminaciones y disparidades de género en sus operaciones de financiación. ▪ Medir los resultados y los impactos de sus actividades en la capacidad de recuperación de mujeres y hombres frente a

los impactos del cambio climático y su capacidad de agenciar de manera diferenciada la vulnerabilidad al clima cambio.

Principio 4. Amplitud en alcance y cobertura: La política se aplicará a lo largo de los procesos operacionales, proyectos, programas y estructura de Fundación NATURA. ▪ En la estructura institucional: En toda la institución en sus operaciones y procedimientos, se procurará transversalizar la perspectiva de género. ▪ A nivel de proyecto: Fundación NATURA procura aplicar su política de género en sus actividades de adaptación, con la finalidad de minimizar los riesgos sociales y reducir la brecha de género. Para ello, en los proyectos que corresponda, desarrollará evaluaciones de género a inicio para determinar las actividades, los objetivos e indicadores que tomen en cuenta el enfoque de género y para diseñar una implementación y un seguimiento que tomen en cuenta las cuestiones de género. ▪ A nivel de las entidades ejecutoras: Fundación NATURA brindará el apoyo a sus ejecutores para fortalecer sus competencias en materia de género, para que desarrollen sus proyectos alineados a la política de género de la Fundación Natura, con miras aumentar el número de propuesta de financiación, cuyos objetivos promuevan la igualdad de género y la inclusión social en sus proyectos. Los proyectos y programas que corresponda, se evaluarán en función de las consideraciones sensibles de género en las diversas etapas del proceso de preparación, evaluación, aprobación y monitoreo de los proyectos, por el comité de revisión de proyectos y programa.

Principios 5. Equidad de género: en el contexto ambiental promover el acceso a las oportunidades en igualdad de condiciones para mujeres y hombres en la conservación y valorización de los bienes y recursos naturales.

Principio 6. Responsabilidad: Fundación NATURA cuenta con un seguimiento que evalúa la transversalización de género dentro de la Fundación. Los datos de los proyectos estarán desglosados por sexo, y se evaluarán los indicadores de género. La Fundación NATURA cuenta con: Un marco institucional para la incorporación de una perspectiva de género, con el personal experto designado y/o un compromiso al más alto nivel de gestión con la igualdad de género.

Cuenta con una Política de Género que aborda la igualdad de género, y elaborará un Plan de Acción de Género, adecuado al contexto y enfoque prioritario de trabajo de la Fundación en la conservación de los recursos naturales, que contará con un sistema de monitorio que incorpora la perspectiva de género, incluido el uso de indicadores desglosados por sexo. Fundación NATURA procurará desarrollar progresivamente, las competencias para generar las capacidades para realizar evaluaciones socioeconómicas y de género, que permitan evaluar los posibles roles, beneficios, impactos y riesgos para mujeres y hombres en sus proyectos.

Principio 7. Competencias: Fundación NATURA procurará desarrollar cuando corresponda, las capacidades dentro de su personal técnico y sus ejecutores que les permitan identificar medidas para evitar, minimizar y/o mitigar los impactos adversos de género.

Principio 8. Asignación de recursos: La Fundación NATURA asignará cuando corresponda, recursos para proyectos y programas que contribuyan a la igualdad de género y respalden el empoderamiento de las mujeres.

Principio 9. Gradualidad: La equidad de género, la conservación del ambiente y los recursos naturales deben implementarse en forma activa y progresiva, para ir modificando normas o patrones existentes que necesitan transformarse en beneficio del desarrollo sustentable del país.

Principio 10. Revisión y adaptación de la política: La incorporación de la perspectiva de género a nivel corporativo y de proyecto es una tarea a largo plazo y un compromiso sostenido, que incluye el seguimiento de su progreso. Los enfoques para la incorporación de la perspectiva de género evolucionan por eso es necesario revisar esta política en el año 2020.

Principio 11. Generación de conocimiento, comunicación e intercambio de experiencias: Para contribuir con el aprendizaje de la implementación de acciones en materia ambiental que tomen en cuenta las consideraciones de género y a la vez contribuir a la generación de información y datos de género y ambiente a partir de la aplicación de la política de género de Fundación Natura. Cuando corresponda, se identificarán y documentarán las buenas prácticas, se generarán espacios de intercambio de experiencias y conocimientos con otras organizaciones nacionales e internacionales interesadas en materia de género y ambiente. Fundación Natura considerará la pertinencia de catalizar una red de género y ambiente, con organizaciones que tengan experiencias sustantivas en materia de género que permita un intercambio de conocimientos.

OBJETIVOS

Fundación NATURA y las organizaciones ejecutoras de sus fondos se esforzarán alcanzar el objetivo de la igualdad de género y trato equitativo entre hombres y mujeres, para acceder a los recursos y servicios de la Fundación Natura en todos sus campos de acción a través de la transversalización de la perspectiva de género. − Transversalizar según corresponda, la perspectiva género en las operaciones, procesos, procedimientos y políticas, y en las estructuras de la Fundación Natura. − Garantizar el acceso equitativo entre hombres y mujeres a los recursos y beneficios de los programas y proyectos que implemente Fundación Natura. − Combatir y mitigar los riesgos asociados con las actividades financiadas por Fundación Natura. − Analizar y abordar sistemáticamente las necesidades específicas de mujeres y hombres en los proyectos de Fundación Natura.

ANNEX 15

Política de Salvaguardas Ambientales y Sociales 20 de febrero de, 2015 Política de Salvaguarda Ambiental y Social. Diciembre, 2014

CREDITOS Política de Salvaguardas Ambientales y Sociales. Fundación para la Conservación de los Recursos Naturales (Fundación NATURA). Panamá, Febrero. 2014.© Casa 1992 A y B, Llanos de Curundú Teléfono: (507) 232-8773 / Fax: (507) 232-7613 Apartado postal: 0816-06822, Panamá Dirección de correo electrónico: info@naturapanama.org Sitio web: www.naturapanama.org Política de Salvaguardas Ambientales y Sociales Instrumento para asegurar la calidad de la gestión ambiental y social con respeto a los derechos humanos y la sostenibilidad del desarrollo. 0

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Índice A.

Política de Salvaguarda Ambiental y Social. Diciembre, 2014 1 A. Objetivos y directrices de la política de salvaguardas ambientales y sociales de la Fundación Natura (2014) La labor de Fundación Natura, consiste en facilitar y contribuir al cumplimiento de objetivos ambientales suscritos por el Estado panameño, mediante el apoyo, la planificación, la ejecución y la supervisión de proyectos asociados a la conservación y protección de los ecosistemas, su biodiversidad y los recursos naturales de Panamá, usualmente asociado a actividades humanas relacionadas todas con el alcance de un desarrollo sostenible para el país. Esta labor, ante sus múltiples variables, no está exenta de riesgos que pueden atentar potencialmente contra el propósito mismo de sostenibilidad, por tanto son necesarias salvaguardas ambientales y sociales que reduzcan aquellos riesgos dentro del ciclo completode proyectos apoyados por la Fundación Natura. Este documento define y desarrolla en sus diferentes dimensiones y alcances las salvaguardas ambientales y sociales de la Fundación Natura. La Política de Salvaguardas Ambientales y Sociales de la Fundación Natura, eleva la calidad, credibilidad y factibilidad de sus prácticas habituales, como hacen otros organismos financieros y de apoyo al sector público, aumentando los beneficios del desarrollo sostenible, evitando la disminución de la calidad del ambiente para el entorno natural y las comunidades, identificando los riesgos ambientales y sociales potenciales de cada actividad y tomando las medidas necesarias para eliminar estos riesgos, evitarlos o mitigarlos. Esta política adopta principios generales que se desarrollan a través de criterios que describen los temas a tenerse en cuenta durante la preparación, adjudicación, ejecucióny seguimiento de cada proyecto. La práctica de adoptar este tipo de resguardos éticos de altonivel por parte de organismos financieros y de apoyo económico al desarrollo, responde a una práctica

mundial para el alcance de la eficiencia de los procesos y la excelencia en la calidad de cada parte que es componente de tales procesos, procurando que los objetivos primordiales de desarrollo sostenible no sean perdidos de vista por quienes implementan lasacciones directamente en campo, ni por quienes planifican y monitorean tales acciones. Asílas cosas, la Política de Salvaguardas Ambientales y Sociales de la Fundación Natura se basaen las normas legales y reglamentarias vigentes en la República de Panamá, así como en losacuerdos internacionales suscritos por ésta, todo bajo un enfoque de derechos humanos quegarantiza la aplicación en campo de los valores que estos instrumentos prescriben tanto paralos Estados, como para los particulares en toda su amplia diversidad cultural, social y ambiental. De la misma forma, ésta política se integra al resto de las políticas existentes de la Fundación Natura, a modo de sistema de trabajo operativo basado en valores y prácticas positivas con los distintos actores involucrados, incluyendo al ambiente, hoy día también sujeto de derechos colectivos y difusos. La adopción y observancia de esta política no transforma los roles existentes entre la Fundación Natura y las entidades o grupos implementadores de proyectos, éstos continuarán siendo responsables del manejo de los riesgos asociados con los proyectos, la diferencia está en que el riesgo existente resultará implícitamente incluido en la relación existente entre la Fundación y aquellos, y será analizado y evaluado en los niveles correspondientes. Política de Salvaguarda Ambiental y Social. Diciembre, 2014 2 A los ejecutores de proyectos, les podrá ser requerida su capacidad y compromiso para indicar los riesgos sociales y ambientales, sin perjuicio de que algunos proyectos y programas apoyados por la Fundación Natura, puedan tratar en sí sobre el manejo del riesgo. Así las cosas, el propósito de esta política ambiental y social, considera:

Abordar cuestiones sociales y ambientales en los proyectos de La Fundación: Para atender esta necesidad, la política puede aplicarse en cualquiera de las etapas del ciclo de proyectos, garantizando que los aspectos sociales y ambientales se consideren y se aborden de manera apropiada siendo algunos de los aspectos a considerar los siguientes: • Inclusión de las posibilidades de riesgo ambiental y social en la concepción, formulación y divulgación de proyectos y convocatorias. • Tomar en cuenta las posibilidades de riesgo ambiental y social en el proceso de revisión, evaluación y adjudicación de las propuestas asociadas a los proyectos, mediante una evaluación de riesgo preliminar, entre otros instrumentos. • Tomar en cuenta el manejo del riesgo en la aplicación de los marcos de seguimiento y presentación de informes que sirven de marco de referencia para la implementación de los programas nacionales. • Tomar en cuenta la posibilidad y manejo del riesgo ambiental y social para la aplicación de otras actividades financiadas por La Fundación Natura.
Asistir a los beneficiarios en el desarrollo de actividades y proyectos bajo los parámetros de este marco: Los proyectos y actividades apoyadas por la Fundación Natura, pueden compatibilizarse con los esfuerzos nacionales de reducción del riesgo ambiental y social de la comunidad, en armonía con los objetivos que estas políticas establecen: • Brindando un marco orientador sobre la conducta a llevar por parte de los ejecutores del proyecto o actividad de la que se trate, de acuerdo a parámetros establecidos dentro de la política. • Brindando una referencia adicional sobre los objetivos que cada proyecto debe seguir, haciendo referencia por ejemplo a grupos vulnerables, consideraciones de género y de vulnerabilidad ambiental, entre otros. Los Principios de Política son cometidos generales que fundamentan el resultado esperado, los criterios a la vez derivan de y encaminan hacia la consecución de tales principios. B. Política de salvaguardas ambientales y sociales de la Fundación Natura

Principio 1. General de Compromiso Ambiental y Social. La Fundación Natura adopta por este medio un compromiso de salvaguarda ambiental y social con el objeto de que sus actividades, fondos o Política de Salvaguarda Ambiental y Social. Diciembre, 2014 3 estructuras no apoyen de ninguna forma, proyectos o actividades que de cualquier manera afecten negativa e innecesariamente al ambiente natural, rural o urbano, ni la salud o bienestar de quienes habiten esos entornos, acorde con los principios y valores propios de derechos humanos, adoptados

formalmente por la sociedad panameña a través de sus instituciones, a nivel nacional o internacional. Lo anterior será asegurado a través de los siguientes criterios: • La Fundación tendrá un sistema ambiental y social que asegure que los riesgos asociados a estos aspectos sean identificados y tratados desde la etapa más temprana posible del diseño de proyectos o actividades concebidas, convocadas, financiadas o apoyadas por la Fundación, mediante la utilización de la evaluación del riesgo preliminar por parte de los colaboradores asignados en esta etapa a los respectivos proyectos. • La Fundación adoptará medidas para evitar, o donde no resultare posible, mitigar aquellos riesgos durante la implementación de las actividades o proyectos. La Fundación monitoreará y mantendrá al alcance de los interesados, el estatus de aquellas medidas adoptadas para cumplir con esta política durante y posterior a su ejecución.

Principio 2. Buen Gobierno. La Fundación se compromete a aplicar dentro de todo el ciclo de sus actividades y proyectos, las normas propias de buen gobierno y probidad de administración, de manera coherente con los compromisos vinculantes y morales de país a nivel interno y externo. Lo anterior, será asegurado con la observancia de los siguientes criterios: • Garantizar la integridad y responsabilidad de la gestión de fondos vinculados con las actividades de La Fundación. • Aplicar un sistema adecuado de rendición de cuentas y legitimidad de todos los órganos propios de La Fundación, a través de mecanismos como la evaluación continua y presentación de reclamaciones. • Garantizar el cumplimiento de la Ley, el acceso a la justicia, los recursos que sean efectivos para tal acceso y a colaborar con las autoridades competentes para la solución de posibles controversias legales. • Asegurar la transparencia y la accesibilidad de la información relativa a las actividades de la Fundación, incluida una difusión activa entre las partes relevantes e interesadas sin discriminación alguna. • Asegurar la coordinación institucional e interinstitucional, así como facilitar la comunicación entre el Estado y otros actores relevantes, como lo son los pueblos indígenas, campesinos, comunidades costeras y demás grupos vulnerables que dependen del manejo adecuado de los recursos naturales para su bienestar.

Principio 3 Igualdad de Oportunidades y No Discriminación. La Fundación Natura se compromete a brindar un trato justo y equitativo a sus beneficiarios potenciales y en propiedad, en los niveles que Política de Salvaguarda Ambiental y Social. Diciembre, 2014 4 correspondan. Sus actividades y proyectos no interferirán ni menoscabarán de ninguna forma los servicios básicos de salud, agua segura y servicios sanitarios, educación, vivienda digna, condiciones laborales adecuadas y derecho sobre la tierra. Estas actividades o proyectos no deben exacerbar las diferencias o desigualdades preexistentes en las comunidades, en especial con respecto a grupos ya marginados y vulnerables. Para el cumplimento de esto, serán empleados los siguientes criterios: • Las actividades y proyectos financiados o apoyados por la Fundación Natura evaluarán la presencia y evadirán la incidencia de impactos adversos en grupos marginados y vulnerables como las mujeres, los niños, ancianos, población indígena, refugiados, o discapacitados. • El no incurrir en ninguna clase de discriminación por razón de raza, condición social, género, religión, discapacidad o deformidad física, respetando el derecho de los individuos y de los grupos vulnerables a expresarse y a trabajar en la medida de sus posibilidades en las actividades y proyectos asociados a La Fundación. • Será asegurado el derecho de participación equitativa en materia de género, recibiendo beneficios sociales y económicos de manera equitativa, en todo el ciclo de actividades y proyectos de La Fundación. • Será procurado en proyectos o acciones dirigidos a pueblos indígenas, el consentimiento libre, previo e informado, así como sus mecanismos tradicionales de toma de decisiones, las cuales deben ser respetadas al darse, de manera coherente con la Declaración de las Naciones Unidas sobre los Derechos Indígenas y otros instrumentos de derecho internacional similares. • Las actividades y proyectos de La Fundación respetarán el conocimiento tradicional de los pueblos indígenas y comunidades locales, de manera coherente con lo establecido en la Constitución Política y en el derecho

nacional e internacional aplicable. • Las actividades y proyectos de La Fundación no propiciarán asentamientos involuntarios, en caso que éstos sean inevitables, se seguirá un debido proceso para que las personas desplazadas tengan total acceso a sus derechos y reciban una compensación previa, justa y equitativa acorde a lo establecido en la normativa internacional aplicable al país, como por ejemplo y no limitado a, la Declaración Universal de los Pueblos Indígenas y los Principios de Ecuador, así como la normativa local de referencia. • Las actividades y proyectos de La Fundación cumplirán con las disposiciones laborales nacionales vigentes y pertinentes.

Principio 4. Conservación de los Ecosistemas. La Fundación Natura se compromete a la promoción de medios de subsistencia sostenible, apoyando actividades y financiando proyectos que no incurran en la degradación injustificada de los ecosistemas, incluyendo los establecidos en el Sistema Nacional de Áreas Protegidas (SINAP), así como sus zonas de amortiguamiento, las zonas de reserva o de manejo marino costero integral, reconocidas por las autoridades, como de alto valor de conservación. Lo anterior, será asegurado a través de los siguientes criterios: Política de Salvaguarda Ambiental y Social. Diciembre, 2014 5 • Las actividades y proyectos de La Fundación serán diseñados de tal manera que eviten la reducción o pérdida de la diversidad biológica y la introducción de especies invasoras. • Las actividades y proyectos de Lla Fundación serán diseñados de tal forma que no incrementarán de manera significativa, las emisiones de gases de efecto invernadero u otros precursores del cambio climático. • Las actividades y proyectos de La Fundación contribuirán, en lo posible, a ejecutar una política de economía baja en carbono dirigida por las autoridades competentes, compatible con los demás sectores de la economía de acuerdo a lo establecido en el derecho local e internacional vigente.

Principio 5. Reducción de la Pobreza. La Fundación se compromete a emplear en sus actividades y proyectos, esquemas para contribuir efectivamente a la reducción de lapobreza. Para esto, Las actividades y proyectos de La Fundación, serán ejecutadas, cuando sea pertinente, en armonía con las estrategias nacionales de reducción de la pobreza y otros objetivos de desarrollo sostenible, incluyendo aquellos que son parte de los Objetivos de Desarrollo del Milenio.

Principio 6. Reducción de la Contaminación. La Fundación Natura se compromete, en el marco de sus competencias y funciones, a la reducción de los factores de contaminación, incluyendo la ineficiencia en el uso de los recursos naturales, en armonía con las normas y estándares nacionales e internacionales en esta materia, de esta manera, las actividades y proyectos de La Fundación tendrán un impacto positivo en la salud de la población.

Principio 7. Protección al Patrimonio Cultural. La Fundación Natura se compromete a que sus actividades y proyectos serán diseñados y ejecutados de manera que eviten o minimicen cualquier riesgo de alteración, daño, remoción de cualquier sitio de valor patrimonial, así reconocido por las autoridades competentes, poblaciones indígenas o autoridades académicas, lo cual se extiende al Patrimonio Inmaterial de los Pueblos Indígenas, a la preservación de sus lenguajes, al Patrimonio Cultural Sub Acuático y a los sitios de patrimonio mundial.

Principio 8. Protección de los Bosques y Garantizar la Continuidad de sus Servicios Ecosistémicos. La Fundación Natura se compromete a que sus actividades y proyectos sean diseñados de tal forma que promuevan la conservación, restauración y recuperación de los ecosistemas y eviten su degradación para que éstos provean de valiosos bienes y servicios ecosistémicos. Lo anterior será logrado mediante los siguientes criterios: • Las actividades y proyectos de Fundación Natura, fomentarán un uso y aprovechamiento racional de los ecosistemas e incluso de los agro ecosistemas manejados de acuerdo a la capacidad de carga del entorno, de modo que se evite la degradación del bosque natural, Política de Salvaguarda Ambiental y Social. Diciembre, 2014 6 reduciendo su pérdida por la extensión no planificada de la frontera agrícola, la extracción ilegal de recursos naturales o la construcción de infraestructuras no acorde con la capacidad de carga del entorno y de las necesidades de manejo, seguimiento, fiscalización y control dentro de la gestión de los ecosistemas. • Las actividades y proyectos de la Fundación evitarán o mitigarán el cambio en el uso de la tierra, en las reservas de carbono en los bosques y otros sumideros de carbono, tomando en cuenta de manera explícita los servicios de los ecosistemas y la conservación de la biodiversidad en relación directa con los valores de los participantes locales y otros actores relevantes. • Con base a lo anterior, la Fundación incluirá las consideraciones encaminadas a la protección de los Bosques y Garantizar la Continuidad de sus Servicios Ecosistémicos en los procesos de acreditación de beneficiarios, incluyendo sus capacidades de identificar y responder a los riesgos asociados y a hacer suyos los compromisos de la Fundación. Para ello, la Fundación deberá asegurar que se incluyan las medidas apropiadas para evitar, reducir y mitigar riesgos, en los documentos de adjudicación de proyectos, o que surjan de la implementación de éste, y sean ejecutadas de manera inmediata, durante el ciclo de vida completo del proyecto o actividad de la que se trate.

C. Bases para procedimientos relativos al cumplimiento de la política de salvaguardas ambientales y sociales de la Fundación Natura Existen circunstancias de riesgo en cada actividad o proyecto que realice, apoye o patrocine la Fundación Natura, para lo cual estos se identificarán, incluyendo su seguimiento y evaluación durante las etapas correspondientes a la actividad o proyecto, cuando proceda, y la adopción de medidas de acuerdo con la posibilidad real de incidencia. Igualmente, se contará con un mecanismo de solución de quejas, transparente y sencillo de ejecutar. C.1. Advertencia, análisis y comunicación de condiciones de riesgo Toda actividad o proyecto apoyado o financiado por la Fundación Natura, será monitoreado y evaluado durante su ciclo de vida completo para determinar sus posibles riesgos ambientales y sociales, de acuerdo con los compromisos adquiridos en la presente política de salvaguardas. Todo proyecto, desde la etapa más temprana de su concepción, tomará en cuenta la presencia o no de riesgos relacionados a los principios de la Política de Salvaguardas Ambientales y Sociales de la Fundación. Éstos deberán ser identificados, mediante el procedimiento de evaluación de riesgo preliminar y evaluados por el personal encargado de su concepción y elaboración. Lo mismo operará con las actividades realizadas, patrocinadas o apoyadas por la Fundación Natura. La evaluación de los riesgos deberá mostrar en sus resultados, incluso los de la evaluación preliminar, los riesgos identificados, la intensidad del riesgo, las medidas para evitarlo o eliminarlo; en el caso que no pudiese evitarse, las medidas para mitigarlo o compensarlo, y finalmente, si fuese necesario, la recomendación de no ejecutar aquel componente que afecte de manera significativa y no mitigable esta política. En el caso que se identifiquen medidas de mitigación o compensación, se debe evaluar la existencia de recursos para su ejecución.

Política de Salvaguarda Ambiental y Social. Diciembre, 2014 7 Los riesgos que puedan eliminarse o evitarse, serán reseñados en la actividad o el proyecto luego de ser identificados y, al igual que los demás, formarán parte del expediente del proyecto. De existir alguno de los riesgos que de forma directa o indirecta afecte, se relacione o sea pertinente a cualquiera de los principios o criterios de la Política de Salvaguardas de la Fundación Natura que impliquen la necesidad de mitigarlos o compensarlos, deberá ser señalado por el coordinador responsable del proyecto mediante comunicación dirigida a la Dirección Ejecutiva, sustentándose la causa del riesgo y adjuntándose de inmediato en el expediente correspondiente, el informe de evaluación de riesgos que incluye las medidas a adoptar. El informe de evaluación de riesgo que indique la ocurrencia de un riesgo que deba ser mitigado o compensado, o que recomiende la eliminación de algún componente del proyecto, será objeto de evaluación por parte de la Junta de Síndicos. Dentro de los criterios de esta evaluación, podrá considerarse la supresión de la tarea o factor que implique el riesgo, en favor de hacer el proyecto lo menos impactante posible a las Políticas de Salvaguarda Ambientales y Sociales de la Fundación Natura. Adicionalmente, en el evento que el proyecto se encuentre en ejecución cuando sea advertido el riesgo, se deberá variar la distribución de las partidas asignadas al proyecto, para asegurar la disponibilidad económica de recursos para reducir o evitar cualquier afectación de los principios que sustentan el actuar de la Fundación. Para tal fin, se realizará una evaluación conjunta, entre el ejecutor del proyecto y la Fundación Natura, para definir la pertinencia de la modificación de partidas y establecer en concordancia las acciones viables a seguir, incluyendo cuando sea pertinente y necesario, medidas dirigidas a la suspensión y/o cancelación del proyecto. Desde que esta política sea adoptada formalmente, los formularios, documentos y propuestas que lleven el sello de la Fundación Natura, deberán tomar en cuenta expresamente, en materia documental, social, ambiental, económica y financiera, el manejo del riesgo ambiental y social de acuerdo con la Política de Salvaguardas Ambientales y Sociales, para lo cual se harán los cambios logísticos, secretariales y de papelería correspondientes. C.2. Consulta Pública En el caso de actividades o proyectos que comprendan riesgos a ser mitigados o compensados, la Fundación Natura, dentro de las etapas correspondientes a la concepción, planificación, adjudicación y seguimiento de los proyectos que así lo requieran, dependiendo de la magnitud del proyecto del que se trate, previa evaluación de la Junta Directiva, con apoyo de las demás instancias de la Fundación, identificará en conjunto con las partes interesadas, a los actores pertinentes a quienes notificará en las etapas más tempranas posibles de planificación de las actividades y/o programas sobre los riesgos identificados en la evaluación de riesgo preliminar. Los resultados de esta consulta deben estar disponibles para cualquier interesado, hubiese o no participado en las consultas así llevadas a cabo. En el caso que comunidades sean afectadas por las actividades o proyectos de manera que las acciones arriba descritas deban ser invocadas, y después de evaluarse técnicamente la alta posibilidad de que un riesgo deba ser mitigado o compensado, la consulta deberá trasladarse al sitio Política de Salvaguarda Ambiental y Social. Diciembre, 2014 8 de afectación según lo establecido en el documento justificativo de la actividad o el proyecto que corresponda. Igualmente, los resultados serán accesibles, tanto a la comunidad, como a cualquier interesado y a las autoridades competentes. Las consultas también serán hechas, independientemente si el riesgo es advertido durante la implementación del proyecto o actividad. El producto final de tal mecanismo de consulta, incorporado a la actividad o proyecto del que se trate, deberá ser tomado en cuenta de forma expresa, ambiental, social, legal, económica y financieramente y también constará de manera expresa en la toma de

decisiones correspondientes en los niveles que correspondan. La rendición de cuentas de la actividad o el proyecto, así como su éxito, será medido de acuerdo al tratamiento del riesgo ambiental y social, así como por los demás méritos convencionales. C. 3. Mecanismo de tratamiento y solución de quejas La Fundación Natura homologará su procedimiento de atención de quejas para incluir el riesgo ambiental y social de manera expresa. Cualquier instancia perteneciente o asociada a la Fundación, podrá recibir la queja y tendrá el deber de transmitirla a la Dirección Ejecutiva para su trámite. Esta instancia delegará al personal idóneo a lo interno de la entidad, la atención de la queja, para su discusión en un Comité Ad Hoc designado para ello, por la Junta de Síndicos. El expediente de la queja deberá ser evaluado en la reunión más próxima de la Junta que sea llevada a cabo, sin distinción del nivel de gravedad de la queja. Para este efecto, la agenda de la Junta de Síndicos de la Fundación Natura, tendrá un período de escucha y decisión sobre las quejas u observaciones que los interesados hagan sobre el tema, habiéndose preparado el material correspondiente por el Comité Ad Hoc. Lo anterior, funcionará sin perjuicio de que la queja conlleve elementos que ameriten la intervención de las autoridades correspondientes, para lo cual, el Comité Ad Hoc, recomendará a la Junta de Síndicos, el curso que la queja debe llegar en el evento que sean puestas en riesgo o vulneradas las normas jurídicas coincidentes con los principios que nutren la política. La decisión tomada por la Junta de Síndicos influirá en el devenir de la actividad o proyecto del que se trate. Los contratos de la Fundación Natura con respecto a las adjudicaciones de proyectos y apoyo a actividades deberán contemplar esta posibilidad. La Fundación Natura, a través de una dirección de correo electrónico habilitada expresamente para ello, así como una, igualmente identificada de apartado postal convencional, podrán recibir cualquier aporte para la supervisión pública de la implementación de la Política de Salvaguardas Ambientales y Sociales. La Fundación Natura, divulgará a lo interno de su estructura, de las estructuras de las instituciones y gremios que componen la Junta de Síndicos, y el público en general, tanto la Política de Salvaguardas Ambientales y Sociales, como sus mecanismos de implementación. Las modificaciones a ésta serán igualmente comunicadas a los actores interesados. Política de Salvaguarda Ambiental y Social. Diciembre, 2014 9

D. Conclusión La Política de Salvaguardas Ambientales y Sociales de la Fundación Natura que por este medio se adopta, aspira a ser un instrumento más, compatible con las políticas preexistentes en materia de ética, combate a la corrupción y buenas prácticas administrativas que han sido adoptadas por esta organización, todo con miras a seguir cumpliendo una labor que por la naturaleza de sus acciones, debe ser lo más prístina posible en el manejo de recursos necesarios para coadyuvar en un verdadero desarrollo sostenible para el país. Esta herramienta, como todas, es susceptible al cambio y a la evolución positiva que brindan las experiencias técnicas y de campo, de modo que esta primera versión sienta las bases de una transformación cualitativa en los servicios ofrecidos a los usuarios que aspiran, como nosotros, a que las actividades humanas produzcan un saldo positivo en el ambiente natural y cultural que nos rodea.

ANNEX 16

Execution expenditure budget by year with description of ítems (notes)

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Expenditures	Notes	Total US$	Year 1	Year 2	Year 3	Year 4
Staff	Technical coordinator, office staff for EEs, and administrative support IE	692,592	197,455	200,455	200,455	94,227
Equipment	Computer and communications equipment for staff	16,400	16,400	0	0	0
Consultants	Consultant contracts on topics of preparation of terms of reference, legal advice, translation, documents required by the EEs	25,619	7,400	7,400	7,400	3,419
Travel expenses related to the Program	Travel expenses for workshops, meetings and presentations.	26,002	8,668	8,667	8,667	0
Monitoring & Evaluation	Travel expenses for site visits for product monitoring,	29,000	7,000	11,000	11,000	0
Dissemination of program results at the local level	Meetings to present results and prepare a document or video.	10,000				10,000
Total		799,613	236,923	227,522	227,522	107,646

ANNEX 17

Fundación NATURA

December 6, 2024

CERTIFICACIÓN

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@ Adaptation-Fund.org

Subject: Panama – Adjusted Full Scale Program Proposal

On behalf of Fundación Natura, we certify that the product 2.6 Development of cost-effectiveness case studies of community projects of the proposal entitled "Strengthening climate resilience in the livelihoods and coastal ecosystems of the Central Pacific of Panama, will be carried out as stipulated in the proposal:

1. Two projects will be carried out the first year: breading/milk production of Mr. Cesar Carrión farm milk and cheese production on Mr. Jorge Cedeño farm, both located in El Roble community, Aguadulce District, province of Coclé.
2. Eight cost/benefit studies will be developed in subsequent years for community projects established in the output *1.1. Strengthening of livelihood management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems* part of the Component 1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions.

The cost-effectiveness analyses will help to demonstrate that adaptation measures implemented in the different projects can increase economic profitability and social and environmental benefits if they are properly implemented. On the other hand, experiences and lessons learned will contribute to strengthening other community projects.

Sincerely,

Rosa Montañez
Executive Director

Ay/

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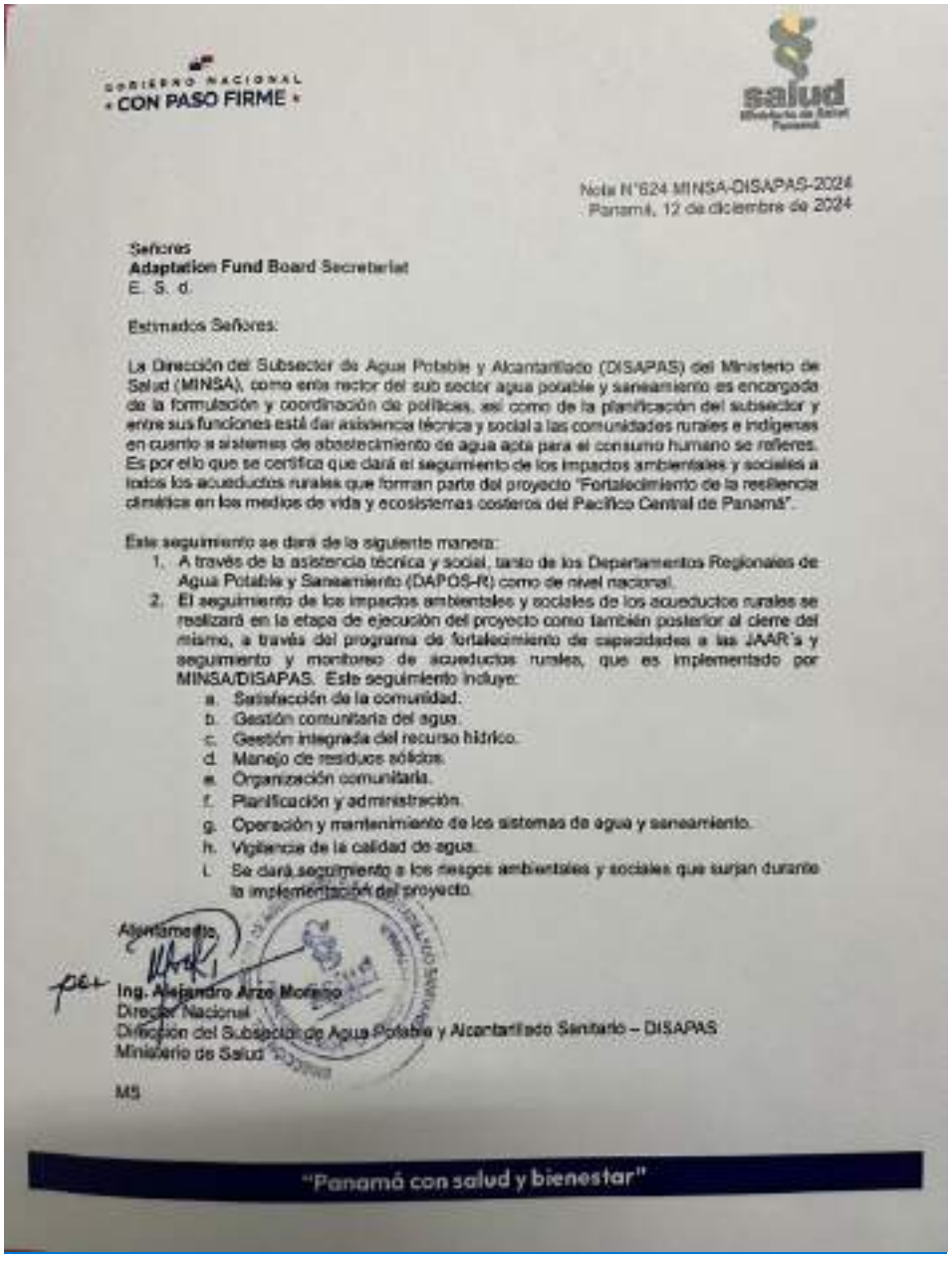

GOBIERNO NACIONAL
« CON PASO FIRME »

salud
Ministerio de Salud
Panamá

Nota N°624 MINSA-DISAPAS-2024
Panamá, 12 de diciembre de 2024

Señores
Adaptation Fund Board Secretariat
E. S. d.

Estimados Señores:

La Dirección del Subsector de Agua Potable y Alcantarillado (DISAPAS) del Ministerio de Salud (MINSA), como ente rector del sub sector agua potable y saneamiento es encargada de la formulación y coordinación de políticas, así como de la planificación del subsector y entre sus funciones está dar asistencia técnica y social a las comunidades rurales e indígenas en cuanto a sistemas de abastecimiento de agua apta para el consumo humano se refieres. Es por ello que se certifica que dará el seguimiento de los impactos ambientales y sociales a todos los acueductos rurales que forman parte del proyecto "Fortalecimiento de la resiliencia climática en los medios de vida y ecosistemas costeros del Pacífico Central de Panamá".

Este seguimiento se dará de la siguiente manera:

1. A través de la asistencia técnica y social, tanto de los Departamentos Regionales de Agua Potable y Saneamiento (DAPOS-R) como de nivel nacional.
2. El seguimiento de los impactos ambientales y sociales de los acueductos rurales se realizará en la etapa de ejecución del proyecto como también posterior al cierre del mismo, a través del programa de fortalecimiento de capacidades a las JAAR's y seguimiento y monitoreo de acueductos rurales, que es implementado por MINSA/DISAPAS. Este seguimiento incluye:
   a. Satisfacción de la comunidad.
   b. Gestión comunitaria del agua.
   c. Gestión integrada del recurso hídrico.
   d. Manejo de residuos sólidos.
   e. Organización comunitaria.
   f. Planificación y administración.
   g. Operación y mantenimiento de los sistemas de agua y saneamiento.
   h. Vigilancia de la calidad de agua.
   i. Se dará seguimiento a los riesgos ambientales y sociales que surjan durante la implementación del proyecto.

Atentamente,

Ing. Alejandro Arze Moreno
Director Nacional
Dirección del Subsector de Agua Potable y Alcantarillado Sanitario – DISAPAS
Ministerio de Salud

MS

"Panamá con salud y bienestar"

ANNEX 18 Budget broken down by output, activities and expense subcategories

Output No.	Description	Budget notes / Activities	UNIT	QTY.	UNIT COST (USD)	TOTAL (USD)	Year 1	Year 2	Year 3	Year 4	Total
1. Increase the resilience of ecosystems and vulnerable productive sectors through diversification and nature-based solutions: US$4,350,000											
Output 1.1	Strengthened livelihoods management through productive diversification, incorporation of technology and nature-based solutions in traditional production systems	1.1.1 At least 60 farm management plans developed and implemented to strengthen sustainable livestock and climate-smart agriculture, incorporating nature-based solutions (NbS) and technologies.	Contracts	2	375,000	750,000	220,000	275,000	255,000	0	750,000
		1.1.2 12 hives installed in 4 apiaries installed, including the training of beneficiaries (beekeepers) and the provision of equipment	Contracts	1	160,000	160,000	60,000	75,000	25,000	0	160,000
		1.1.3 Installed 4 pilot oyster farming experiences, including training of beneficiaries and provision of equipment.	Contracts	4	55,000	220,000	120,000	60,000	40,000	0	220,000
		1.1.4 17 comprehensive garden programs established (10 for vulnerable families and 7 in schools in five priority districts) with water harvesting systems and drip irrigation systems.	Contracts	7	30,000	210,000	105,000	60,000	45,000	0	210,000
			Contracts	10	9,000	90,000	45,000	45,000	0		90,000
		1.1.5 Installed 3 pilot tilapia farming project with implemented aquaponics techniques, including training and provision of equipment and 5 cultivation and use of black shell	Contracts	3	66,700	200,000	80,000	80,000	40,000	0	200,000
		1.1.6 10 strengthened community tourism experiences including the development of criteria or guidelines to reduce climate risk in the tourism operation and the development of a local community tourism strategy incorporating considerations for risk reduction and increased climate resilience	Contracts	10	22,500	225,000	25,000	100,000	100,000	0	225,000
		1.17 12 pilot community fishing projects developed with the incorporation of nature-based technologies and solutions and 4 projects to transform fishing products into value-added products with gender participation	Contracts	12	50,000	600,000	100,000	250,000	250,000	0	600,000
		1.18 10 pilot projects for efficient irrigation with the use of a water harvesting system and the use of innovative and low-cost technology	Contracts	1	125,000	125,000	25,000	50,000	50,000		125,000
		Total				2,580,000	780,000	995,000	805,000	0	2,580,000
Output 1.2	Strengthened value chains for the production, marketing and commercialization of climate-smart and gender-inclusive products and services	1.2.1Ten business plans developed and implemented for products or services with the greatest potential in the program.	Consultancy (1 lead + 1 assistants)* 7 month with field trips + editing and printing (20)+meetings with beneficiaries	1	80,000	80,000	0	80,000		0	80,000
			Lump sum (equipment, materials, others for implementation	10	41,500	415,000		233,500	181,500		415,000
		1.2.2 Reports on strategic investments for the development of business plans and more specialized studies.	Consultancy (1 lead + 1 assistants)* 5 month with field trips	1	22,500	22,500	0	10,000	12,500	0	22,500
			50 documents editing and printing. 40 pag.	1	32,500	32,500		6,500	26,000		32,500
		Total				550,000	0	330,000	220,000	0	550,000

Output 1.3	Mejorar la gestión de los recursos hídricos en las comunidades costeras mediante el fortalecimiento de la gestión de los acueductos rurales y la captación de agua con el uso de sistemas eficientes y de bajo costo. technologies.	1.3.1 Management of five rural aqueducts in the program area strengthened.	Workshop (facilitators, hotel, meeting room, meals: lunch-snacks-dinners, accommodation, basic audiovisual equipment, local travel, bags, notebooks, pens,etc.)	6	5,000	30,000	10,000	10,000	10,000	0	30,000
			Documents (6) editing and printing. 30pag. 5 cada JAAR	10	27,000		9,000	9,000	9,000		27,000
			Reforestation contracts	5	7,000	35,000	6,000	24,000	5,000		35,000
			Acquisition of equipment for maintenance of aqueducts					46,000	41,000		87,000
			Monitoring (fuel, travel expenses, lodging, etc.)					11,000	10,000		21,000
		1.3.2 20 multipurpose water harvesting systems installed using efficient and low-cost technologies.	Contracts	1	400,000	400,000	25,000	200,000	175,000	0	400,000
		Total				465,000	50,000	300,000	250,000	0	600,000
Output 1.4	Reduced pressure on high-value ecosystems and improved ecosystem services through actions for the protection, reforestation, enrichment and / or restoration of these ecosystems	1.4.1 An analysis of the loss / gain of forest cover in the program area through the use of geographic information systems.	Consultancy (1 lead *4 month)	1	14,836	14,836	14,836	0	0	0	14,836
			Data processing (software licenses, others)	1	35,964	35,964	35,964				35,964
			monitoring systems	1	31,200	31,200	31,200				
			Meetings Working Group	6	500	3,000	3,000				3,000
		1.4.2 An action plan for the recovery of high-value ecosystems that considers vulnerability scenarios and connectivity requirements for the benefit of biodiversity.	Contracts	1	75,000	75,000	50,000	25,000	0	0	75,000
		1.4.3 Installed and operating at least two community nurseries in the program área.	Lump sum (training, tools, nursery installation, seedling production, transportation, maintenance)	3	25,000	75,000	40,000	20,000	15,000	0	75,000
		1.4.3 150 ha of high value ecosystems reforested, enriched and / or restored.	Contracts	3	128,333	385,000	100,000	200,000	85,000	0	385,000
		Total				620,000	275,000	245,000	100,000	0	588,800
TOTAL							1,105,000	1,870,000	1,375,000	0	4,350,000

	2. Improved local and national capacity to deal with exposure to climate-related hazards and threats, through planning tools and risk reduction systems: US$2,550,000										
Output 2.1	Developed baseline studies on climate change with application in planning and environmental land management	Five climate vulnerability analyzes and adaptation measures for each of the hydrographic basins in the program area	Consultoria	5	110,000	550,000	250,000	200,000	100,000	0	550,000
		A model of sea level rise for the Central Pacific of Panama that identifies the areas of greatest vulnerability according to IPCC scenarios.	Contracts	1	200,000	200,000	140,000	60,000	0	0	200,000
		Three Environmental Land Management plans for prioritized districts.	Contracts	3	100,000	300,000	150,000	150,000	0	0	300,000
		Ten municipal strategic plans that incorporate environmental information and actions for adaptation and strengthening of climate resilience in their territories.	Contracts	1	200,000	200,000	50,000	110,000	40,000	0	200,000
		Total				1,250,000	590,000	520,000	140,000	0	1,250,000
Output 2.2	Strengthened the network of meteorological stations and sea level gauges, and the related Early Warning Systems (EWS)	Improved meteorological stations of the hydrographic basins in the program area to generate complementary agroclimatic and hydrological information.	Contracts	1	200,000	200,000	75,000	125,000	0		200,000
		Acquired, installed and connected three sea level gauges to the national and global tsunami monitoring and maintenance network.	Contracts	1	200,000	200,000	125,000	50,000	25,000	0	200,000
		The Early Warning System for floods, waves and tsunamis strengthened for the Central Pacific sector of Panama.	Contracts	1	175,000	175,000	0	100,000	75,000	0	175,000
		Total				575,000	200,000	275,000	100,000	0	575,000
Output 2.3	Developed a climate vulnerability and environmental risk modeling platform	A climate vulnerability and environmental risk modeling platform installed and operating.	Contracts	1	215,000	215,000	65,000	125,000	25,000		215,000
		Protocol for information management and the use of the modeling platform for climate vulnerability and environmental risks.	Contracts	1	10,000	10,000	0	10,000	0	0	10,000
		Total				225,000	65,000	135,000	25,000	0	225,000
Output 2.4	2.4 Developed case studies of cost effectiveness of community projects.	Ten Cost/effectiveness analysis of community projects developed by the AF, with experiences and lessons learned identified and systematized.	Contracts	2	137,500	275,000	75,000	100,000	100,000		275,000
		Total				275,000	75,000	100,000	100,000	0	275,000
Output 2.5	The monitoring and evaluation system for adaptation to climate change has been strengthened.	2.5.1 Analysis on the implementation of the Monitoring and Evaluation System for Adaptation to Climate Change with evaluation of results and goals set, and with recommendations for improving the indicators, and monitoring and evaluation protocols.	Contracts	1	225,000	225,000	75,000	75,000	75,000	0	225,000
		Total				225,000	75,000	75,000	75,000	0	225,000
		TOTAL					1,005,000	1,105,000	440,000	0	2,550,000

	3. Strengthened the capacity of key actors and improved knowledge on climate adaptation and resilience at the local and national levels: US$1,516,977										
Output 3.1	Strengthened the capacities of key actors on climate change and adaptation based on ecosystems, and successful experiences implemented	3.1.1 Stakeholder training plan on climate change and ecosystem-based adaptation.	Workshop (facilitators, hotel, meeting room, meals: lunch-snacks-dinners, accommodation, basic audiovisual equipment, local travel, bags, notebooks, pen, setc.). Lump sum	1	75,000	75,000	75,000	0	0	0	75,000
		3.1.2 Design of training modules with content validated by the Ministry of the Environment.	Consultoría	1	300,000	300,000	75,000	125,000	100,000	0	300,000
		3.1.3 Evaluation reports of each training process developed	Consultoría	1	75,000	75,000	50,000	25,000		0	75,000
		Total				450,000	200,000	150,000	100,000	0	450,000
Output 3.2	Strengthened national and local capacities and developed the tools that allow participation with a gender perspective in project activities	3.2.1 Action plan for the integration of the gender perspective into the project.	consultancy	1	10,000	10,000	10,000	0	0	0	10,000
		3.2.2 Implementation reports and memories of gender capacity building workshops	consultancy	1	20,000	20,000	10,000	10,000		0	20,000
			Memory editing and printing	1	20,000	20,000	5,000	5,000	10,000		20,000
		Total				50,000	25,000	15,000	10,000	0	50,000
Output 3.3	Strengthened the capacities of community-based organizations (CBO) and municipalities on climate change, ecosystem-based adaptation and comprehensive project management	Special modules designed and implemented for the implementation of adaptation strategies and plans at the local scale and project management for 200 beneficiaries.	consultancy	1	10000	10000	10,000			0	10,000
			Lump sum - Workshop (facilitators, hotel, meeting room, meals: lunch-snacks-dinners, accommodation, basic audiovisual equipment, local travel, bags, notebooks, pens etc.)	1	90000	90000	40,000	25,000	25,000	0	90,000
		Evaluation of capacity building processes.	consultancy (includes travel, food expenses, lodging, transportation, meetings, others)	1	10,000	10,000	0	5,000	5,000	0	10,000
		At least 15 proposals for adaptation projects of CBOs and municipalities prepared.	consultancy	1	25,000	25,000	0	15,000	10,000	0	25,000
		Intermunicipal agreements established for the development of joint adaptation actions.	consultancy	1	15,000	15,000	0	10,000	5,000	0	15,000
		Total				150,000	50,000	55,000	45,000	0	150,000
Output 3.4	Increased knowledge management on adaptation to climate change at the national level, by strengthening the adaptation portal and a program to systematize experiences, lessons learned and their appropriation	Comprehensive knowledge management program designed and in operation with established goals and indicators that facilitate its evaluation.	consultancy	1	20,000	20,000	20,000				20,000
			Lump sum Contracts (course videos, documents, brochures, bags, others)	1	155,000	155,000	30,000	50,000	50,000	25,000	155,000
		Adaptation Platform established in the Ministry of Environment strengthened and operational.	Lump sum (licencias, restructuración de plataforma FA, equipo)	1	41,977	41,977	14,000	14,000	13,977	0	41,977
		Systematization of experiences, exchanges and lessons learned from projects carried out in the program.	Lump sum	1	350,000	350,000	100,000	110,000	60,000	80,000	350,000
		Total				566,977	314,000	314,000	233,977	105,000	566,977
Output 3.5	3.5. Ensured the communication actions of the program that provide information to its stakeholders.	Program communication plan: It will allow informing, sharing, disseminating and educating key stakeholders and the general public about the results, lessons and experiences of the Project.	consultancy	1	15,000	15,000	15,000	0	0	0	15,000
		Implementation of communication actions of the program such as calls, campaigns, dissemination of lessons learned and experiences generated by the project, dissemination of program results through the different communication media and established platforms, including social networks. Media and social media monitoring report.	Contract	1	280,000	280,000	30,000	140,000	110,000	0	280,000
			Computer and communication equipment	2	5,000	10,000	5,000				5,000
		Total				305,000	50,000	140,000	110,000	0	300,000
		TOTAL					489,000	534,000	388,977	105,000	1,516,977
		Total Direct Costs					2,599,000	3,509,000	2,203,977	105,000	8,416,977
		Total cost of Executors					246,905	333,355	209,378	9,975	799,613
		Total Cost of the Program (Adaptation Fund)					2,845,905	3,842,355	2,413,355	114,975	9,216,590
		Total NIE					241,902	326,600	205,135	9,773	783,410
		GRAN TOTAL								10,000,000	10,000,000