



## ADAPTATION FUND

AFB/PPRC.33/21  
26 March 2024

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Adaptation Fund Board  
Project and Programme Review Committee  
Thirty third Meeting  
Bonn, Germany, 16-17 April 2024

Agenda Item 6c)

### **PROPOSAL FOR COSTA RICA, PANAMA**

## Background

1. The strategic priorities, policies and guidelines of the Adaptation Fund (the Fund), as well as its operational policies and guidelines include provisions for funding projects and programmes at the regional, i.e. transnational level. However, the Fund has thus far not funded such projects and programmes.

2. The Adaptation Fund Board (the Board), as well as its Project and Programme Review Committee (PPRC) and Ethics and Finance Committee (EFC) considered issues related to regional projects and programmes on a number of occasions between the Board's fourteenth and twenty-first meetings but the Board did not make decisions for the purpose of inviting proposals for such projects. Indeed, in its fourteenth meeting, the Board decided to:

- (c) Request the secretariat to send a letter to any accredited regional implementing entities informing them that they could present a country project/programme but not a regional project/programme until a decision had been taken by the Board, and that they would be provided with further information pursuant to that decision*

*(Decision B.14/25 (c))*

3. At its eighth meeting in March 2012, the PPRC came up with recommendations on certain definitions related to regional projects and programmes. However, as the subsequent seventeenth Board meeting took a different strategic approach to the overall question of regional projects and programmes, these PPRC recommendations were not included in a Board decision.

4. At its twenty-fourth meeting, the Board heard a presentation from the coordinator of the working group set up by decision B.17/20 and tasked with following up on the issue of regional projects and programmes. She circulated a recommendation prepared by the working group, for the consideration by the Board, and the Board decided:

- (a) To initiate steps to launch a pilot programme on regional projects and programmes, not to exceed US\$ 30 million;*
- (b) That the pilot programme on regional projects and programmes will be outside of the consideration of the 50 per cent cap on multilateral implementing entities (MIEs) and the country cap;*
- (c) That regional implementing entities (RIEs) and MIEs that partner with national implementing entities (NIEs) or other national institutions would be eligible for this pilot programme, and*

- (d) *To request the secretariat to prepare for the consideration of the Board, before the twenty-fifth meeting of the Board or intersessionally, under the guidance of the working group set up under decision B.17/20, a proposal for such a pilot programme based on consultations with contributors, MIEs, RIEs, the Adaptation Committee, the Climate Technology Centre and Network (CTCN), the Least Developed Countries Expert Group (LEG), and other relevant bodies, as appropriate, and in that proposal make a recommendation on possible options on approaches, procedures and priority areas for the implementation of the pilot programme.*

*(Decision B.24/30)*

5. The proposal requested under (d) of the decision above was prepared by the secretariat and submitted to the Board in its twenty-fifth meeting, and the Board decided to:

- (a) *Approve the pilot programme on regional projects and programmes, as contained in document AFB/B.25/6/Rev.2;*
- (b) *Set a cap of US\$ 30 million for the programme;*
- (c) *Request the secretariat to issue a call for regional project and programme proposals for consideration by the Board in its twenty-sixth meeting; and*
- (d) *Request the secretariat to continue discussions with the Climate Technology Center and Network (CTCN) towards operationalizing, during the implementation of the pilot programme on regional projects and programmes, the Synergy Option 2 on knowledge management proposed by CTCN and included in Annex III of the document AFB/B.25/6/Rev.2.*

*(Decision B.25/28)*

6. Based on the Board Decision B.25/28, the first call for regional project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Fund was sent out on 5 May 2015.

7. At its twenty-sixth meeting the Board decided *to request the secretariat to inform the Multilateral Implementing Entities and Regional Implementing Entities that the call for proposals under the Pilot Programme for Regional Projects and Programmes is still open and to encourage them to submit proposals to the Board at its 27th meeting, bearing in mind the cap established by Decision B.25/26.*

*(Decision B.26/3)*

8. At its twenty-seventh meeting the Board decided to:

- (a) *Continue consideration of regional project and programme proposals under the pilot programme, while reminding the implementing entities that the amount set aside for the pilot programme is US\$ 30 million;*
- (b) *Request the secretariat to prepare for consideration by the Project and Programme Review Committee at its nineteenth meeting, a proposal for prioritization among regional project/programme proposals, including for awarding project formulation grants, and for establishment of a pipeline; and*
- (c) *Consider the matter of the pilot programme for regional projects and programmes at its twenty-eighth meeting.*

*(Decision B.27/5)*

9. The proposal requested in (b) above was presented to the nineteenth meeting of the PPRC as document AFB/PPRC.19/5. The Board subsequently decided:

- a) *With regard to the pilot programme approved by decision B.25/28:*
  - (i) *To prioritize the four projects and 10 project formulation grants as follows:*
    - 1. *If the proposals recommended to be funded in a given meeting of the PPRC do not exceed the available slots under the pilot programme, all those proposals would be submitted to the Board for funding;*
    - 2. *If the proposals recommended to be funded in a given meeting of the PPRC do exceed the available slots under the pilot programme, the proposals to be funded under the pilot programme would be prioritized so that the total number of projects and project formulation grants (PFGs) under the programme maximizes the total diversity of projects/PFGs. This would be done using a three-tier prioritization system: so that the proposals in relatively less funded sectors would be prioritized as the first level of prioritization. If there are more than one proposal in the same sector: the proposals in relatively less funded regions are prioritized as the second level of prioritization. If there are more than one proposal in the same region, the proposals submitted by relatively less represented implementing entity would be prioritized as the third level of prioritization;*
  - (ii) *To request the secretariat to report on the progress and experiences of the pilot programme to the PPRC at its twenty-third meeting; and*
- b) *With regard to financing regional proposals beyond the pilot programme referred to above:*
  - (i) *To continue considering regional proposals for funding, within the two categories originally described in document AFB/B.25/6/Rev.2: ones requesting up to US\$ 14 million, and others requesting up to US\$ 5 million, subject to review of the regional programme;*

(ii) *To establish two pipelines for technically cleared regional proposals: one for proposals up to US\$ 14 million and the other for proposals up to US\$ 5 million, and place any technically cleared regional proposals, in those pipelines, in the order described in decision B.17/19 (their date of recommendation by the PPRC, their submission date, their lower “net” cost); and*

(iii) *To fund projects from the two pipelines, using funds available for the respective types of implementing entities, so that the maximum number of or maximum total funding for projects and project formulation grants to be approved each fiscal year will be outlined at the time of approving the annual work plan of the Board.*

*(Decision B.28/1)*

10. At its thirty-first meeting, having considered the comments and recommendation of the Project and Programme Review Committee, the Adaptation Fund Board (the Board) decided:

(a) *To merge the two pipelines for technically cleared regional proposals established in decision B.28/1(b)(ii), so that starting in fiscal year 2019 the provisional amount of funding for regional proposals would be allocated without distinction between the two categories originally described in document AFB/B.25/6/Rev.2, and that the funding of regional proposals would be established on a ‘first come, first served’ basis; and*

(b) *To include in its work programme for fiscal year 2019 provision of an amount of US\$ 60 million for the funding of regional project and programme proposals, as follows:*

(i) *Up to US\$ 59 million to be used for funding regional project and programme proposals in the two categories of regional projects and programmes: ones requesting up to US \$14 million, and others requesting up to US\$ 5 million; and*

(ii) *Up to US\$ 1 million for funding project formulation grant requests for preparing regional project and programme concepts or fully-developed project and programme documents.*

*(Decision B.31/3)*

11. The following project concept document titled “Enhancing the Climate Resilience of Coastal Communities in Limon, Costa Rica, and Bocas del Toro, Panama through Nature-based Solutions for Local Livelihoods” was submitted for Costa Rica and Panama by the United Nations Environment Programme (UNEP), which is a Multilateral Implementing Entity of the Adaptation Fund.

12. This is the first submission of the regional project concept proposal using the three-step submission process.

13. It was first submitted as a project pre-concept in advance of the thirty-sixth meeting and was not endorsed by the Board. It was subsequently submitted in advance of the thirty-seventh meeting and the board decided:

- (a) To endorse the pre-concept note as supplemented by the clarifications provided by the United Nations Environment Programme (UNEP) in response to the request made by the technical review;*
- (b) To request the secretariat to notify UNEP of the observations in the review sheet annexed to the notification of the Board's decision, as well as the following issues:*
  - (i) The concept proposal should further justify the climate rationale of the regional approach;*
  - (ii) The concept proposal should provide more details on the ecosystem-based adaptation approaches and options that will be implemented;*
- (c) To approve the project formulation grant of US\$ 20,000;*
- (d) To encourage the Governments of Costa Rica and Panama to submit, through UNEP, a concept note proposal that would also address the observations under subparagraph (b) above.*

**(Decision B.37/25)**

14. The current submission was received by the secretariat in time to be considered in the forty-second Board meeting. The secretariat carried out a technical review of the project proposal, with the diary number AF00000251, and completed a review sheet.

15. In accordance with a request to the secretariat made by the Board in its 10th meeting, the secretariat shared this review sheet with UNEP, and offered it the opportunity of providing responses before the review sheet was sent to the PPRC.

16. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25.15, the proposal is submitted with changes between the initial submission and the revised version highlighted.



ADAPTATION FUND

## ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY:

**Countries/Region:** Costa Rica and Panama/ Latin America and Caribbean

**Project Title:** Enhancing the climate resilience of coastal communities in Limon, Costa Rica and Bocas del Toro, Panama through Nature-based Solutions for Local Livelihoods

**Thematic Focal Area:** Disaster Risk Reduction (DRR) and early warning systems

**Implementing Entity:** United Nations Environmental Program (UNEP)

**Executing Entities:**

**AF Project ID:** AF00000251

**IE Project ID:**

**Requested Financing from Adaptation Fund (US Dollars): 12,100,000**

**Reviewer and contact person:** Micol Ullmann Auger

**Co-reviewer(s):** Imen Meliane

**IE Contact Person:**

### Technical Summary

The project “Enhancing the climate resilience of coastal communities in Limon, Costa Rica and Bocas del Toro, Panama through Nature-based Solutions for Local Livelihoods” aims to reduce vulnerability and increase adaptive capacity of ecosystems and livelihoods of local communities in Limon and Bocas del Toro to cope with rapid and slow-onset climate events, the main climate hazards being heavy rainfall episodes, strong winds and sea level rise. This will be done through the three components below:

Component 1: Strengthening decision-making and adaptation measures in a changing climate context through increased access to and use of knowledge and information by key stakeholders. (USD 2,000,000)

Component 2: Implementing pilot cost-effective Nature-based Solutions for DRR and climate change adaptation in terrestrial, watershed, coastal-marine ecosystems and protected areas in Bocas del Toro and Limón. (USD 4,000,000)

Component 3: Enhancing the coping capacity of local livelihoods and value chains (including tourism, agriculture and fishing) and their access to financial strategies to support adaptation processes. (USD 4,000,000).

Requested financing overview:

Project/Programme Execution Cost: USD 1,000,000

	<p>Total Project/Programme Cost: USD 11,000,000  Implementing Fee: USD 1,100,000  Financing Requested: USD 12,100,000</p> <p>The proposal includes a request for a project formulation grant and/or project formulation assistance grant of USD 80,000.</p> <p>The initial technical review finds that the concept note provides necessary information at this stage of development of the proposal. The review highlights some areas where additional details should be provided in the fully developed proposal.</p>
Date	January 22,2024

Review Criteria	Questions	Comments
Country Eligibility	1. Are all of the participating countries party to the Kyoto Protocol, or the Paris Agreement?	<b>Yes.</b>
	2. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change?	<p><b>Yes.</b></p> <p>Limon and Bocas del Toro are located in a bi-national continuous bio-geographic region increasingly impacted by extreme events and climate variability, particularly heavy rainfall and strong winds, as well as slow-onset climate change leading to sea level rise and consequent coastal erosion, landslides, overflow of rivers, inland and coastal flooding, and storm surges.</p>



Project Eligibility	1. Have the designated government authorities for the Adaptation Fund from each of the participating countries endorsed the project/programme?	<b>Yes.</b> As per the Endorsement letters dated December 5, 2022 and December 13, 2022.
	2. Does the length of the proposal amount to no more than fifty (50) pages for the project/programme concept, including its annexes?	<b>No.</b> The proposal is 62 pages.
	3. Does the regional project / programme support concrete adaptation actions to assist the participating countries in addressing the adverse effects of climate change and build in climate resilience, and do so providing added value through the regional approach, compared to implementing similar activities in each country individually?	<b>Yes.</b> As outlined in the theory of change on pages 13 and 17-21. The proposal outlines the suitability of activities in responding to the threats posed by likely climate scenarios and the countries' needs and adaptation priorities.  The proposed activities are specifically designed to address the identified climate change impacts in Limon and Bocas del Toro and integrate climate change considerations into various sectors, such as regional and local planning, watershed management, marine and coastal ecosystems and livelihoods. The proposal contemplates climate risk assessments to guide the prioritization of Nature-Based Solutions (NbS) and livelihood adaptation measures. Strengthening climate information systems aids in better preparedness through Early Warning Systems (EWS).  The regional approach maximizes opportunities for cross-country learning and South-South cooperation, while the countries' similar socioeconomic, environmental, and climatic challenges and geographic characteristics support a common approach to landscape and ecosystem management.

	<p>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 of the Fund?</p>	<p><b>Yes.</b></p> <p>As outlined on pages 1 and 10-11. The project area is home to some 630,488 people, 316,465 women and 333,465 men, 72% in Limon and 28% in Bocas del Toro. Vulnerable groups and stakeholders include people living in poverty, female-headed households with caregiving responsibilities, Afro-Caribbean inhabitants, Indigenous communities with limited resources to address climate risks, small tourism entrepreneurs, farmers, and fishers.</p> <p>During the project formulation phase, comprehensive community surveys will be conducted to assess vulnerabilities and identify detailed ecosystem-based adaptation strategies and risk management plans.</p> <p>Across various local livelihoods, the project expects increased productivity, reduced damages and losses, integration into local value chains, diversification, and increased growth. Women and youths are specifically targeted for increased access to training, financial opportunities, and employment.</p> <p>Nature-based Solutions (NbS) are central to the project's environmental strategy. By focusing on protection, restoration, and sustainable use of natural resources, the project aligns with international conservation priorities. Mangrove and coral reef restoration contributes to reducing the impact of tropical storms and coastal flooding, in line with global sustainability goals.</p>
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	5. Is the project / programme cost-effective and does the regional approach support cost-effectiveness?	<p><b>Yes.</b> As outlined on pages 23-25. The proposal provides a logical explanation of the selected scope and approach and refers to specific projects in the region that highlight the cost-effectiveness of NbS for flood risk management compared to artificial coastal defenses, including coral reef and mangrove restoration projects.</p>
	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? If applicable, it is also possible to refer to regional plans and strategies where they exist.	<p><b>Yes.</b> As outlined on pages 26-33.</p>
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	<p><b>Yes.</b> As per the comprehensive list and explanation included on pages 33-37.</p>
	8. Is there duplication of project / programme with other funding sources?	<p><b>Not likely.</b> As outlined in the table on pages 38-42. The proposal also refers to several of the listed projects for lessons learned and complementarity.</p> <p><u>The fully developed proposal</u> should provide more details on the project's framework for coordination with other projects/programmes to enable understanding how the project will coordinate with existing initiatives to avoid overlap, garner lessons learned and take advantage of potential synergies.</p>

	<p>9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?</p>	<p><b>Yes.</b></p> <p>Component 1 is dedicated to knowledge management and includes production and dissemination of climate knowledge and information systems, training material, methodologies and reports, improved access to early warning systems for climate identified risks, and on mainstreaming climate change adaptation into landscape planning and decision making, including through annual training events for local authorities.</p> <p><u>The fully developed proposal</u> should provide more detail on whether the project will maintain a database of these knowledge products or how it will ensure continued access to educational materials and reports, including through radio and other channels, particularly considering the barriers to knowledge dissemination identified in the consultations process.</p>
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	<p>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?</p>	<p><b>Yes.</b> As outlined on pages 43-47. The initial consultations involved key stakeholders, including vulnerable groups and gender considerations and the proposal includes a consultation report on methodologies used and key feedback from stakeholders consulted.</p> <p>Further consultations and in-depth community surveys are planned during the project development phase.</p> <p>The project development phase, should ensure consultations with people with disabilities (cited as a key vulnerable group which accounts for 10% of their populations in both the canton of Talamanca and Matina).</p> <p>The fully developed proposal should provide more details about how the needs and concerns of people with disabilities will be ascertained and integrated into project design. It should also provide more detailed documentation on the consultation process including the list of stakeholders consulted, principles of choice, role ascription, date of consultation.</p>
	<p>11. Is the requested financing justified on the basis of full cost of adaptation reasoning?</p>	<p><b>Yes.</b></p>
	<p>12. Is the project / program aligned with AF's results framework?</p>	<p><b>Yes.</b> As outlined on pages 52-54.</p>
	<p>13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?</p>	<p><b>Yes.</b> As outlined on page 48.</p> <p>Drawing on lessons learned from past UNEP projects such as the CityAdapt Initiative in Latin America, the proposal highlights key success factors for sustainability, including the early institutionalization of climate action, government support, and partnerships. The project prioritizes</p>

		representation of diverse groups, ensuring a reasonable duration for stakeholder engagement, and addressing the financial viability of NbS for sustained success.
	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?	<p><b>Yes.</b> As per the checklist on page 49. The proposal also includes an initial gender analysis which is further informed by consultations carried out with local communities and organizations.</p> <p><u>The fully developed proposal</u> should state the risk category in which the screening process has classified the project/programme (i.e. Category A, B or C), as per the AF's ESP.</p>
	15. Does the project promote new and innovative solutions to climate change adaptation, such as new approaches, technologies and mechanisms?	<p><b>Yes.</b> While many of the Nature-Based Solutions (NbS) have been previously implemented in the region, the proposal's innovation is in its integration of various successful strategies from the region to create a comprehensive package of Nature-Based Solutions prioritizing climate-smart practices in key sectors like agriculture, tourism, and fisheries, including regenerative agriculture, ecosystem-based fisheries management, and sustainable tourism practices, combined with innovative financial and market strategies to support and promote climate adaptation solutions in the private and microfinance sectors.</p>
Resource Availability	1. Is the requested project / programme funding within the funding windows of the regional projects/programmes?	<b>Yes.</b>
	2. Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 10 per cent of the project/programme for	<p><b>Yes.</b> The fully developed proposal should ensure that the executing entities are identified and their roles are described in detail in the implementation arrangements.</p>

	implementing entity (IE) fees and at or below 10 per cent of the project/programme cost for the execution costs?	
Eligibility of IE	1. Is the project/programme submitted through an eligible Multilateral or Regional Implementing Entity that has been accredited by the Board?	<b>Yes.</b> The United Nations Environment Programme (UNEP) is an accredited implementing entity.
Implementation Arrangements	1. Is there adequate arrangement for project / programme management at the regional and national level, including coordination arrangements within countries and among them? Has the potential to partner with national institutions, and when possible, national implementing entities (NIEs), been considered, and included in the management arrangements?	n/a at concept stage
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage
	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? Proponents are encouraged to refer to the Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy, for details.	n/a at concept stage
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage
	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage
	6. Is a detailed budget including budget notes included?	n/a at concept stage

	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?	n/a at concept stage
	8. Does the M&E Framework include a breakdown of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage
	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?	n/a at concept stage
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage



## PROJECT PROPOSAL TO THE ADAPTATION FUND

### PART I: PROJECT INFORMATION

**Project Category:** Regional Project Proposal

**Title of Project:** Enhancing the climate resilience of coastal communities in Limon, Costa Rica and Bocas del Toro, Panama through Nature-based Solutions for local livelihoods

**Countries:** Costa Rica and Panama

**Thematic Focal Area<sup>1</sup>:** Disaster Risk Reduction (DRR) and early warning systems

**Type of Implementing Entity:** International

**Implementing Entity:** United Nations Environmental Program (UNEP)

**Amount of Financing Requested:** 12.1M (in U.S Dollars Equivalent)

**Project Formulation Grant Request:** Yes  No

**Amount of Requested financing for PFG:** 80,000 (in U.S Dollars Equivalent)

**Letters of Endorsement (LOE) signed for all countries:** Yes

**Stage of Submission:**

This proposal has been submitted before including at a different stage (pre-concept)

In case of a resubmission, please indicate the last submission date: [Click or tap to enter a date.](#)

### PROJECT BACKGROUND AND CONTEXT

#### General characterization of the proposed project location

This project proposal has as its general area of interest the Caribbean provinces of Limon (Costa Rica) and Bocas del Toro (Panama), covering 13,846 km<sup>2</sup> (66% in Costa Rica and 34% in Panama)<sup>2</sup> and includes the urban and rural localities of the canton of Limon, and the rural and coastal areas of Talamanca (including Cahuita National Park and Puerto Viejo), Pococi (including Tortuguero National Park), Siquirres, and Matina, in Limon province. In the province of Bocas del Toro, the preliminarily considered communities are Bocas de Toro, Bastimentos, Changuinola, Chiriqui Grande, and Almirante, among others.

This area is home to some 630.488 people, 316.465 women and 333.465 men, 72% in Limon and 28% in Bocas del Toro (INEC-CR, 2020; CECOMPRO, 2018). The area is a bi-national, continuous bio-geographic unit sharing climate, rugged relief, rushing rivers, rich continental and marine biodiversity, tropical forests, a seagrass-coral-mangrove marine/coastal ecosystem mosaic, and charismatic and endemic species. While the northern part of the region is home to the Tortuguero canals -Costa Rica's 2nd largest wetland- the southern section includes Bocas del Toro Archipelago, an outstanding group of islands between Almirante Bay and Chiriqui Lagoon. A high mountain range delimits the region to the west in a NW-SE direction, where a large number of rivers originate, flowing towards the Caribbean. Among the most relevant watersheds are the Tortuguero, Reventazon-Parismina, Matina, La Estrella, Sixaola and Changuinola. The climate is very humid, with temperatures between 27 and 30 °C. The region has abundant rainfall from 6,000 mm per year in the mountain range to 2,500 mm per year in the coastal plains, with the exception of coastal Tortuguero, where rainfall exceeds 5,000 mm per year.

<sup>1</sup> AF thematic areas are: Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

<sup>2</sup> These values do not include marine areas where the project will also be implemented.

There is no defined dry season, although there are two relatively dry periods: February-March, and September-October.

Much of the territory is protected through different management categories including: Barra del Colorado National Wildlife Refuge, Tortuguero National Park, Barbilla National Park, Hitoy-Cerere Biological Reserve, Cahuita National Park, Gandoca-Manzanillo National Wildlife Refuge (Limón); La Amistad International Park (binational); and Bastimentos Island National Marine Park, Palo Seco Protected Forest, San San-Pond Sak Wetland of International Importance, and Matumbal Reserve Zone (Bocas del Toro).



Figure 1. Location map of AF project proposal

Limon and Bocas del Toro share similar cultural diversity, including indigenous inhabitants (Bribri, Cabécar, Ngäbe, Buglé, Naso) Afro-descendants, Chinese, mulattos, mestizos, and whites, each group contributing to the regional cultural diversity. In Limón, there is also a strong presence of Nicaraguan immigrants. There are foreigners of various nationalities as well, mainly in the tourism destinations in both provinces.

Agriculture is a relevant source of employment, mainly for Limon, and it concentrates mostly in the plains (CECOMPRO 2018; ACTo-MINAE 2021). Although the primary sector creates employment, it is poorly remunerated. Banana is the most important crop in both provinces, produced by large companies for export. Matina is the main producer and exporter of bananas in Costa Rica. Bocas del Toro is the largest national banana producer in Panama. Plantain is also relevant in Bocas del Toro and Limon. Pineapple is grown in Pococi, Guacimo, and Siquirres. Cocoa production is widespread in Changuinola and Talamanca. Pastures are an integral part of the region's landscapes. Common practices are the removal of forest cover that protects the soil and the invasion of buffer areas of rivers and streams. As a result, these crops become vulnerable to drought, flooding and the spread of pests and diseases related to climate change. Beef cattle production predominates

in Pococi, Guacimo and Siquirres. Buffalo is bred in Bocas del Toro, leading the Panamanian production of that race. Poor land use due to livestock practices such as elimination of tree cover and river encroachment increases soil degradation, as well as the vulnerability to climate events. According to Costa Rica's 2017-2018-2019 Agricultural Sector Performance reports (SEPSA 2020), women show a lower participation in the agricultural labor market, their average unemployment rate in 2017-2019 was 17%, while that of men was 7%. As a result, women are forced to start businesses out of necessity and in informality. In relation to access to land, data from the VI National Agricultural Census 2014 (CENAGRO), state: Of the 100% of farms registered in individuals, 84% are run by men, while only 16% are run by women. Of the 2,406,418.4 hectares under cultivation, women produce only 4% of the land. In Panama, even though more and more women depend exclusively on the agricultural sector, the existing gaps in land tenure, access to credit, training and development of sustainable livelihoods favor men more. In general, women are attributed the role of non-technified labor and this work is not valued accordingly (MIAMBIENTE-UNEP2021).

Fishery is also a common livelihood in the region. The fishery is mostly artisanal, and its main destinations are local trade (e.g., for tourism), self-consumption, and direct sales. Sport fishing, linked to tourism, is also relevant in some areas (MEF-MIAMBIENTE, MIDEPLAN-MINAE, 2022). Lacking appropriate practices, fishing impacts and deteriorates coastal and marine ecosystems, reducing coastal resilience to climate change. Mismanagement of agriculture, livestock and fisheries leads to high costs, weak value chains, low profits and, ultimately, poverty.

Another important sector is the service sector, being the main source of employment in Bocas del Toro (CECOMPRO 2018). Tourism predominates along the coast and in some rural and indigenous communities, in areas vulnerable to flooding, drought, sea level rise, coastal erosion, saltwater intrusion, and others. Even though it is recognized that tourism is a relevant source of income, local communities, businesses, and authorities have not yet been able to harmonize the industry with its impacts to the environment; furthermore, climate change and climate variability associated risks are not being considered in tourism planning and development. Tourism is relevant in both provinces, and is also the source of employment for the more vulnerable and less qualified members of the communities (Barrantes and Sandoval, 2021; ATP, 2020; MIDEPLAN, 2014). Tourism concentrates in three geographical points: Tortuguero to the north, Cahuita-Puerto Viejo in the middle and the Bocas del Toro archipelago to the south-east. Poor tourism practices include excessive water use and pollution of natural attractions such as mangroves, solid waste, beaches and coral reefs, which increase vulnerability to climate change.

### **Climate impact analysis**

The project area is impacted by climate variability and extreme events (tropical waves, hurricanes, cold fronts, El Niño–Southern Oscillation (ENSO)), and by slow-onset climate change (sea level rise causing coastal erosion). Risks associated with climate events which affects the Caribbean coasts of Panama and Costa Rica include flooding, landslides, drought, and sea level rise (IHUC-CEPAL 2012). They are also identified by local inhabitants, as indicated by the binational consultation survey with stakeholders in Limon and Bocas del Toro (UNEP 2022a), and the consultation workshops in Limon (UNEP 2022b) and Bocas del Toro (UNEP 2022c).

Among commonly reported consequences of these events are: critical damage to public infrastructure such as roads and bridges, partial damage to total loss of homes, communities isolated or cut off, loss of crops and livestock, failure of electricity and freshwater supply, and deaths from drowning and other causes (DesInventar, 2022<sup>3</sup>). The province of Limon is the third in Costa Rica in terms of the number of deaths associated with extreme climate events, mainly due to cold fronts and tropical waves (IMN-PNUD 2021).

The binational consultation survey (UNEP 2022a) and workshops (UNEP 2022b; UNEP 2022c) gathered information on damages and losses suffered by households and communities due to climatic events. Regarding damages and losses suffered by households, 26% of the people surveyed report a reduction in their land or properties, 21% report damage to their homes, 18% report loss of furniture or appliances, 16% report other losses such as clothing and books (non-cumulative numbers), and 6% report injuries or damage to health. In terms of damages and losses suffered by the community as a whole, 69% report damage to highways, roads and bridges, 66% report loss of crops, 47% report closure of public services such as water, electricity,

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<sup>3</sup> DesInventar reports for Costa Rica (1968-2019) and Panama (1933-2020).

telecommunications, schools, and health centers; 34% report loss of animals, and 24% report loss of forests, mangroves, coral reefs or wildlife (non-cumulative numbers). Additionally, in relation to damages from sea level rise, 21% report damage to buildings and constructions along the coast, 17% report relocation of structures, and 9% report loss of docks and piers. In the workshops, participants mentioned damages to homes, decrease in crop production and reduction of water availability along watersheds (UNEP 2022b), as well as losses in agriculture, livestock, fishing and tourism (UNEP 2022c). Climate change impacts reported were:

- **Flooding:** According to the binational consultation survey (UNEP 2022a) 19% of respondents have noticed a great increase in rainfall, while 34% noticed a reduction in rainfall in the last ten years. Flooding was also mentioned in the workshops in connection with the main rivers and watersheds (UNEP 2022b; UNEP 2022c). IPCC (2021) projections indicate an increase in intensity and frequency of heavy precipitation and river flow in Central America, compared to the modern period. Even so, flooding is a reality in Limón and Bocas del Toro today. Costa Rica's Caribbean region is the country's area with the highest frequency of flooding, with precipitation fluctuating between 2000 and more than 8000 mm per year, and present throughout the year, so the probability of flooding is high (IMN-PNUD 2021; Lizano & Lizano 2022). Flooding is also a common occurrence in Bocas del Toro. The areas most exposed to flooding in both provinces include the watersheds of Tortuguero, Reventazon-Parismina, Pacuare, Matina, Bananito, La Estrella, Sixaola, Guabito and Changuinola rivers (DCC-MINAE, MIDEPLAN 2021). Table 1 reports the main climate events provoking flooding in the project area in the current century.
- An exposure criterion is **proximity to rivers**. Given the territory's topography and hydrography, most communities are close to rivers and may be affected by flooding. For example, according to National Institute for Rural Development (INDER 2016, cited by Retana et al. 2017), most villages in the canton of Matina are located on the plains of the Matina and Madre de Dios rivers and only a few are in higher areas. In the canton of Talamanca, 48.1% of the population belongs to the indigenous peoples Bribri, Cabécar or Ngäbe (Retana et al. 2017), so risk management must be adjusted to the characteristics of each cultural group. **Location along the coast** and **location on islands** are other exposure factors. These affect towns such as San Francisco, Tortuguero, Barra de Parismina, port and city of Limón, Cahuita, Puerto Viejo, Manzanillo, Changuinola, Almirante and the islands of Colón, Bastimentos, Popa, Carenero and Cristóbal. Workshop participants mentioned as risk factors the location of housing and human activities near the coast, on islands or in watersheds (UNEP 2022b; UNEP 2022c).
- **Landslides:** Several regions in Central America are considered areas of high incidence of observed fatal landslides. There, ENSO-driven fluctuations in rainfall amounts and climate change seem to be key factors (IPCC 2021). Critical sites are the old town of San Valentín, in the hills south of Guápiles, as well as numerous locations between districts La Estrella and Telire, in the foothills of the Talamanca range. Land subsidence in Bocas del Toro has been attributed to large amounts of rainfall (Cathalac, 2020).
- **Drought:** According to the binational consultation survey with stakeholders (UNEP 2022a) 56% of respondents noted that now it is much hotter, 15% report high water scarcity due to drought, plus 15% that notice frequent water shortages. Drought was also mentioned in the workshops, mainly in Bocas del Toro (UNEP 2022c<sup>4</sup>). Several studies project decreases in runoff and river discharge for Central America by the end of the century, assessed *medium confidence* in projections of increases in hydrological droughts (IPCC 2021). In terms of agricultural and ecological drought, a significantly drier northern region and a wetter southern region are projected in Central America for mid-century, and more pronounced dry periods during the rainy season by the end of the century under RCP8.5 (IPCC 2021). Bananas are the main export in the project's area of interest and are highly affected by drought, as it stresses the plants. The impact of drought is felt in relevant banana growing areas such as Matina, Limón, Guabito and others. In Matina, there are 10,563 people at high and high-medium risk due to the threat of extreme dry events, while in Talamanca there are 11,233 people in these same conditions (Retana et al. 2017).
- **Sea Level Rise (SLR):** According to the binational consultation survey with stakeholders (UNEP 2022a)

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<sup>4</sup> Between October and December 2022, a stakeholder consultative process was carried out by UNEP, in close coordination with MINAE and MiAmbiente, in the framework of this project proposal. This process included an online survey (UNEP 2022a) and two workshops, one in Limon (UNEP 2022b) and the other in Boca del Toro (UNEP 2022c). Detailed results are available online at the following address: [https://drive.google.com/drive/folders/18F5Cp7pFYvIXeFaxq55hgY65\\_1YzkGvC](https://drive.google.com/drive/folders/18F5Cp7pFYvIXeFaxq55hgY65_1YzkGvC).



59% of respondents report loss of shoreline and beach erosion in the last 10 years. Sea Level Rise was also mentioned in the workshops in connection to wetlands, mangroves, beaches, islands, and coastal communities (UNEP 2022b; UNEP 2022c). Coastal areas with potential flood hazard -either due to sea level rise or precipitation- and under intense coastal erosion include Limón, SE Westfalia, Cahuita, Puerto Vargas, Manzanillo and Gandoca (Barrantes and Sandoval, 2021). One of the most reported cases is that of Cahuita National Park, which has seen part of its coastline reduced in recent decades. Costa Rica's SLR scenarios show that in 2100, both Moín and Cahuita could be flooded (Lizano & Lizano 2022). SLR may also be accompanied by coastal erosion, saltwater intrusion and drinking water shortages in coastal communities, as occurred in Isla Colon and Chiriqui Grande in November 2022. Figure 7 also shows areas along the coast in Limon with an estimation of sea level rise to 0.30 meters by 2040 (shown in turquoise). Areas at risk of flooding in Bocas del Toro are shown in red in Figure 8.

The following map of Limon shows the geographic areas exposed to flooding, landslides and sea level rise:

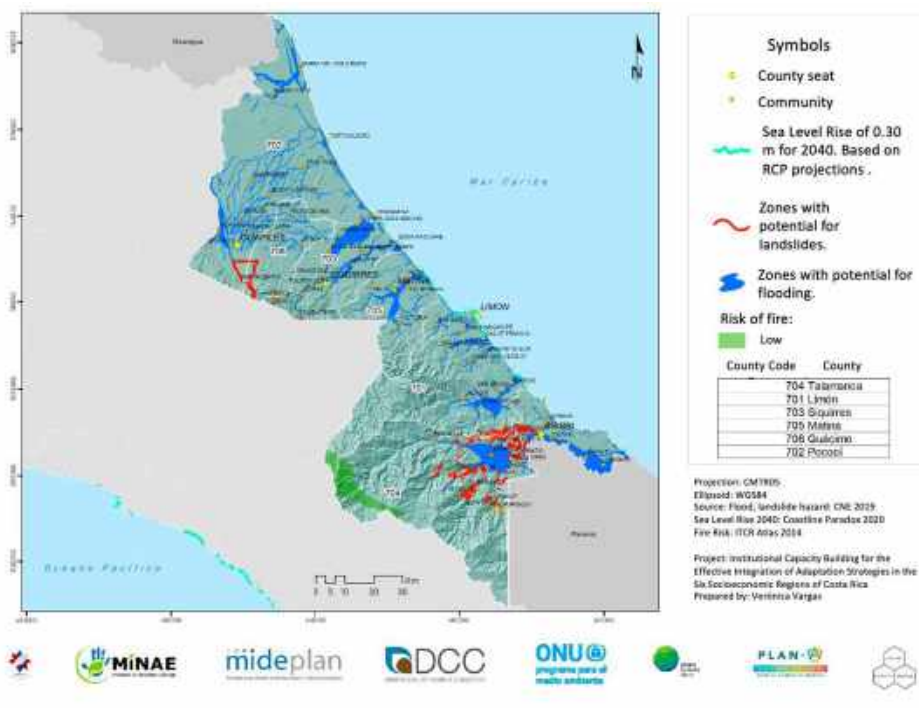


Figure 2. Risk map of Limon, Costa Rica

Additionally, the following map shows the areas of risk due to SLR in Bocas del Toro (shown in red):

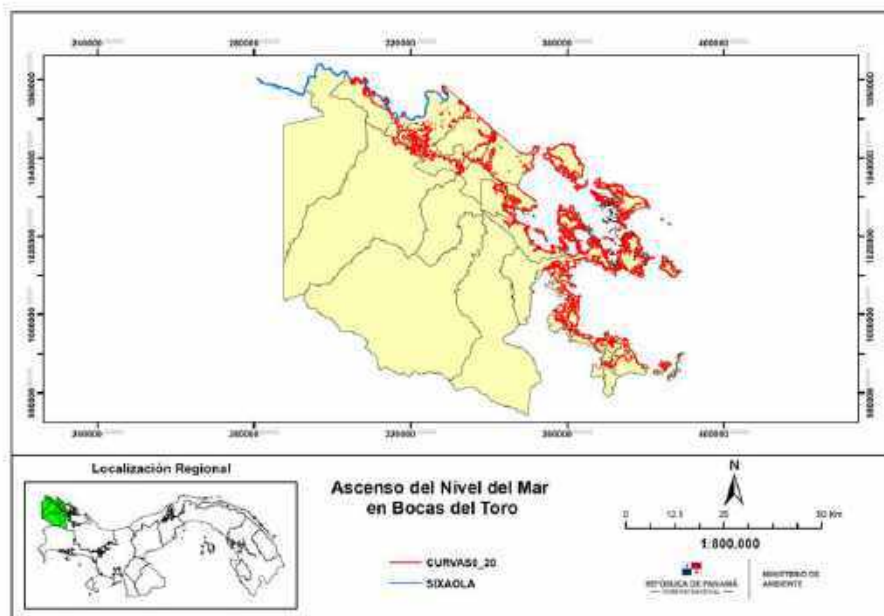


Figure 3. Risk due to sea level rise in Bocas del Toro, Panama

The following table shows the main climate events that caused damages and losses in the project area in the current century:

Table 1. Main climate events in the current century in the project area

Date	Climate event	Risks	Description
January 2-10 and 14-16, 2005	Related to a cold front	Flooding	Limon. Record daily and monthly rainfall (to date); extensive flooding; 12,000 people from 281 communities attended by National Emergency Commission (CNE) in Talamanca, Limon, Siquirres, Pococi and Matina; five dead. €34 billion in losses in infrastructure, housing and agriculture.
January to April 2008	Drought associated to La Niña	Drought	Limon. Rainfall deficit of 65% in the southern Caribbean and 45% in the center and around Limon. Stressed plants due to lack of moisture in the soil. Losses of 4 million boxes of bananas representing €26 million.
November 2008	Low pressure system	Flooding Landslides	Bocas del Toro. Rains caused flooding and damage to roads due to landslides. The estimated investment for the reconstruction of the landslide-affected sections of the Rambala -Gualaca highway was US\$25 million.
February 3-9, 2009	Cold front	Flooding	Limon. Floods affected Matina, Pococi, Guácimo and Talamanca. Homes, power lines, roads, bridges and dams were affected. Losses of \$53 million in bananas. 6,000 ha flooded; 2,440 small producers were affected.
2010-2011	Drought associated with La Niña and with a decrease in trade winds	Drought	Limon. Rainfall decreased between 25% and 50% in June and August in both years. Lack of water in the soil and water stress in banana plants.
June 2015	Storms in the Caribbean due to tropical waves and proximity of the Intertropical Convergence Zone (ICZ)	Flooding	Limon. This event affected the counties of Pococi, Guacimo, Siquirres, Matina, Limón (Valle de la Estrella) and Talamanca. Affected 230 towns, 1,400 houses, 45 roads, 11 bridges, 7 dams, and 5 aqueducts.
November 2016	Hurricane Otto	Flooding	Bocas del Toro and Limon. First hurricane in documented history to have a

Date	Climate event	Risks	Description
		Landslides	direct impact on Costa Rica. It generated intense winds, heavy downpours, flooding and landslides. It caused various types of damage and the loss of human lives in both countries (IMN 2021).
November 2020	Eta and Iota hurricanes	Flooding	Bocas del Toro and Limon. Coastal settlements and hundreds of ha. of cropland flooded, and production was unable to reach the markets; in Bocas del Toro, 19 people died during storm surge, flash floods and intensive rains.
1995-present	Slow-onset climate change: sea level rise	Sea Level Rise	For the past three decades, the Cahuita National Park has been suffering the effects of a gradual sea level rise: <ul style="list-style-type: none"> <li>- 1990: The sea began to invade the camping area in the Puerto Vargas sector, leading to its closure in 2004.</li> <li>- Starting in 1995, the sea gradually invaded another camping area with 50 places, until its complete disappearance in 2015.</li> <li>- By 2015, the park's coastal trails were lost, along with coastal vegetation.</li> <li>- Another detected impact in Cahuita is saltwater intrusion.</li> </ul>

The Panama Gender and Climate Action Plan (2022) reported that changes in water sources due to drought or floods, which affect the supply for basic vital, domestic and productive use, have a direct impact on women as the main responsible for collecting and managing water in their homes. In Costa Rica IMN (20221) published information on deaths for the province of Limón for 1980-2017, which reported 82 deaths associated with these events, where 40 were men, six were women and 37 were not determined.

### Future Climate Scenarios

In 2021, Costa Rica's National Meteorological Institute (IMN) updated the climate change scenarios, considering RCP2.6 and RCP8.5 emissions projections (Representative Concentration Pathways), three horizons (2010-2039, 2040-2069, 2070-2099) and the country's climate regions, including Northern Caribbean and Southern Caribbean (IMN 2021). In the projected emissions RCP8.5, in the short-term scenario (2010-2039) temperature increases between 1.1°C and 1.6°C countrywide, with the largest increases in the Caribbean. In the medium term (2040-2069) the increase is greater, ranging between 2.4°C and 2.8°C. By the end of the century, the temperature increase is the largest of the three periods, with a spatial variation of 3.8°C to 4.8°C.

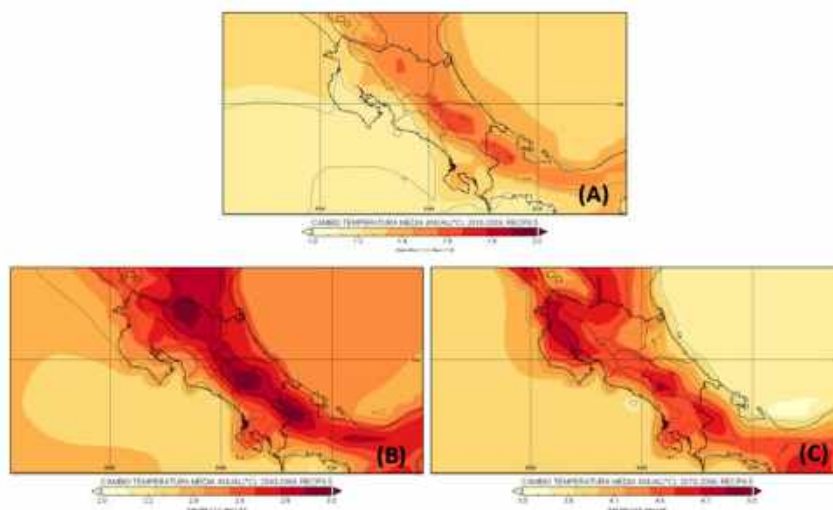


Figure 4. Change in mean annual temperature (°C) in (A) short term (2010-2039), (B) medium term (2040-2069) and (C) long term (2070-2099). Scenario RCP8.5. Source: IMN 2021

On a national scale, Panama's climate change scenarios for 2030, 2050 and 2070 show an increase in maximum temperatures over the entire country. The Western Caribbean region, where Bocas del Toro is located, projects

one of the largest increases, after the Arco Seco and the Western Pacific (Chiriqui). Future scenarios show continuous increase in both maximum daytime and minimum nighttime temperatures. At national level there is already a small increase in the maximum daytime temperature, although the greatest impact will come from an increase in the minimum nighttime temperature, which creates conditions for pests and diseases in agriculture.

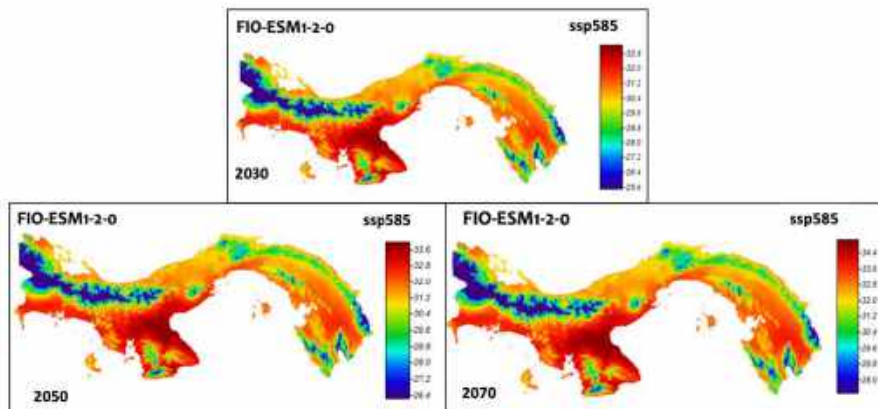


Figure 5. Maximum temperatures ( $^{\circ}\text{C}$ ) for three horizons: 2030, 2050, and 2070. Scenario RCP8.5. FIO-ESM1-2-0.

Source: MiAmbiente-UNDP. 2022b.

According to future estimations by the Intergovernmental Panel on Climate Change (IPCC 2021), it is *virtually certain* that warming will continue in Central America and there is *high confidence* that, by the end of the century, the region will undergo extreme heat stress much more often than in recent past (e.g., increase of dangerous heat with  $\text{HI} > 41^{\circ}\text{C}$ , or  $\text{Tx} > 35^{\circ}\text{C}$ ) with more than 200 additional days per year under SSP5-8.5, while such conditions will be met typically 50–100 more days per year under SSP1-2.6 over the same regions. Cold spells and frost days decreased (*high confidence*).

Regarding rainfall, from the first horizon to the second (2040-2069), there is a slight increase north of the port-city of Limon, towards Tortuguero-Barra del Colorado, and southward, around Cahuita-Sixola. In the 2070-2099 horizon, rainfall decreases in Costa Rica's Dry Corridor (North East), while increasing between the port-city of Limon and Cahuita, and towards the mountain range:

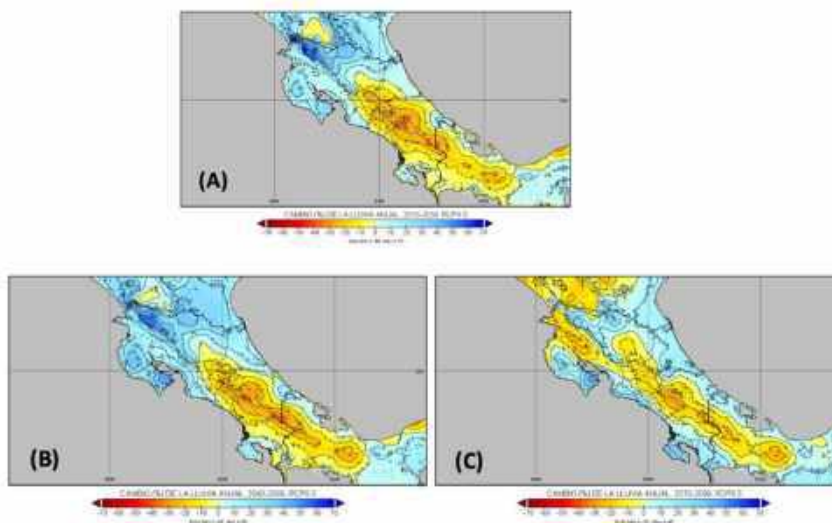


Figure 6. Projection (A) short term (2010-2039), (B) medium term (2040-2069) and (C) long term (2070-2099) of mean annual rainfall change. Source: IMN 2021.



As for precipitation in Panama, Bocas del Toro show a slight reduction in precipitation between 2030-2070 (MiAmbiente-UNDP 2021):

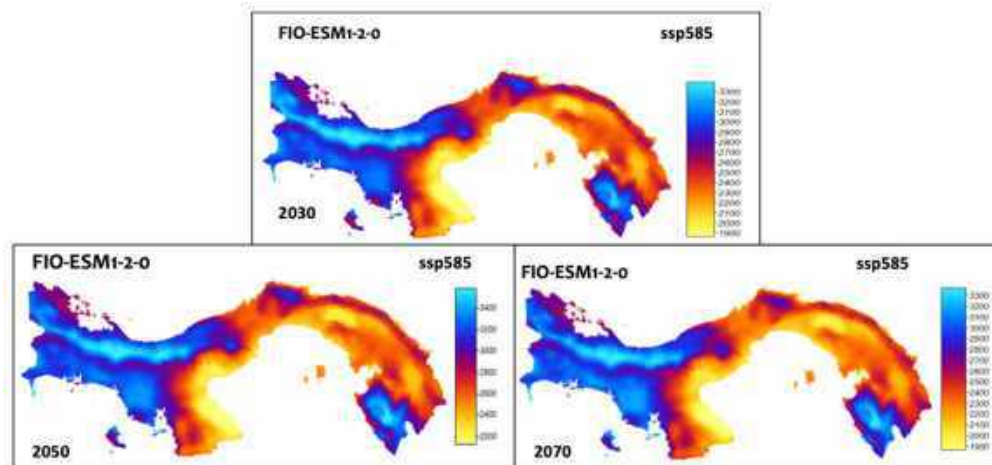


Figure 7. Rainfall (mm) for three horizons: 2030, 2050, and 2070. Scenario RCP8.5. FIO-ESM1-2-0

Source: MiAmbiente-UNDP. 2022b.

According to future estimations by the IPCC (2021), mean precipitation is projected to decrease in Central America (medium confidence).

Costa Rica also has sea level rise scenarios for Moín and Cahuita, in Limón, which analyze sea level rise based on the average high tide level for the Caribbean coast. This was conducted for 2030, 2050, 2070 and 2100. The reference data used is 3 mm per year, according to scenarios by the Economic Commission for Latin America and the Caribbean (ECLAC, 2012, p. 24). Results show flood levels for each year in Moín and Cahuita and indicate that both locations could be flooded by the year 2100 (Lizano-Araya & Lizano-Rodríguez 2022).

### Core Problem and stakeholder analysis

The core problem related to climate change and climate variability that this project proposal aims to intervene in Bocas del Toro and Limón is: **“ecosystems and livelihoods increasingly vulnerable to climate change”**, as evidenced by effects such as: water and soil pollution and deterioration, forest and watershed degradation, deteriorated coastal and marine ecosystems, loss of biodiversity, reduced ecosystem resilience, reduced adaptation capacity, increased climate risk, and impoverished communities. The problem analysis developed for this proposal can be observed in Figure 6.

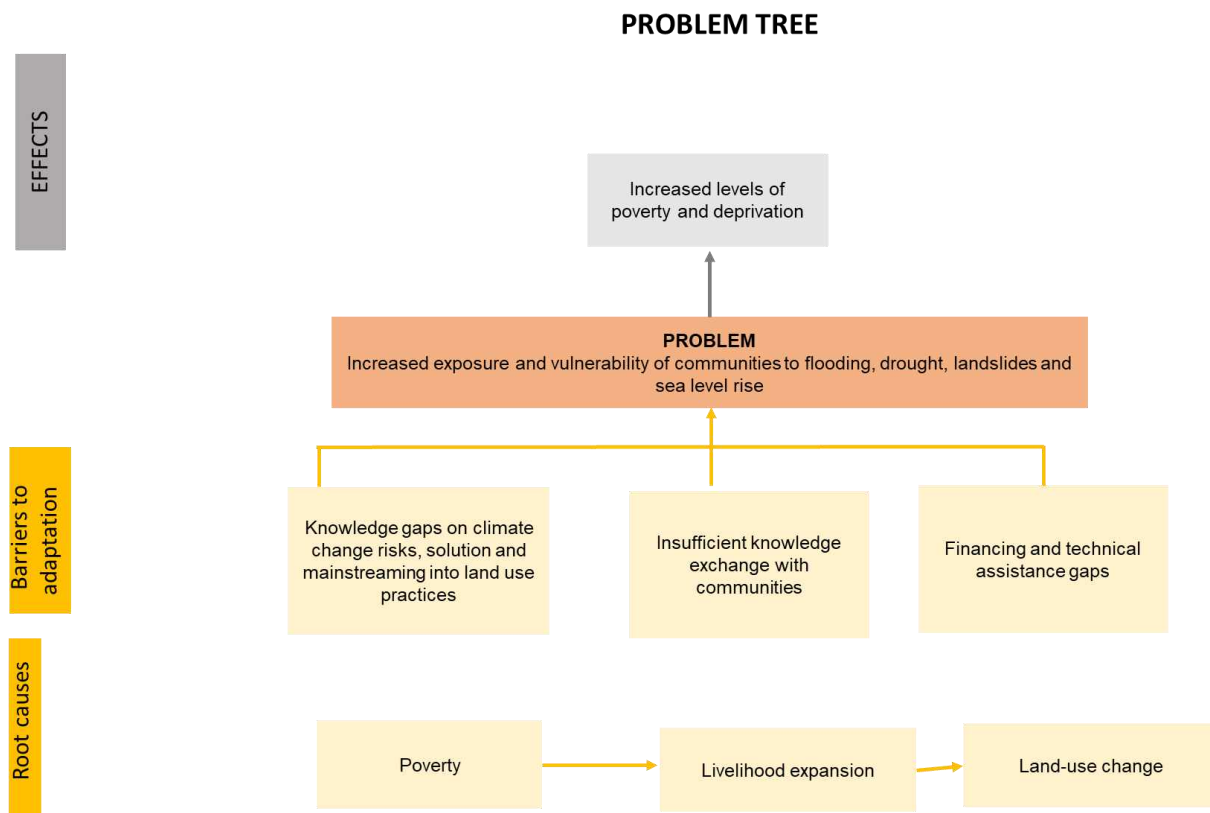


Figure 6. Core problem analysis.

In Costa Rica, Matina shows significant sensitivity related to poverty, with more than 45% of households with one or more deprivations. Talamanca is also a poor canton and its most affected districts are Sixaola and Telire. Vulnerability in Talamanca affects mostly the indigenous population and is characterized by a low level of human development and high level of poverty, by the lack of decent housing with electricity and potable water through aqueducts, by dependent persons, and by gender inequality (Retana et al. 2017). Other districts in Limón with high poverty levels are Pacuarito (Siquirres) and Valle de la Estrella (canton Limon). Bocas del Toro ranked 4th in the Panama Multidimensional Poverty Index 2018, which measures poverty not only based on income, but also education, housing, basic services, internet access, health and employment (PNUD-MIDES 2020). General poverty rates are very high in the Panamanian province's four districts, reaching worrying rates of extreme poverty, especially in the district of Bocas del Toro. Vulnerable populations suffer from violence, crime, unwanted pregnancies, overcrowding, youth unemployment, drug addiction, and others (CECOMPRO 2018). Another indicator of vulnerability is the population with disabilities or limitations. In both the canton of Talamanca and Matina, 10% of their populations has physical limitations, mainly visual or walking impairment. The group of dependents includes the elderly, children and the unemployed. In Matina, this group includes 36% of the total canton's inhabitants. Women suffer from higher levels of unemployment and poverty (DCC-MINAE, MIDEPLAN 2021). According to Fernández-Fernández (2021), based on INEC surveys, Costa Rica follows a regional trend where women and, specifically, female heads of household continue to perform unpaid work in their homes. As a result, female heads of household and their families statistically have greater difficulties in breaking out of the structural circles of poverty and greater difficulty in entering the labor market under formal and dignified conditions. This has repercussions on the lack of economic independence and financial stability of women heads of household, who do not have the time to look for stable work and do not have decent conditions to keep it. In general, vulnerable populations such as indigenous people, Afro-Caribbean people, women, youth, people with disabilities, and the elderly have the least access to training, credit, technical assistance, and entrepreneurial opportunities (DCC-MINAE, MIDEPLAN 2021). People engaged in livelihoods such as agriculture, livestock, fishing and tourism face vulnerability in these activities due to practices that are neither sustainable nor adapted to climate change and climate variation, affecting their productivity and income. The workshops in Limon and Bocas del Toro (UNEP 2022b; UNEP 2022c) gathered information on vulnerable stakeholders to climate change

and climate variability. The most frequently mentioned vulnerable stakeholders include inhabitants along watersheds, coastal and island dwellers, producers, women, youth, and indigenous people. The impacts of climate events on these vulnerable populations mentioned in the workshops include: reduction of producers' income, reduction of family income, reduction of women's income, unemployment among women and youth, higher production and consumption costs, difficult access to food and nutrition, increased insecurity among women, school dropouts and migration of young people.

### Root causes of vulnerability to climate change in Bocas del Toro and Limón

**Land use change:** Agricultural expansion, intensive livestock and urban development are the main causes of land use changes in the region. Deforestation, encroachment of river protection zones, and poor agricultural and livestock practices have resulted in land degradation and a fragmented landscape with natural ecosystems (forests, mangroves, coral reefs) that are reduced and fragmented, exposed to pollution and disconnected from each other, increasing vulnerability to climate change and climate variation. These drivers are exacerbated by poor land use planning (IPBES 2018; WGII- AR6-IPCC 2022).

Biodiversity and ecosystem conditions in the Americas are declining due to population growth, habitat conversion, fragmentation and overexploitation (IPBES 2018). Unsustainable use of natural resources is degrading the provision of ecosystem services, which increase climate vulnerability (WGII- AR6-IPCC 2022). Although there are several categories of protection in the region (national parks, biological reserves, wildlife refuges), there is habitat fragmentation and inadequate ecological connectivity. Some communities are conveniently close to land and coastal-marine protected areas, which serve as buffers during extreme climate events, while others are far from those areas and therefore do not benefit from the protection and other ecosystem services they provide. Additionally, limited information regarding cost-effectiveness of nature-based adaptation solutions is available in the region (WGII- AR6-IPCC 2022).

**Economic drivers of vulnerability.** Few productive linkages between agriculture, livestock, fishing and tourism; communities highly dependent on primary activities and tourism; limited employment opportunities; informality of vulnerable stakeholders involved in livelihood activities; infrastructure and services not adapted to local climatic conditions; material and economic losses suffered by local producers and inhabitants during extreme weather events. All this leads to the risk of loss of competitiveness of local livelihoods in Limón and Bocas del Toro (DCC-MINAE, MIDEPLAN 2021; MiAmbiente, 2021).

**Social drivers of vulnerability.** People living in poverty; low levels of education; limited employment opportunities, usually in traditional activities with little added value; lack of Social Security and medical attention; greater difficulty for women and youths to access training, entrepreneurship and financing opportunities; female-headed households with caregiving responsibilities; indigenous communities with fewer resources to address climate risks (DCC-MINAE, MIDEPLAN 2021; MiAmbiente, 2021).

### Solution identification: Preferred adaptation responses

Based on the root problems and main climate risks identified, the project proposal will focus on the following preferred adaptation responses to respond to the core problem:

Table 2. Preferred adaptation solutions climate risks

Preferred Adaptation Responses	Climate risks
<ul style="list-style-type: none"> <li>Climate knowledge and information systems, Early Warning Systems</li> </ul>	<ul style="list-style-type: none"> <li>Flooding, landslides, drought</li> </ul>
<ul style="list-style-type: none"> <li>Terrestrial, watershed and coastal-marine landscape planning, protected area management plans, fishery management plans, others</li> </ul>	<ul style="list-style-type: none"> <li>Flooding, landslides, drought, sea level rise, coastal erosion</li> </ul>
<ul style="list-style-type: none"> <li>Nature based Solutions for watershed and landscape restoration and enhancement of ecosystem services, cost-effective analyses</li> </ul>	<ul style="list-style-type: none"> <li>Flooding, landslides, drought</li> </ul>
<ul style="list-style-type: none"> <li>Nature based Solutions to facilitate rainwater drainage, reduce excessive runoff and prevent flooding, cost-effective analyses</li> </ul>	<ul style="list-style-type: none"> <li>Flooding</li> </ul>

Preferred Adaptation Responses	Climate risks
<ul style="list-style-type: none"> <li>• Mangrove restoration and coral reef rehabilitation, cost-effective analyses</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding, sea level rise, coastal erosion</li> </ul>
<ul style="list-style-type: none"> <li>• Nature based Solutions for coastal and beach protection and shoreline stabilization, cost-effective analyses</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding, sea level rise, coastal erosion</li> </ul>
<ul style="list-style-type: none"> <li>• Protected areas as a Nature based Solution, cost-effective analyses</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding, landslides, drought, sea level rise, coastal erosion</li> </ul>
<ul style="list-style-type: none"> <li>• Financial strategies for the private and microfinance sector</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding, landslides, drought</li> </ul>
<ul style="list-style-type: none"> <li>• Sustainable agriculture &amp; livestock climate adaptation practices</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding, drought</li> </ul>
<ul style="list-style-type: none"> <li>• Fishery climate adaptation practices</li> </ul>	<ul style="list-style-type: none"> <li>• Sea level rise, coastal erosion</li> </ul>
<ul style="list-style-type: none"> <li>• Climate adaptation practices for local tourism businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding, drought</li> </ul>

### Barriers to implementing preferred adaptation responses

The following barriers were identified in the literature as being important to prevent investments in adaptation:

**Knowledge gaps limit the understanding, planning and decision-making on adaptation:** There is a lack of adequate knowledge and information in public institutions in Panama and Costa Rica about the dynamics of terrestrial, freshwater and coastal-marine ecosystems, about the risks and impacts of climate change on human systems and livelihoods, and about opportunities for adaptation. This also leads to a lack of understanding of ecosystem services, including climate resilience. Key public institutions in Panama include MiAmbiente, MIDA, SINAPROC, ATP, DDT, MEF, ANATI, and IDAAN. In Costa Rica the list includes MINAE, SINAC, DCC, IMN, MAG, INTA, ONS, INDER, CNE, ICT, AyA, and MIVAH. This severe knowledge deficit affects landscape planning and management, decision making, implementation of adaptation measures, disaster prevention and local preparedness for climate hazards. Poor capacities for the integration of predictive climate hazard information into land use plans in terms of identifying risk zones for infrastructure and livelihoods and potential adaptation solutions (DCC-MINAE, MIDEPLAN 2021). The region is characterized by poor community planning, with a lack of practices to facilitate rainwater drainage, reduce excessive runoff and prevent flooding (WGII- AR6-IPCC 2022). This increases the inhabitants' exposure to climate risks. Risk is higher in larger communities: about 52% of the exposed population in the area of interest concentrates in only 10 districts (Limon) and corregimientos (Bocas del Toro)<sup>5</sup> in the lowlands and along the coast. They are, in descending order: Limon, Changuinola, Cariari, Guápiles, Siquirres, La Rita, El Empalme, Guácimo, Batán and La Estrella. There is a lack of technical support, little dissemination of lesson learned from other initiatives and insufficient local understanding about nature-based adaptation solutions and ecosystem services that could serve as preventive measures for the protection of biodiversity, communities and infrastructure from potential impacts by climate change (DCC-MINAE, MIDEPLAN 2021).

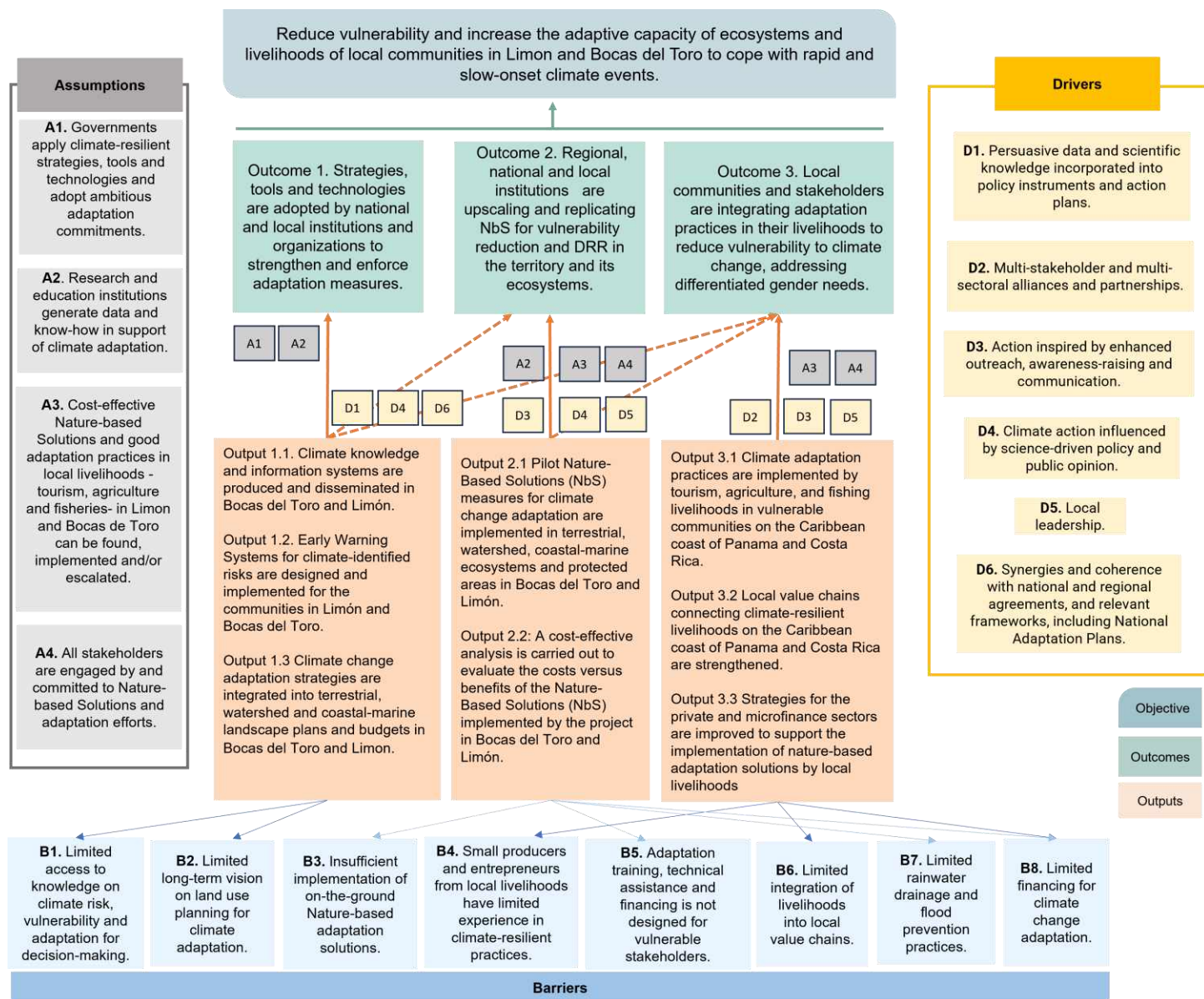
**Insufficient access to information services and technologies for knowledge exchange with communities** (e. g. digital information platforms, Early Warning Systems, others) reduces the capacities of decision makers as well as of local stakeholders, including local communities, women, indigenous inhabitants, farmers, fishers, tourism entrepreneurs and others (WGII- AR6-IPCC 2022). There is also a lack of climate information systems, products and services to support dissemination and exchange of information, experiences and lessons learned between the two countries (Camargo et al., 2016; DCC-MINAE, MIDEPLAN 2021; MiAmbiente, 2021). The main local livelihoods, agriculture, fisheries and tourism are unaware of good adaptation and sustainability practices that would allow them to reduce risks, lessen damages and losses, and increase their productivity in a context of climate variability and climate change. Workshop participants noted that limited access to cell phones and signal in many rural areas and on islands is a barrier to accessing climate information (UNEP 2022b; UNEP 2022c).

<sup>5</sup> The third level of territorial organization is called “districts” in Costa Rica and “corregimientos” in Panama.



**Training, technical assistance and financing not designed for vulnerable stakeholders :** A widely reported obstacle to adaptation in Latin America is financing. Most countries identify inadequate financing and access to technology as barriers to adaptation. New forms of financing focused on community-based and local livelihoods are required to overcome the funding challenge and enable adaptation in the region (WGII- AR6-IPCC 2022). There is poor integration of livelihoods into local value chains. There is a low participation of women and youths in decision-making spaces, and limited opportunities to access training and technical assistance for vulnerable populations. Products, services and opportunities for education, training, financing and employment are usually crafted for adult men, and often exclude vulnerable inhabitants such as women, youth, indigenous populations, people with disabilities, the elderly, and others. Workshop participants noted that these disparities lead to differences in how climate change impacts vulnerable populations, for example, in reduced access to housing, food and nutrition, clean water, jobs, and others (UNEP 2022b; UNEP 2022c).

Considering the above-mentioned problem analysis, barriers to implementation, and external drivers and assumptions, a Theory of Change<sup>6</sup> (ToC) was developed for this proposal, as observed in Figure 7.



<sup>6</sup> For more detail on the project's Theory of Change (ToC), please see the following link: [https://drive.google.com/drive/folders/1mUjOem5JEuFutoQaXavXft\\_07fYyluw?usp=drive\\_link](https://drive.google.com/drive/folders/1mUjOem5JEuFutoQaXavXft_07fYyluw?usp=drive_link)

Figure 7. Graphic Theory of Change (ToC).

## PROJECT OBJECTIVES

The objective of the project is to reduce vulnerability and increase adaptive capacity of ecosystems and livelihoods of local communities in Limon and Bocas del Toro to cope with rapid and slow-onset climate events, the main climate hazards being heavy rainfall episodes, strong winds and sea level rise. This will be achieved through the following specific objectives:

- 1) To strengthen decision-making and adaptation measures in a changing climate context through increased access to and use of knowledge and information by key stakeholders.
- 2) To implement pilot cost-effective Nature-based Solutions for DRR and climate change adaptation in terrestrial, watershed, coastal-marine ecosystems and protected areas in Bocas del Toro and Limón.
- 3) To enhance the coping capacity of local livelihoods and value chains (including tourism, agriculture and fishing) and their access to financial strategies to support adaptation processes.

## PROJECT COMPONENTS AND FINANCING

The project intends to have a transformative impact by incorporating gender and social inclusion considerations that permeate the project design, implementation and monitoring. The main project components and financing are described in the following table:

Table 3. Project components, outcomes, and outputs

Project Components	Expected Outcomes	Expected Outputs	Countries	Amount (US\$)
1. Information and knowledge for decision making on DRR and climate change adaptation	1. Strategies, tools and technologies are adopted by national and local institutions and organizations to strengthen and enforce adaptation measures.	Output 1.1. Climate knowledge and information systems are produced and disseminated in Bocas del Toro and Limón.  Output 1.2. Early Warning Systems for climate-identified risks are designed and implemented for the communities in Limón and Bocas del Toro.  Output 1.3 Climate change adaptation strategies are integrated into terrestrial, watershed and coastal-marine landscape plans and budgets in Bocas del Toro and Limon.	Costa Rica Panama	2.0M
2. Nature-based Solutions for DRR and climate change adaptation	2. Regional, national and local institutions are upscaling and replicating NbS for vulnerability reduction and DRR in the territory and its ecosystems.	Output 2.1 Pilot Nature-Based Solutions (NbS) measures for climate change adaptation are implemented in terrestrial, watershed, coastal-marine ecosystems and protected areas in Bocas del Toro and Limón.  Output 2.2: A cost-effective analysis is carried out to evaluate the costs versus benefits of the Nature-Based Solutions (NbS) implemented by the project in Bocas del Toro and Limón.	Costa Rica Panama	4.0M

Project Components	Expected Outcomes	Expected Outputs	Countries	Amount (US\$)
3. Strengthening livelihoods and value chains for climate change resilience	3. Local communities and stakeholders are integrating adaptation practices in their livelihoods to reduce vulnerability to climate change, addressing differentiated gender needs.	<p>Output 3.1 Climate adaptation practices are implemented by tourism, agriculture, and fishing livelihoods in vulnerable communities on the Caribbean coast of Panama and Costa Rica.</p> <p>Output 3.2 Local value chains connecting climate-resilient livelihoods on the Caribbean coast of Panama and Costa Rica are strengthened.</p> <p>Output 3.3 Strategies for the private and microfinance sectors are improved to support the implementation of nature-based adaptation solutions by local livelihoods.</p>	Costa Rica Panama	4.0M
Project/Programme Execution cost				1M
6. Total Project/Programme Cost				11M
7. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)				1.1M
<b>Amount of Financing Requested<sup>7</sup></b>				<b>12.1M</b>

## PROPOSED INDICATORS

Table 4. Proposed indicators

Project Outcomes	Outcome Indicators
1. Strategies, tools and technologies are adopted by national and local institutions and organizations to strengthen and enforce adaptation measures.	<ul style="list-style-type: none"> <li>- No. of government institutions integrating climate information and knowledge into long-term planning and decision-making for Limon and Bocas del Toro</li> <li>- No. of thematic reforms supporting adaptation and DRR priorities in Limon and Bocas del Toro</li> </ul>
2. Regional, national and local institutions are upscaling and replicating NbS for vulnerability reduction and DRR in the territory and its ecosystems.	<ul style="list-style-type: none"> <li>- No. of people or households benefitting from adaptation measures.</li> <li>- No. of actors (disaggregated by sex) and institutions adopting the proven NbS pilot approaches in new (non-pilot) areas or scaling them up</li> <li>- No. of new sites applying NbS not (fully) funded by the project</li> </ul>
3. Local communities and stakeholders are integrating adaptation practices in their livelihoods to reduce vulnerability to climate change, addressing differentiated gender needs.	<ul style="list-style-type: none"> <li>- No. of people adopting adapted livelihoods.</li> <li>- Amount of new public or private investment allocated to support adaptation practices in Limon and Bocas del Toro</li> <li>- Evidence of the demonstrated application of new capacities by targeted actors (disaggregated by sex and age group) or organizations (e.g., improved products or services incorporating adaptation practices, or increased linkages or alliances in the livelihood value chain).</li> </ul>

## PROJECTED CALENDAR

<sup>7</sup> Revised following the Board Decision B.38/42 of setting up the upper limit for administrative costs of regional projects/programmes at 10 per cent of the project/programme cost for implementing entity (IE) fees and at 10 per cent of the project/programme cost for execution costs.

Table 5. Project Calendar

Milestones	Expected Dates
Start of Project Implementation	January 2025
Mid-term Review	December 2026
Project Closing	December 2028
Terminal Evaluation	December 2028



## PART II: PROJECT JUSTIFICATION

### A. PROJECT COMPONENTS

Costa Rica and Panama's national climate adaptation policy instruments, including disaster and risk reduction, DRR (DCC-MINAE, 2018; MiAmbiente, 2020), emphasize the integration of climate adaptation within sustainable development frameworks, and its mainstreaming in all sectors of the economy. The project proposal is aligned with the national adaptation priorities, contextualized to the current and potential climate change impacts, needs, and uncertainties, and framed within a perspective of sustainable development. Adaptation priorities include regional and local planning, watershed management, marine and coastal ecosystems, livelihoods (tourism, agriculture, livestock, fisheries), communities, infrastructure, climate information, capacity building, financial security, and measurement-monitoring-verification of risk-reduction.

It is expected that Nature-based Solutions (NbS) and climate practices applied to livelihoods will contribute to post-COVID-19 recovery, mainly by increasing resilience to extreme weather events and reducing damages and losses, as well as strengthening tourism, agriculture and fisheries value chains, with the potential increase in household incomes and employment generation, mainly for women and youth.

**Component 1 “Information and knowledge for decision-making on DRR and climate adaptation”.** Regional, national and local institutions and organizations expand their capacities through knowledge and information services and technologies (e. g. digital information platforms, Early Warning Systems, others). This will provide them with a better understanding of the territory as an integral system and will contribute to the inclusion of climate change considerations into long-term planning, landscape management, disaster prevention and local preparedness for climate hazards, thus improving decision making and climate change adaptation. Actors will also be more active in impacting national policy and thematic reforms supporting adaptation and DRR priorities in Limón and Bocas del Toro. The project also seeks to disseminate its findings and lessons learned through information products, training materials and others that systematize and share project results with stakeholders and the general public. This component will tackle barriers B1 and B2 as observed in Figure 7.

**Output 1.1. Climate knowledge and information systems are produced and disseminated in Bocas del Toro and Limón.** Activities include: a) Conduct climate risk and vulnerability assessments as a basis for prioritizing NbS and livelihood adaptation measures (aligned with Outputs 2.1 and 3.1); b) Strengthen existing climate information systems with strategic allies in Panama and Costa Rica; c) Produce diverse communication, educational and training materials, tools and guidelines to share with specific audiences such as women, youths, children, Indigenous communities, Afro Caribbean people, and others. These materials will be gender-sensitive by using male and female material developers & reviewers; gender-sensitive language and gender-balanced images; convincing gender arguments based on reliable sources and qualitative/quantitative data including sex-disaggregated data d) Compile and share project results with stakeholders: training materials, guides, methodologies, reports, media publications, cost-effectiveness analysis, lessons learned, and others; e) Support the operation of meteorological stations in the region as a means of generating key information.

**Output 1.2. Early Warning Systems (EWS) for climate-identified risks are designed and implemented for the communities in Limón and Bocas del Toro.** Activities: a) Establish strategic alliances between actors in Panama and Costa Rica with: access to climate information, dissemination platforms and capacity to respond to extreme events; b) Design and implement EWS in each country, considering the most accessible channels for local communities; c) Monitor implementation results and adjust for better performance.

**Output 1.3 Climate change adaptation strategies are integrated into terrestrial, watershed and coastal-marine landscape plans and budget in Bocas del Toro and Limón.** Activities include: a) Carry out capacity building activities for decision-makers and staff of national, sub-national and local institutions and organizations to minimize exposure to climate variability risks; b) Implement annual inter-provincial events

with authorities from both countries for cooperation and exchange of information.

**Component 2 “Nature-based Solutions for DRR and climate change adaptation”** aims to reduce loss and damage from climate impacts through Nature-Based Solutions (NbS), which will bring benefits such as the enhancement of ecological resilience of terrestrial, watershed and coastal-marine ecosystems, restoration of protective and regulating services, reduction of vulnerability of communities, and increased resilience of local livelihoods. As a result, institutions and actors will perceive that investing in nature-based solutions is cost-effective. This will increase the capacity of institutions and organizations to use NbS, in contrast to conventional gray interventions, thereby creating opportunities for more effective and sustainable interventions. This, in turn, will contribute to the institutionalization of climate action, contributing to institutional awareness and capacity development in Outcome 1. It is expected that more actors and institutions will adopt the proven NbS pilot approaches in new (non-pilot) areas or scaling them up, as well as to more new sites applying NbS not (fully) funded by the project. In order to define the sites for the location of the NbS, both Costa Rica’s Ministry of Environment and Energy (MINAE) and Panama’s Ministry of the Environment (MiAmbiente) are using technical information, such as protected areas’ management plans and climate adaptation plans and maps of priority ecosystems for climate adaptation planning (MINAE 2021). For the NbS implementation, the project will engage stakeholders across selected coastal areas, communities and watersheds. This component will tackle barriers B3, B5, B7 and B8 as observed in Figure 7.

**Output 2.1 Pilot Nature-Based Solutions (NbS) measures for climate change adaptation are implemented in terrestrial, watershed, coastal-marine ecosystems and protected areas in Bocas del Toro and Limón.** Activities include: a) Develop climate risk analysis at the local level to help determine NbS to be implemented; b) Design a toolkit based on technical and local knowledge to support the implementation of prioritized NbS; c) Implement pilot NbS measures for climate change adaptation in terrestrial landscapes and watersheds; d) Implement pilot NbS measures for climate change adaptation in coastal-marine ecosystems; e) Implement pilot NbS measures for climate change adaptation in protected areas responding, among others, to their adaptation plans. National, sub-national and local institutions and organizations are expected to participate in these efforts, as well as vulnerable stakeholders.

**Output 2.2 A cost-effective analysis is carried out to evaluate the costs versus benefits of the Nature-Based Solutions (NbS) implemented by the project in Bocas del Toro and Limón.** Activities include: a) Conduct a cost-effectiveness analysis of the NbS implemented by the project, as input for a landscape management approach for climate resilience; b) Develop a binational dialogue on cost-effectiveness of NbS to share results with landscape, watershed and coastal-marine ecosystem managers, planners and users.

**Component 3 “Strengthening livelihoods and value chains for DRR and climate change resilience”** aims to integrate adaptation practices in the livelihoods of local communities and stakeholders to reduce vulnerability to climate change. The livelihoods prioritized for project stakeholders are tourism, agriculture and fisheries, as well as their respective commercial interactions and value chains at the local or regional levels. In a context of changing climate and post-Covid recovery, there are few formal sustainable economic alternatives for developing regions such as Limon and Bocas del Toro, rich in natural capital, aware of the value of their biodiversity and ecosystems, but facing unemployment, inequality and female and youth poverty (Retana et al., 2017; CEPAL, 2020). The binational consultation process with stakeholders (UNEP October-November 2022) requested information on good livelihood practices: 40% of respondents mentioned sustainable agriculture practices, 35% sustainable tourism practices and 14% good fishing practices (non-cumulative numbers). Focusing on nature-based, climate-resilient local livelihoods is an innovative approach, as it safeguards ecosystems, increases community resilience, and strengthens productive systems and local economies. This component will tackle barriers B4, B6 and B8 as observed in Figure 7.

**Output 3.1 Climate adaptation practices are implemented by tourism, agriculture, and fishing livelihoods in vulnerable communities on the Caribbean coast of Panama and Costa Rica.** To facilitate the integration of adaptation practices into local livelihoods, proposed solutions will be designed to be context and climate-specific, while considering Indigenous Knowledge and Local Knowledge where relevant. Output activities include: a) Develop climate risk analysis at the local level to help determine climate practices to be implemented; b) Implement pilot demonstration projects for climate-smart agriculture,

livestock, fisheries and tourism practices; c) Develop field schools for the exchange of knowledge and experiences in climate adaptation among farmers/fishers; d) Create and disseminate a manual integrating Indigenous Knowledge and Local Knowledge (IKLK) into NbS and climate-smart livelihood practices; e) Develop a nature and culture interpretation program for Indigenous and Afro-Caribbean communities in the face the challenges and opportunities of climate change for local tourism businesses.

**Output 3.2 Local value chains connecting climate-resilient livelihoods on the Caribbean coast of Panama and Costa Rica are strengthened.** Local value chains and the connectivity between local livelihoods will be strengthened to facilitate the integration of adaptation practices in the communities. Output activities include: a) Train local tourism businesses to integrate climate change adaptation and DRR into their management, operations and purchases; a gender balance and representation of youths will be ensured in these trainings; b) Conduct a participatory supply and demand study, identifying the area's agricultural and fishing products/ingredients and their current and potential demand from local tourism businesses; c) Promote exchanges of goods and services among producers, fishers and tourism businesses (hotels, tour operators, restaurants) along climate-resilient value chains; d) Develop a label for climate-resilient champions to allow consumers identify businesses integrated into climate-resilient value chains; e) Organize culinary contests with climate-adapted menus and awareness campaigns for customers and tourists.

**Output 3.3 Strategies for the private and microfinance sectors are improved to support the implementation of nature-based adaptation solutions by local livelihoods.** Adaptation practices are integrated into local livelihoods with the support of microfinance institutions that provide services to stakeholders working in local livelihoods. Output activities include: a) Develop educational materials on micro-finance services for adaptation measures in tourism, agriculture, and fisheries in Bocas del Toro and Limón; b) Provide training to microfinance institutions supporting local livelihood adaptation in Bocas del Toro and Limón; c) Implement training activities for private sector actors supporting nature-based adaptation solutions through local livelihoods; d) Carry out training sessions for local community organizations representing vulnerable stakeholders (Indigenous, Afro-descendants, women, youths, others) on micro-finances for climate adaptation solutions, options, costs, and benefits.

The project aims to maximize opportunities for cross-country learning and South-South cooperation between Panama and Costa Rica. Both Limon and Bocas del Toro are geographically and culturally diverse, facing similar socio-economic, environmental and climatic challenges and resilience opportunities. Both display a similar ridge-to-reef mosaic of ecosystems, promoted and recognized as key assets for sustainable tourism<sup>8</sup> and agriculture. These two provinces share a vision on adaptation underpinned on a sustainable economic development based in a rich natural capital and focused on improving local livelihoods. A binational regional effort will ensure a common approach to landscape and ecosystem management for disaster risk reduction and climate change adaptation. It will also help identify and address the challenges of specific local contexts.

## **B. NEW, INNOVATIVE SOLUTIONS**

Although many of the NbS proposed in this Adaptation Fund (AF) project have already been implemented in Panama, Costa Rica, and other countries, the innovation here is the combination of different categories of measures in a single package, aimed at increasing livelihood resilience and risk reduction in coastal and rural communities in both countries. This project will consider different success stories in Latin America and the Caribbean, as well as associated cost-effectiveness information.

The following proposed climate adaptation activities are aligned with Component 1 and include:

- Climate knowledge and information systems / Early Warning Systems supporting adaptation in Bocas del Toro and Limón: Countries will develop their EWS in response to their particular characteristics and needs in climate service provision. Based on this, local authorities and stakeholders in each province will participate in the exchange of lessons learned and experiences, so as to stimulate a

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<sup>8</sup> Shared tourism assets include the Sixaola binational watershed, La Amistad International Park, and the Caribbean Large Marine Ecosystem (CLME) region, relevant for wildlife observation, agro-tourism, indigenous communities, scientific tourism, adventure, and sun and beach, by national and international tourists.

South-South learning process between Panama and Costa Rica, as well as to promote joint action and cooperation in their shared Caribbean region.

- Climate adaptation planning: Terrestrial, watershed and coastal-marine landscape planning, protected area management plans, fishery management plans, others, in response to the local needs of each province and according to the legislation and institutional framework of each country.

The following preliminary proposed NbS are aligned with Component 2 and include:

- Nature based Solutions for watershed and landscape restoration: forest recovery reduces the impact of droughts and extreme rainfall, offers a shield against floods and erosion and enhances ecosystem services. The protection of springs and rivers mitigate the impact of drought and water scarcity.
- Nature based Solutions to facilitate rainwater drainage, reduce excessive runoff and prevent flooding: Innovative NbS can be adopted to reduce flood risk. NbS are increasingly recognized as a pragmatic and cost-effective approach to flood risk management, which often has the added benefit of enriching ecosystems, improving aesthetics and enhancing recreational value. It is possible to use natural processes in drainage design for tourism destinations, towns and communities to complement and often replace engineering works. Examples are bioswales, rain gardens, infiltration trenches, retention and detention ponds, and permeable pavement, supported by local flood management plans. The use of NbS to reduce flooding through natural flood management can be low cost, and resilient to climate change while offering a range of other benefits for people as well as wildlife.
- Mangrove restoration and coral reef rehabilitation: These NbS are more successful and feasible than hard coastal defenses for the protection, management and restoration of coastal ecosystems and their resources (WGII- AR6-IPCC 2022). They contribute to the protection of coastal communities, fisheries and marine ecosystems from the impacts of climate change, including disaster risks and the deterioration of coastal & marine dependent livelihoods, such as fishing and tourism. Other solutions include sea turtle nurseries and navigation practices respectful of dolphin and manatee populations.
- Nature based Solutions for coastal and beach protection and shoreline stabilization: Proposed measures against SLR include coastal vegetation and brushwood walls and barriers along shorelines. These can be combined with others such as those proposed by Costa Rica's Ecological Blue Flag Program, which includes partnerships of local stakeholders, environmental education, and solid waste and water management. These principles can also be implemented on Boca del Toro's beaches.
- Protected areas and biological corridors as a NbS: Public and private wild protected areas and biological corridors are a nature-based climate adaptation measure that also contributes to conserving biodiversity at the levels of ecosystems, species and genetic diversity.

The following proposed adaptation practices for local livelihoods are aligned with Component 3 and include:

- Financial strategies for the private and microfinance sector: The availability of financial resources will be key to support the implementation of NbS in the region.
- Market strategy: A participatory supply and demand study will help identify the area's agricultural and fishing products/ingredients and their current and potential demand from local tourism businesses; another result is a map of current and potential suppliers of these products. With this information, the project will promote exchanges of goods and services among producers, fishers and tourism businesses (hotels, tour operators, restaurants), as well as final consumers, along climate-resilient value chains.
- Sustainable agriculture & livestock climate adaptation practices: Climate-smart agricultural approaches comprise regenerative agriculture, conservation agriculture, organic production and agro-ecology. Agricultural practices include soil restoration, preventive measures against soil erosion, agroforestry, bio-inputs, integrated pest management, seed management, water harvesting, water retention and infiltration, and others. Livestock practices involve rational grazing, improved varieties of pastures and cattle, nutritional supplements, silvo-pastoral systems and live fences (DCC-MINAE,

MIDEPLAN. 2021; MINAE-MIDEPLAN-PNUMA 2020; Retana et al. 2017; WGII- AR6-IPCC. 2022).

- Fishery climate adaptation practices: Ecosystem-based Fisheries Management (EBFM) is a suitable combination of tools to minimize climate change impacts such as coastal erosion and flooding during extreme events (WGII- AR6-IPCC. 2022). Healthy mangroves and coral reefs increase the resilience of fisheries, local communities, and tourism destinations. At the same time, improved artisanal fisheries contribute to the conservation and sustainable use of coastal-marine ecosystems, while increasing resilience. Practices: mangrove and reef conservation and restoration, adaptation-based management plans in marine protected areas and ecosystems, selective fishing gear, fish selection based on viable sizes and life stages, improvements in accounting and business management, value chain strengthening, and others.
- Climate adaptation practices for local tourism businesses: Local tourism businesses are affected by impacts associated with flooding, landslides, coastal erosion/swelling, and sea level rise, which deteriorate the attractiveness of destinations, hinder businesses' operations, and increase costs. Solutions can be adopted by lodging and food establishments, stores, surf schools and tour operators. These include support for the conservation of watersheds, forests and coastal-marine ecosystems, the design and construction of new facilities with climate adaptation criteria, plans for risk management and business continuity during extreme weather events, the rational use and availability of water and energy; sustainable, adapted suppliers in the value chain, and others.

### **C. ECONOMIC, SOCIAL AND ENVIRONMENTAL BENEFITS**

ECONOMIC BENEFITS: During the project formulation phase, wider community surveys will be carried out to establish the detailed ecosystem-based adaptation strategy in each community, specific characteristics, vulnerabilities and climate impacts for men, women and youths, the risk management plan, the baselines for the key project indicators and project targets. These surveys will enable to determine with greater specificity the economic, social and environmental benefits that the project is expected to generate, as well as how specifically both women and men will benefit, together with a risk management plan.

The long-term survival of livelihoods and businesses in Limon and Bocas del Toro, including tourism, agriculture, and fisheries, is directly dependent on biodiversity and well-functioning ecosystems and their services. The local tourism sector has a great opportunity to implement climate adaptation actions and climate risk management. Knowledge of climate events and impacts affecting tourism operations will allow small local companies to make decisions geared towards their business continuity. The inclusion of works in protected areas, green corridors and riparian forests in local tourism destinations will support ecosystem services, climate resilience and the enhancement of natural attractions such as wildlife and landscapes (ICT 2018; ICT 2022). Additionally, local tourism destinations, towns and communities will improve drainage and reduce flooding through NbS such as flood management plans, bioswales and rain gardens, retention and detention ponds, and permeable pavement. All these will prevent loss of tourism facilities and services as well as interruption of services (DCC-MINAE, MIDEPLAN 2021).

Agriculture is shifting to accommodate increasing climate variation and to adapt to changes in crop growing conditions, water availability, soil regeneration, and others (WGII- AR6-IPCC 2022). The proposed agricultural practices for the project's region will generate relevant economic benefits while contributing to strengthen climate resilience by: conserving soil and water, reducing pollution, conserving forest cover and protecting wildlife; reducing climate-related pests and diseases; reducing damages and losses from floods, landslides, droughts, and SLR; protecting livelihoods and means of production of local inhabitants; increasing productivity; maintaining agriculture's competitiveness; and improving food security, among others (DCC-MINAE, MIDEPLAN 2021; MINAE-MIDEPLAN-UNEP 2020; Retana et al. 2017; WGII- AR6-IPCC 2022).

Artisanal fishing is a relevant livelihood for some local inhabitants in Limon and Bocas del Toro. An ecosystem-based fisheries management will include climate knowledge and the interactions among species within the coastal-marine ecosystems in order to reduce pressures on natural resources and improve fishers' income, contributing to maintaining long-term socioeconomic benefits (WGII- AR6-IPCC 2022).

In general, economic benefits through these local livelihoods include increased productivity (for example through protection of natural attractions in tourism, water and soil conservation in agriculture, irrigation management, increased weight gains of less stressed animals in livestock, sustainable fishing volumes), greater integration of livelihoods into the local value chains, diversification, more employment opportunities, more formality of local businesses, reduced damages and losses, increased profitability and income, and business continuity during extreme climate events (DCC-MINAE, MIDEPLAN 2021). The generation and retention of employment by women, especially female heads of household include tackling their obstacles and difficulties in caring for their children and other family members while they work. This crucial aspect will be addressed by the project in order for those women to be able to enjoy of employment opportunities and financial stability.

There are also economic benefits derived from the cost-effectiveness of NbS and good livelihood practices, by reducing implementation costs, as well as damages and losses from extreme climate events (refer to Section D for more information).

**SOCIAL BENEFITS:** The social benefits derived from this project include increased resilience of vulnerable populations and stakeholders such as people living in poverty, female-headed households with caregiving responsibilities, Afro-Caribbean inhabitants, Indigenous communities with limited resources to address climate risks, small tourism entrepreneurs, farmers and fishers. Increased formality of vulnerable stakeholders involved in livelihood activities will enable them to comply with the legislation and to access more services from public institutions, as well as Social Security and medical attention. More access to training, entrepreneurship and financial opportunities as well as employment is expected for women, especially heads of families, as well as for youths. Targeting women and youth will also contribute to reducing poverty; for them, opportunities to increase their participation in the project will be identified and implemented (DCC-MINAE, MIDEPLAN 2021; MiAmbiente, 2021). The project is expected to contribute to increasing the resilience of families in general and women in particular. Women who are more aware of climate change and its impacts, with greater capacities thanks to training opportunities, with more access to jobs and income in local livelihoods, will be more resilient to the impacts of drought or floods on water resources, as they are often the main responsible for water collection and management in their households.

The participation in planning and implementation of NbS and good climate livelihood practices of stakeholders from all social groups in Limon and Bocas del Toro -including the most exposed and vulnerable populations- will generate positive synergies and better results. Several factors will be considered by the project for a more efficient determination of vulnerability, including sex, age, socioeconomic status, race and ethnicity (WGII-AR6-IPCC 2022). Top-down approaches without citizen or community participation have shown to be little effective. In contrast, this project will engage local social movements and their organizations, which is expected to produce good results in adaptation to climate change at the local level (WGII-AR6-IPCC 2022). The participation of women and youths in all the project phases and activities is crucial and will be encouraged through the executing entities. Women and youths will play a key role in the design of adaptation measures, including NbS, in compliance with the ESG Policies. This will be accomplished through their active participation, in consultation processes, surveys, workshops, and others, where they will be able not just to propose activities, but also to validate them. Enabling conditions to ensure active participation of women and youths will be considered during ideation, design and implementation of engagement processes. Additionally, the integration of IKLK in NbS will help improve decision-making, reduce maladaptation and foster transformational adaptation in the region (WGII-AR6-IPCC 2022).

**ENVIRONMENTAL BENEFITS:** Investing in Nature-based Solutions aimed at protection, restoration and the sustainable use of biodiversity and ecosystems in Bocas del Toro and Limon represents a good approach to maintaining critical ecosystem services that support adaptation, mitigation, and disaster risk reduction in the project area. This strategy will also satisfy international biodiversity, forest and water conservation agendas such as the Aichi Targets (Convention on Biological Diversity), Sustainable Development Goals (UN), Panama and Costa Rica's Nationally Determined Contributions (NDCs) under the Paris Agreement, and others, since these instruments strongly rely on Nature-based Solutions to achieve their objectives (WGII-AR6-IPCC 2022). Additionally, the rehabilitation of mangroves and coral reefs along the Caribbean coast of both provinces will enable the rehabilitation of the ecosystem services they provide, including reduction of the

effects of tropical storms, coastal flooding and coastal erosion. The project will also contribute to the implementation of some actions of the management plans and climate change adaptation plans of protected areas, allowing local populations and visitors to enjoy their natural attractions and ecosystem services.

The proposed AF project proposal is designed to prevent or avoid any environmental or social harms, in line with the Environmental and Social Policy and the AF's Gender Policy. The project's design and implementation include a gender-responsive/transformational approach to guarantee effective equality between women and men and ensure that the proposed adaptation measures benefit women. To this end, the project has taken advantage of various policy instruments in Panama and Costa Rica, which will nurture it based on their specific strengths and contributions.

Potential negative environmental impacts include degradation of critical natural habitats, reduction or loss of biodiversity, soil degradation, and deterioration of ecosystem services. In terms of ecosystem impacts caused by proposed activities, the project will prioritize avoidance before other approaches (impact minimization, restoration, or offset). The recommended NbS and good practices will focus on strengthening the conservation and sustainable use of biodiversity, including watersheds, land and coastal-marine ecosystems. The project will seek to maximize the use of ecosystem services that are in good condition, as well as to restore those that are deteriorated. Good agricultural practices will enhance soil conservation and biological diversity. Fishing will pay special attention to the conservation of strategic ecosystems for the reproduction of species of commercial interest. Tourism will make responsible use of biological attractions, promoting their enjoyment and conservation and avoiding any potential impacts. Also, the project will avoid the use of any potentially invasive species in the implementation of NbS.

Potential detrimental social results of the project implementation involve the exclusion of vulnerable and marginalized populations and unequal opportunities for women and men, as well as violation of human and labor rights. The project aims to benefit vulnerable populations including indigenous communities, Afro-Caribbean people, small tourism entrepreneurs, farmers and fishers, women, especially heads of families, and youth. The project aims to provide fair and equitable access for women, men and youth to NbS and their benefits, including training, access to information, and exchange of experiences. Opportunities to increase participation of these vulnerable populations in the project will be identified and implemented with the support of Executing Entities (EE). No activities are proposed that could present a risk of non-compliance with national requirements related to Human Rights, with International Human Rights Laws and Conventions, or with core labor standards by International Labour Organization (ILO) and by each country's legislation. Rather, the project will support and promote respect for human and labor rights as an integral part of its implementation.

#### **D. COST-EFFECTIVENESS OF THE PROPOSED PROJECT**

Since the Paris Agreement, countries are committing to NDCs that introduce the need to design and implement mitigation and adaptation activities with consideration of efficiency and costs-benefits involved (WGII- AR6-IPCC 2022). Although information regarding cost-benefit analyses of adaptation is limited (WGII-AR6-IPCC 2022), in order to support this overview several useful examples with cost-effectiveness information have been identified in Latin America and the Caribbean. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES 2018) recommends that an adequate cost-benefit analysis must take into account the fact that some benefits are valued in monetary units (e. g. agricultural products) while other are often measured in non-economic, qualitative terms (e. g. sustainable livelihoods).

Component 1. Information and knowledge for decision making on DRR and climate change adaptation: There is high agreement that the limits to the success of adaptation strategies in Central America's coastal-marine systems arise from the absence of participatory processes, lack of knowledge (e.g., poor monitoring), lack of adequate metrics to evaluate adaptation actions, and insufficient information for decision-makers, leading to weak governance, lack of long-term commitments, lack of financial resources, weak policies, lack of awareness of climate risks, and lack of stakeholder engagement (IPCC 2021). With this in mind, the project proposes a strategy for the generation, capture, management and exchange of knowledge between Costa Rica and Panama as a way to strengthen informed decision-making in climate adaptation.



Several initiatives for knowledge research, monitoring and management were identified in Latin America. Although they do not specifically include a cost-effectiveness analysis, they do refer to the benefits. In Chile, the Eco-social Observatory of Climate Change Effects for High Altitude Wetlands of Tarapaca collects information on physical, biological and social variables for freshwater adaptation since 2013 (IPCC 2021). Other examples in the Andes to optimize watershed management and reduce the risk of water insecurity are the GLORIA-Andes network, the Andean Forest Network and the Initiative of Hydrological Monitoring in the Andes, IMHEA (IPCC 2021). In the Amazon floodplains, small-scale fisher and farmer communities incorporate their knowledge on natural hydrologic and ecological processes into management systems that reduce climate-change risk and impacts (IPCC 2021). In Panama, information on dengue is distributed in a monthly bulletin that is used by health authorities to inform vector control activities (IPCC 2021).

Knowledge generation, management and dissemination are key to making adaptation cost-effective. The south-south cooperation and exchange of information, experiences and know-how proposed by this AF project will accelerate the provinces/countries' learning process and the transferring of strengths to tackle similar adaptation challenges, making it cost-efficient.

Component 2. Nature-based Solutions for DRR and climate change adaptation: Restoration of ecosystems and species can have positive effects at local scales, often speeding up ecosystem recovery and improving their ability to provide ecosystem services to people (IPBES 2018). There is a great opportunity to incorporate ecosystem-based strategies into national and sub-national-level development planning and this must be done sooner than later, considering that initial cost of recovery of ecosystems and species can be high. There is also optimism of the potential of habitat restoration (IPBES 2018). Still, more research is needed on their effectiveness and possible negative side effects (WGII- AR6-IPCC 2022). Categories of NbS to be considered in the project are: terrestrial, freshwater and coastal-marine ecosystem restoration and enhancement of ecosystem services, drainage and flood prevention in towns and communities, coastal and beach protection and shoreline stabilization. This component identifies NbS that have already been tested in Panama, Costa Rica and other countries and that could be piloted for their adaptation to the conditions of the project region. For drainage and flood prevention, the preferred options are usually conventional engineering works which can be expensive, especially if they rely on gray construction, do not guarantee long-term resilience, and do not substantially reduce damages and losses from extreme events. Instead, NbS are increasingly recognized as a pragmatic and cost-effective approach to flood risk management.

Several of the specific cost-effectiveness cases identified in Central America and the Caribbean refer to initiatives for the coastal-marine sector. Coral reef and mangrove restoration projects are ten to one hundred times cheaper than artificial coastal defenses. On average, mangrove restoration in the Caribbean (excluding Florida) costs US\$23,000 per hectare. Coral reef restoration costs around US\$1 Million per linear kilometer across the Caribbean. Artificial structures for coastal protection such as seawalls and levees, on the other hand, cost nearly US\$19 Million per linear kilometer. Additionally, mangrove restoration projects show strong economies of scale: restoration becomes three times cheaper per hectare for projects larger than 10 hectares (Resilient Islands project 2019). In Panama, past mangrove restoration projects resulted in positive impacts to local livelihoods, including increased incomes to local inhabitants from tourist-based activities valued at US\$ 270,000 per year, and increased fishing stock valued at US\$ 2 million per year (FAO 2021). In Cuba, the Manglar Vivo project, which recovered mangroves and applied Ecosystem-based Adaptation (EbA) measures for local livelihoods to protect coastal communities from flooding, erosion and saltwater intrusion, developed a cost-benefit analysis and reported benefit/cost ratios of at least 6.66 (and up to 14.91), showing that NbS are cost-efficient for adaptation and disaster risk management (Aguilar 2020). The Resilient Islands project (2019) found that, in the Caribbean, mangroves and coral reefs together protect millions of people and over a billion dollars of property every year from coastal flood damages from storms and hurricanes. Ferrario et al. (2014 cited by WAVES 2016) also provided insight into the cost effectiveness of coral reef restoration when compared to the building of traditional breakwaters. The observed wave attenuation values by coral reefs in the field were similar to those of constructed low-crested breakwaters. In their review, the median project cost of tropical breakwaters was US\$ 19,791 per meter, while the median project cost of structural coral reef restoration was US\$ 1,290 per meter.

Component 3. Strengthening livelihoods and value chains for climate change resilience: It aims to implement



transformative adaptation practices to improve local livelihoods, dynamize the local economy, and reduce vulnerability along the value chain. It also aims to increase partnerships and commercial alliances between stakeholders in tourism, agriculture, and fisheries, with broad participation of women and youths along value chains. The prevailing conventional approach is based on inefficient value chains with concentration of profit in intermediaries, reduced income for producers, and high costs for businesses and consumers.

Local vulnerable livelihoods exposed to the impact of climate change and disaster risk can involve costs in the millions to compensate for damages and losses and to rehabilitate their productive capacity. Good livelihood practices are a cost-effective solution to strengthen the resilience of agriculture, fisheries and tourism, as well as to reduce losses and damages during climate events. Although the information regarding cost-benefit analyses of adaptation in the food production sector in the region is limited (WGII- AR6-IPCC 2022), several useful cases were identified in Central and South America. In Costa Rica, the Adapta2+ program succeeded, through EbA and financial mechanisms, in improving farmers' agricultural and livestock productivity by at least 5% and slightly reducing production costs for some crops (Fundecooperacion 2022). In Nicaragua, silvo-pastoral and regenerative agriculture practices increased milk quality and farmer productivity by up to 28%, even in the driest years. The project generated incremental sales of \$27.4 million over 4 years (Technoserve ND). In Colombia, a combination of organic agricultural practices, micro-watershed management, soil restoration, migratory birds as biological pest control, and water management training and capacity building doubled rice productivity and reduced the cost of production by half per hectare for small-scale rice farmers (NDF-IADB 2020). The Adapta Sertão project, supported by NDF and IDB LAB, invested \$5 million between 2006-2018 in capacity building, regenerative agricultural and livestock practices, sustainable small livestock management, training, improving strategic market and policy partnerships, and offering smallholders access to finance. As a result, farmers achieved productivity gains of 30-100% (FONTAGRO 2016). The Nature Conservancy (TNC), as part of the Resilient Central America program (ResCA), has worked with lobster fishing communities in Belize promoting sustainable practices to strengthen their resilience to climate change impacts through livelihood diversification, design and implementation of traceability schemes, support for fisheries policy updates, training and capacity building, among others. Due to its success, the Sustainable Oceans Fund (SOF) is in discussions to design an impact investment mechanism to continue the ongoing efforts of companies and cooperatives<sup>9</sup>.

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<sup>9</sup> Several documentations from ResCA U.S. State Department, Resilient Central America Program (ResCA), The Nature Conservancy. 2019-2021.

## E. ALIGNMENT WITH NATIONAL AND SUB-NATIONAL DEVELOPMENT STRATEGIES

Table 6 indicates most relevant policies and strategic plans relevant to this proposal. This proposed program is aligned with the UN Cooperation Frameworks for both countries, including Strategic Priority 4 for Costa Rica (strengthening the resilience of people, communities, institutions in the face of the multiplicity of risks and trends in the global context) and Result areas 1 and 3 for Panama (Social, economic and environmental inclusion / Comprehensive environmental management and disaster risk reduction).

Table 6. National and subnational development strategies

Strategies, Plans	Description	Project Consistency
<b>COSTA RICA</b>		
<p>Costa Rica's 2022-2026 National Climate Change Adaptation Plan, NAP</p> <p>Costa Rica's 2018-2030 National Climate Change Adaptation Policy, PNACC</p>	<p>Both the National Adaptation Policy (DCC-MINAE, 2018b) and the National Adaptation Plan (DCC-MINAE, 2022) were built to respond to the needs of a selected list of sectors: agriculture and fishing, tourism, infrastructure, health, water, and biodiversity.</p>	<p>The proposed AF project responds to most sectors, including tourism, agriculture, livestock and fisheries, biodiversity and water.</p> <p>Component 1 of the AF project contributes to Axis 1 in the NAP: key local and regional stakeholders and institutions with access to robust information for decision-making on climate change adaptation. Component 1 also contributes to NAP's Axis 3: institutional, sectoral, territorial and marine planning instruments incorporate adaptation.</p> <p>With the implementation of NbS, Component 2 contributes to NAP's Axis 3: ecosystems are used sustainably by local communities and indigenous peoples, providing ecosystem goods and services, including adaptation.</p> <p>By strengthening local livelihoods, Component 3 contributes to Axis 5: social and economic actors, small and medium-sized stakeholders are eco-competitive and resilient to climate risks, thanks to climate practices.</p> <p>The AF project contributes to both the Policy and the NAP in the guiding principle of these instruments in terms of "Participation and Inclusion", to ensure gender equity and the inclusion of vulnerable groups. It also adopts the "Human Rights and Gender Equity" approach of the same instruments, seeking to identify the differentiated impacts of climate change between women and men, to ensure equity when facing adverse effects.</p>
<p>2020 Costa Rica Nationally Determined Contribution, NDC</p> <p>Costa Rica</p>	<p>The 2020 NDC (DCC-MINAE, 2020) commits Costa Rica to take actions consistent with the global goal of limiting the increase in the planet's average temperature to 1.5 C. The proposed actions will result in the</p>	<p>Component 1 contributes to Area 10. "Action for climate empowerment", including: Climate empowerment with actions in education, training, social awareness, access to information, citizen participation and international cooperation; training programs for women, youths, Afro Costa Ricans, indigenous, and other vulnerable populations to facilitate green jobs; communication, integration of perspectives of vulnerable populations; community</p>

Strategies, Plans	Description	Project Consistency
	<p>country's adaptation capacity, strengthened resilience and reduced vulnerability to climate change. The document is partly based on the National Decarbonization Plan and the National Adaptation Policy described separately. The 2020 NDC prioritizes the generation of green jobs to provide economic opportunities to vulnerable populations such as indigenous people, Afro Costa Ricans, women and youths. It focuses on economic diversification through sustainable tourism or the enhancement of kitchens and traditional or innovative agri-food systems. In general, it aims to reduce emissions and strengthen adaptation and resilience.</p>	<p>participation in climate adaptation to reduce vulnerability; strengthen capabilities of community leaders and youths.</p> <p>Components 2 and 3 contribute to Action Area 9 "Oceans, Water and Blue Biodiversity". Costa Rica is committed to adapted marine and coastal ecosystems and to protection of surface and underground water sources.</p> <p>Component 3 contributes to Action Area 7 "Agriculture": Costa Rica is committed to transforming agriculture and livestock through emission reduction and adaptive practices.</p> <p>The AF project adds to Contribution 11.3: "By 2030, the country will follow up on the indicators required to ensure gender equality and empowerment of the Afro-descendant community, organized women's groups, youth, transgender community, Indigenous Peoples, people with disabilities and the elderly in the climate agenda in the sectors of action".</p>
<p>2020-2050 Territorial Economic Strategy for an Inclusive and Decarbonized Economy Costa Rica</p>	<p>This Strategy (MIDEPLAN, 2021) defines the roadmap to build a digitized, decarbonized and decentralized Costa Rican economy over the next 30 years, taking advantage of each territory's diverse capacities. For the Caribbean region, the strategy defines these development poles: a) Guápiles Agricultural-Logistic Pole: agriculture, cement, iron and steel, and tourism; b) Limón-Cahuita Caribbean Port Pole: the most important port complex in the country, agriculture, fishing and tourism, forestry.</p>	<p>The proposed project contributes to the following key actions: <u>Human Capital</u>: 15. Training in green and regenerative economy; 16. Training in blue economy; 18. Training in tourism; 19. Innovation and human capital. <u>Social inclusion</u>: 22. Women Entrepreneurs; 27. Entrepreneurs and SMEs; 28. Integration of indigenous communities; 30. Financial inclusion tools. <u>Economic development</u>: 35. Green economy enhanced; 36. Blue economy enhanced; 39. Innovation in (Small and Medium Enterprises (SMEs)). <u>Decarbonization</u>: 41. Improved agricultural practices; 43. Forestry practices; 50. Sustainable use of marine areas.</p>
<p>2018-2050 National Decarbonization Plan Costa Rica</p>	<p>The Plan (DCC-MINAE, 2018a) consists of a roadmap with key actions to consolidate the decarbonization of the Costa Rican economy. Resilience and decarbonization are conceived as means to transform the development model based on bio-economy, green growth, inclusion, and</p>	<p>The proposed project contributes to the advancement of Costa Rica's decarbonization plan: a) Adoption of technologies to reduce emissions and improve competitiveness in farm and processing; marketing of low-emission products. b) Eco-competitive livestock model based on productive efficiency and reduction of greenhouse gasses. c) A management model for rural, urban and coastal territories that use NbS to protect biodiversity, increase of forest cover, and ecosystem services.</p>

Strategies, Plans	Description	Project Consistency
	improvement of people's quality of life. The key actions seek transformational change.	The AF project will also contribute to the Plan's cross-cutting strategy "Inclusion, human rights and promotion of gender equality". The transformation processes will be carried out under integral strategic considerations with a focus on human rights and gender equality, which guarantee respect for diversity and the promotion of inclusion.
2016-2030 National Policy of Risk Management  National Risk Management Plan, 2nd five-year period 2021-2025, Costa Rica	The Risk Management Policy (CNE, 2015) and Plan (CNE, 2021) guide risk management by government, civil society and private sector, to achieve a safer and sustainable national development. It starts with a diagnosis of social and productive risk factors and continues with the planning of each territory and productive sector to generate changes on those risks and reduce losses.	Component 1 contributes to Axis 5 "Planning, regulatory mechanisms and instruments for risk reduction". Component 2 and Component 3 contribute to Axis 1: "Generation of resilience and social inclusion", by reducing risks for populations that are vulnerable due to poverty, gender, age, disability, ethnicity, and other factors. Component 3 contributes to Axis 4 "Sustainable financial investment, infrastructure and services" through Improved strategies for the private and microfinance sectors.  The AF project will contribute to the following aspiration of the Plan: products related to risk management (documents, projects, communication material, field work tools, protocols, norms) will include a gender approach.
Costa Rica's National Policy of Areas of Protection 2020-2040	It aims to safeguard the protection areas of rivers, streams, creeks and springs: STRATEGIC AXES: 1) Recovery and rehabilitation of protected areas; 2) Management and protection of wild protected areas; 3) Institutional strengthening and governance of protection areas.	Component 2 of the proposed AF project proposal can contribute to the Policy's Strategic Axes 1 and 2. NbS will be key in watershed protection and rehabilitation.
Costa Rica's 2022-2027 National Tourism Plan	This Plan (ICT, 2022) defines two sectors for the Caribbean: North (Tortuguero, Parismina) and South (Limón, Cahuita, Puerto Viejo). It also includes 5 tour destinations: the Tortuguero canals, Yorkín, Shiroles, Bribri and Gandoca: <b>Axis 1. Efficient use of tourism space</b> , value proposals in the territory with organized land use, climate resilience, and sustainability. <b>Axis 2. Product development:</b> diversified offer through new products and destinations. <b>Axis 3. Differentiated positioning:</b> country's image as a destination that protects the environment; social, environmental and	The AF project proposal complements the Tourism Plan's Axis 1 as it proposes strengthening tourism through climate change adaptation practices (Output 3.1).  The project also complements Axis 2 by strengthening the tourism value chain and its climate resilience as a local livelihood (Output 3.2). Axis 3 and Axis 5 also benefit from a tourism approach that enhances the country's natural and cultural attractions (Output 2.1, Output 3.1). Axis 4 is further strengthened through business support (Outputs 3.1, 3.2). The overall Tourism Plan also benefits from Component 1 and its efforts to systematize and share knowledge products and training activities.  The AF project can contribute to the axis of Responsible, Sustainable and Inclusive Tourism, in which ICT promotes gender equity in the tourism sector, as well as good safety practices and the pleasant stay of female tourists in the destination. Its "Red Sofia" program seeks that every person in the Costa Rican tourism sector commits to gender equality, minimizing violence against women and providing safe environments for national and foreign tourists.

Strategies, Plans	Description	Project Consistency
	<p>cultural values. <b>Axis 4. Productive linkages:</b> networks, value chains and new tools for companies to improve their competitiveness; inclusion of MSMEs; employment and decent work. <b>Axis 5. Tourism experience:</b> personalized experiences.</p>	
<b>PANAMA</b>		
Panama Climate Action Plan 2030 - 2050	<p>Approved through Decree N°10 of June 16, 2022. It covers the following strategic pillars: Energy, Forests, Biodiversity, Integrated Watershed Management, Coastal Marine Systems, Sustainable Agriculture and Aquaculture, Resilient Human Settlements, Public Health, Sustainable Infrastructure, Circular Economy, Climate Transparency.</p>	<p>This is a key instrument to promote Panama's long-term national and sectoral ambitions on climate change. It aims to facilitate and ensure the implementation of the Nationally Determined Contribution (NDC). Strategic pillars covered in the AF project proposal include: Forests, Integrated Watershed Management, Coastal Marine Systems, and Sustainable Agriculture and Aquaculture.</p> <p>A guiding principle of this instrument is "Gender-Sensitive Participation, Planning and Decision-Making". The plan aims to strengthen the gender vision in natural resource management, so as to promote the use of technologies for climate change adaptation through nature-based solutions. It also seeks to ensure that women and men are equally represented in the planning, operation, maintenance and management of programs and projects. The AF program offers a great opportunity to advance in these aspirations.</p>
Panama's Nationally Determined Contribution 2020	<ul style="list-style-type: none"> <li>● <u>Forestry sector</u>: it focuses on forest management and watershed protection.</li> <li>● <u>Integrated Watershed Management</u>: Key to the Panama Canal, hydroelectricity generation, and agriculture.</li> <li>● <u>Coastal-Marine Systems</u>: Gender-responsive coastal management to improve the quality of life of the communities that depend on coastal resources.</li> <li>● <u>Biodiversity</u>: Conservation, sustainable use and restoration of biodiversity in rural communities, benefiting youths and women; ecosystem-based approach to adaptation.</li> <li>● <u>Agriculture, Livestock, and Aquaculture</u>: Low-emission, biodiverse and climate resilient sector;</li> </ul>	<ul style="list-style-type: none"> <li>● Component 1 has the potential to contribute to all five sectors by generating and providing information for decision making.</li> <li>● Component 2 contributes to the following sectors: Forestry, Integrated Watershed Management, Coastal-Marine Systems, and Biodiversity.</li> <li>● Component 3 contributes mostly to Agriculture, Livestock, and Aquaculture.</li> </ul> <p>The NDC clearly establishes the need for climate action to contribute to the objectives of combating poverty and inequality, which limits the country's sustainable development. In this sense, the special vulnerability of women and indigenous populations is recognized. The AF program offers a great opportunity to advance in the reduction of gender equity.</p>

Strategies, Plans	Description	Project Consistency
	socioeconomic benefits through climate-smart management, including rural women.	
National Climate Change Plan for the Panamanian Agricultural Sector	The plan is made up of five axes that respond to one goal (MIDA-MiAmbiente, 2018): <u>Goal</u> : To have a resilient, participatory and competitive agricultural sector, with a low carbon economy, through the implementation of actions that stimulate a sustainable and competitive production and consumption, in an inclusive and equitable environment that contributes to food security. <u>STRATEGIC AXES</u> : 1) Production, agricultural competitiveness and food safety food security; 2) Sustainable management of land and natural resources; 3) Research, development, innovation and transfer; 4) Technical capacity building and extension; 5) Institutional, economic and financial mechanisms.	The proposed AF project responds to the goal of a resilient and participatory agricultural sector and the implementation of actions for a competitive production. The project supports Axis 1 on agricultural competitiveness, Axis 2 on sustainable land and natural resource management, Axis 3 on the dissemination of good practices based on nature, Axis 4 on technical support to farmers and fishers, and axis 5 on financial mechanisms.  The plan has only one strategic line with a gender focus: LA 4.1.6 Capacity building for communities in associativity, with a gender focus. The AF program offers a great opportunity to advance in community capacity building with a gender focus.
The National REDD+ Strategy, Panama 2022	It favors national policies, strategies, programs and priority actions to conserve and increase forest cover and sustainable management, reduce GHE and increase natural sinks that remove these gases.	This Strategy is compatible with the project's focus on adaptation and improvement of climate resilience and the enhancement of livelihoods of the inhabitants that depend on forests and watersheds, including indigenous peoples. Section 5 is dedicated to gender equity as a cross-cutting theme in the National REDD+ Strategy. The different lines of action that will be implemented for the execution of this Strategy must include a gender perspective and provide equal opportunities for men and women, taking into account the gender division of labor and domestic, reproductive, productive and social functions. Women, thanks to the positive discrimination bias, will improve their capacities and perfect the mechanisms for access to the use, conservation and recovery of forest resources. The AF program offers a great opportunity to advance in this aspiration.
National Gender and Climate Change Plan of Panama	Approved through Decree N°11 of June 16 2022. It aims to promote social and environmental transformation through inclusive, low-emission, climate-resilient	This instrument is compatible with the project's approach to the inclusion of vulnerable stakeholders, including women. It is also compatible with the Gender Policy of the Adaptation Fund. The proposed AF program offers an opportunity to promote greater access by rural and indigenous women to technical and financial resources for productive initiatives, as a group of women or individually, as multipliers of environmentally friendly and climate compatible

Strategies, Plans	Description	Project Consistency
	development with gender considerations.	activities, expanding the possibilities of women's participation in decision-making that promote transformation towards full equality for women and men.
Integral Development Plan for the Indigenous Peoples of Panama (CONDIPI, 2018)	The Plan is a national consensus among 12 Indigenous Congresses and Councils on a common development vision. Its activities will be carried out over 15 years. <u>Short term:</u> Infrastructure and equipment needs in health, education, water and sanitation. <u>Medium term:</u> programs to improve the quality and cultural relevance of those services. The Plan will directly benefit 200,000 people.	The proposed AF project can take advantage of improvements in education, such as bilingual teaching methodologies for knowledge dissemination on climate change adaptation (Plan's outcome 3). Nature-based Solutions implemented by the project can complement and enhance investments in water and sanitation (Plan's outcome 2). The Project can mainstream climate change adaptation into local planning, in the context of the Plan (Plan's outcome 3). This instrument addresses the need to close the gender equity gap, due to issues such as discrimination and inequality. To this end, it proposes to promote the political leadership of youths and indigenous women, with training on gender issues and indigenous women's rights, as well as on development management. The result is "women leaders actively participating as leaders in their communities and congresses".
Panama's 2020-2024 Strategic Government Plan (Gobierno Nacional 2019)	The Government Plan proposes relevant activities to benefit agriculture, livestock, fisheries and tourism (listed in different sections): Promote sustainable agriculture using techniques and agricultural traditions of native peoples; support family farming as part of food production; Support precision practices, soil conservation, drip irrigation, fertigation, live barriers, disease-free seeds, water harvesting, sustainable livestock feeding; support artisanal fisheries; provide technical assistance and rural extension; promote rural tourism initiatives.	The practices listed by the Government Plan can be supported by the AF project through the implementation of Nature-based Solutions with rural communities in Bocas del Toro. Although the Plan is broad, covering all aspects of the national agenda, the proposed project is compatible with the activities from the list and can contribute to their advancement, at least until 2024.  The plan proposes some principles and lines of action to improve the status of women, including: 1) ensuring that women and men are valued and recognized equally; 2) removing obstacles in the labor market that limit the participation and full development of women; 3) promoting respect and equal treatment in the rights, duties and participation of women in all areas of social life. The proposed AF program offers an opportunity to improve women's participation in the labor market in Bocas del Toro, thus improving their income and self-esteem and closing their gaps in relation to men.
Sustainable Tourism Master Plan for Panama 2020 – 2025 Update (ATP 2020)	This instrument includes a section specifically for Bocas del Toro, with the following highlights: <ul style="list-style-type: none"> <li>● Ecotourism destination of islands, for sun and beach, local culture, wildlife watching and nautical activities.</li> <li>● Potential in other experiences: community tourism, indigenous cultures, music, gastronomy, small cruises.</li> </ul>	The AF project proposes to strengthen and integrate agricultural, livestock and fisheries value chains with tourism to strengthen the local economy, climate resilience and tourism.  Working with vulnerable populations such as Afro-Caribbean and indigenous communities, as well as with women and youths, offers great opportunities to take advantage of the socio-cultural attractions to strengthen Bocas del Toro's tourism offer. NbS can help conserve/restore the quality of natural attractions such as species, landscapes and ecosystems, as well as rehabilitate their services. The proposed project is aligned with and can contribute to the advancement of the Sustainable Tourism Master Plan for Bocas del Toro.  Component II: Equipment, local tourism management and community development, contemplates "productive community development, through actions for economic development, social cohesion and gender equity based on creative and cultural industries".

Strategies, Plans	Description	Project Consistency
	<ul style="list-style-type: none"> <li>● Bocas del Toro is a place of scientific interest recognized for its high degree of endemism.</li> <li>● Markets: United States and Canada, Spain, Germany and UK. Important land traffic from Costa Rica.</li> </ul>	<p>The proposed AF program offers an opportunity to promote community economic development with social cohesion and gender equity.</p>
<p>Bocas del Toro Diagnosis and Regional Vision to 2050 (CECOMRO, SENACYT 2018)</p>	<p>Highlights of this policy: 1) Cross-border position and favorable conditions for land transportation and logistics; 2) Protected natural areas and great biodiversity; 3) Unique mountainous and coastal ecosystems, especially the archipelago; 4) Abundant water resources; 5) Good agrological capacity of the soils; 6) Excellent qualities for tourism Development. 7) Cultural diversity; 8) Opportunities to consolidate a tourist destination Western Region-Costa Rica; 9) Opportunities for more integration in Panama’s territorial economic structure.</p>	<p>The focus of the AF project proposal is to take full advantage of the biological diversity, agro-productive capacity and natural-cultural tourist attractions to strengthen the climate resilience of vulnerable populations in the province. This coincides with the regional vision from the strengths and opportunities for Bocas del Toro.</p> <p>This instrument makes no reference to gender.</p>
<p>National Water Safety Plan 2015-2050: Water for All (Comité de Alto Nivel de Seguridad Hídrica 2016)</p>	<p>The Plan defines 5 targets: <u>Target 1.</u> Universal access to quality water and sanitation services. <u>Target 2.</u> Water for inclusive socioeconomic growth. <u>Target 3.</u> Preventive management of water-related risks. <u>Target 4.</u> Healthy watersheds. <u>Target 5.</u> Water sustainability and improved governance.</p>	<p>Component 2 of the AF project proposal will contribute mainly to targets 3 and 4, while Component 3 will contribute to target 2.</p> <p>This instrument seeks to contribute to SDG 5. It states that "water scarcity exacerbates gender inequality, and in some cases leads to child labor among girls." The proposed AF program offers an opportunity to increase the resilience of women and families to the challenges of water scarcity.</p>
<p>National Wetland Policy 2017-2030 and Action Plan (Panama)</p>	<ul style="list-style-type: none"> <li>● This Policy bases its implementation on four Management Areas: 1) Integrated Wetlands Management; 2) Enforcement and compliance with the regulatory framework; 3) Generation and management of information and knowledge; 4) Environmental governance. In order to achieve the</li> </ul>	<p>The proposed project will build on the results of some key actions of the plan, specifically: Action 7: Create and maintain an Integrated Wetland Information System. Action 10: Develop a Wetland Restoration and Recovery Program (WRRP) with funding options to ensure its sustainability. Action 11: Develop and implement a guide of good practices in wetlands. Action 15: Develop awareness campaigns on the importance of wetlands and their economic and cultural values. Action 16: Implement environmental education plans related to wetlands, including inclusive informative materials. These results will support Component 2 in identifying and validating NbS related to wetlands and provide information for Component 1.</p>



Strategies, Plans	Description	Project Consistency
	proposed objectives of the Policy, the Action Plan is proposed to establish a set of strategic actions to be implemented in the first five years (2019-2023) from the enactment of the Policy.	One of the Policy guidelines states: “Promote the generation of opportunities and strengthen the capacities of community-based organizations to take advantage of business opportunities and other economic alternatives provided by the sustainable use of wetlands with gender equity”. The AF program offers a great opportunity to advance in business alternatives with gender equity.

## F. ADHERENCE TO RELEVANT NATIONAL TECHNICAL STANDARDS

Table 7. National and technical standards relevant for this AF project proposal

Field	AF’s ESP	Relevant Technical Regulations and Standards	Description
Environmental Impact Assessment (EIA)	<ul style="list-style-type: none"> <li>● Protection of Natural Habitats</li> <li>● Conservation of Biological Diversity</li> <li>● Pollution Prevention and Resource Efficiency</li> <li>● Physical and Cultural Heritage</li> </ul>	<p>Costa Rica:</p> <ul style="list-style-type: none"> <li>● Environmental Feasibility: registrations for environmental impacts before the Environmental Technical Secretariat (SETENA).</li> <li>● SETENA reviews and approves compliance with environmental requirements for each type of project and degree of impact.</li> </ul> <p>Panama:</p> <ul style="list-style-type: none"> <li>● Environmental Impact Assessments are regulated through:</li> <li>● Law 41 of 1998 "General Environmental Law of the Republic of Panama" (Chapter III of Title II).</li> <li>● Executive Decree No. 123 of 2009 and its amendments.</li> </ul>	<ul style="list-style-type: none"> <li>● Any project that contributes to the development of Costa Rica is required by SETENA to fill out the D2 or D1 forms in order to obtain its environmental viability:</li> <li>● Environmental Assessment Document D1 applies to activities, works and projects of low, moderate and high environmental impact.</li> <li>● Environmental Registration D2 is required for projects of very low environmental impact.</li> </ul> <ul style="list-style-type: none"> <li>● The EIA is classified as Category I, II or III (Article 24 of Decree No. 123):</li> <li>● Category I: may generate negative environmental impacts that are not significant and do not entail significant risks.</li> <li>● Category II: may generate significant negative environmental impacts that partially affect the environment, which can be eliminated or mitigated with easily applicable measures.</li> <li>● Category III: may generate quantitative or cumulative negative environmental impacts that require an in-depth analysis and the application of corresponding mitigation measures.</li> </ul>

Field	AF's ESP	Relevant Technical Regulations and Standards	Description
Compliance with soil use	<ul style="list-style-type: none"> <li>Lands and Soil Conservation</li> </ul>	Costa Rica: <ul style="list-style-type: none"> <li>Land Use Certificate based on: Soil Use, Management and Conservation Law No. 7779 of 1998 - Urban Planning Law No. 4240.</li> </ul>	<ul style="list-style-type: none"> <li>The Land Use Certificate is provided by the municipality of the corresponding canton; it is a necessary requirement for constructions, expansions, earthworks or to identify uses that can be given to a property according to current regulations, mainly the local Land Use Plan.</li> </ul>
		Panama: <ul style="list-style-type: none"> <li>Forest Cover and Land Use Map of the Republic of Panama (under construction)</li> <li>Provincial Land Management Plan</li> </ul>	<ul style="list-style-type: none"> <li>MiAMBIENTE is developing, based on cartographic data, a new Forest Cover and Land Use Map of the Republic of Panama, which includes the province of Bocas del Toro.</li> <li>Work is also underway on a provincial Land Management Plan that should include land uses.</li> </ul>
Ecosystems: wetlands and mangroves	<ul style="list-style-type: none"> <li>Protection of Natural Habitats</li> <li>Conservation of Biological Diversity</li> </ul>	Costa Rica: <ul style="list-style-type: none"> <li>Regulation of the Rational Use of Aquatic Resources Approved in the Management Plans of Wetlands (Decree N° 39411-MINAE-MAG)</li> </ul>	<ul style="list-style-type: none"> <li>It regulates the rational use of mangrove resources through guidelines dictated by the respective management plan in each Protected Wildlife Area where mangroves are located. The rational use can only be carried out by persons integrating formal associations and cooperatives of local communities that have traditionally exercised that activity.</li> </ul>
		Panama: <ul style="list-style-type: none"> <li>Law No. 1 (1994): Forestry legislation regarding forests adjacent to bodies of water;</li> <li>Law No. 24 (1995): Biodiversity legislation to conserve vital habitats and guarantee biodiversity;</li> <li>Law 41 (1998) General Environmental Law, in its articles 3, 73 and 74 (responsibility on marine-coastal resources).</li> </ul>	<ul style="list-style-type: none"> <li>The guidelines provided by these legislations will be mandatory for any activity involving mangrove restoration or their sustainable use in Bocas del Toro.</li> </ul>
Ecosystems: coral reefs	<ul style="list-style-type: none"> <li>Protection of Natural Habitats</li> <li>Conservation of Biological Diversity</li> </ul>	Costa Rica: <ul style="list-style-type: none"> <li>Promotion of a restoration and conservation initiative for the recovery of coral ecosystems (Decree N° 41774-MINAE)</li> </ul>	<ul style="list-style-type: none"> <li>The Decree seeks to protect coral reefs as coastal ecosystems that offer protection from extreme climate events. The Protocol provides a detailed guide of the minimum requirements to be considered by any proposal that aspires to develop a coral restoration project in Costa Rica, in order to prevent poor planning and inadequate projects, which could have counterproductive effects on reef ecosystems.</li> </ul>

Field	AF's ESP	Relevant Technical Regulations and Standards	Description
		<ul style="list-style-type: none"> <li>● Protocol for the Restoration of Costa Rica's Reefs and Coral Reef Communities (SINAC-GIZ, 2020).</li> </ul>	
Tourism	<ul style="list-style-type: none"> <li>● Compliance with the Law</li> <li>● Physical and Cultural Heritage</li> <li>● Access and Equity</li> <li>● Marginalized and Vulnerable Groups</li> <li>● Gender Equality and Women's Empowerment</li> </ul>	<p>Costa Rica:</p> <ul style="list-style-type: none"> <li>● Regulations of Tourism Companies and Activities (Decree No. 43097-MEIC-TUR, 2021)</li> </ul> <p>Costa Rica:</p> <ul style="list-style-type: none"> <li>● Regulation of the Tourism Sustainability Program, CST 2.0 Standard (Decree No. 414125 MINAE-MCJ-MEIC-TUR)</li> </ul> <p>Panama:</p> <ul style="list-style-type: none"> <li>● Panama Tourism Quality Certification System (SCCT)</li> </ul>	<ul style="list-style-type: none"> <li>● This recent Law seeks to conserve, use sustainably, restore, rehabilitate and prevent pollution of coral reefs and associated species such as reef fish and seagrasses.</li> <li>● As a compliance mechanism, the Law establishes a Reef Committee with representatives from public, scientific, academic and non-governmental entities.</li> <li>● MiAmbiente must lead the development of an action plan to protect, prevent environmental damage, conserve and restore coral reefs. Its guidelines will be mandatory for any activity involving reef restoration.</li> </ul> <ul style="list-style-type: none"> <li>● Any company or tourism activity may request the Tourism Declaration to the Costa Rican Tourism Institute (ICT), either as an individual or legal entity. Lodging, gastronomy, tour operation, land and water transportation, indigenous organizations, and others may apply. They must comply with technical, economic and legal requirements. <u>Benefits:</u> promotion, training, participation in international tourism fairs, information at the ICT's tourism information centers at airports.</li> <li>● Individuals and legal entities dedicated to lodging, gastronomy, tour operation, land and water transportation, and others may apply for this voluntary certificate. The CST is a technical tool aligned with national and international requirements, with an online evaluation system and verification mechanisms. <u>Benefits:</u> access to information on environmentally friendly technologies, promotion, training, others.</li> <li>● Steps to follow to apply for the Tourism Quality Certification:</li> <li>● Register in the National Registry of Tourism Companies and Activities of the Panama Tourism Authority (ATP).</li> <li>● Acquire the Technical Standard for the activity being developed (DGNTI-COPANIT 388-2011 for Tourist Guides; DGNTI-COPANIT 387-2011 for Hotels; DGNTI-COPANIT 386-2011 for Travel Agencies).</li> <li>● Carry out a self-assessment or diagnosis in relation to the Standard, to verify the company's status.</li> </ul>

Field	AF's ESP	Relevant Technical Regulations and Standards	Description
			<ul style="list-style-type: none"> <li>Contract the services of an assistant company to help implement the Standard.</li> <li>Hire the services of an approved certifying company for the System to certify to ATP whether or not the company or activity can be certified.</li> </ul>
Agriculture and livestock: organic production	<ul style="list-style-type: none"> <li>Pollution Prevention and Resource Efficiency</li> <li>Public Health</li> <li>Lands and Soil Conservation</li> <li>Access and Equity</li> <li>Marginalized and Vulnerable Groups</li> <li>Gender Equality and Women's Empowerment</li> </ul>	<p>Costa Rica:</p> <ul style="list-style-type: none"> <li>Organic Agriculture Regulations (Decree No. 29782-MAG)</li> </ul> <p>Panama:</p> <ul style="list-style-type: none"> <li>Law Nº 8 - Regulations for the development of organic agricultural activities (2002).</li> <li>Decree Nº 121 - Regulations for the production, transformation and commercialization of organic agricultural products (2015).</li> </ul>	<ul style="list-style-type: none"> <li>This Decree defines guidelines to regulate the production, processing, certification and marketing of organic agricultural and livestock products. Organic foods must comply with the requirements established in this Decree as well as related technical and phytosanitary regulations. Official denominations include "Organic, Biological or Ecological Agriculture".</li> <li>Regulation for the production, transformation, labeling and commercialization of fresh or processed organic agricultural products. Organic production aims to: a) increase the biological diversity of the system; b) increase biological activity in the soil; c) maintain soil fertility in the long term; d) reuse plant and animal wastes, returning nutrients to the soil and minimize the use of non-renewable resources; e) rely on renewable resources and locally organized agricultural systems; f) promote a healthy use of soil, water and air by minimizing pollution; g) handle agricultural products respecting their organic integrity.</li> </ul>
Agriculture and livestock: phytosanitary control	<ul style="list-style-type: none"> <li>Pollution Prevention and Resource Efficiency</li> <li>Public Health</li> <li>Lands and Soil Conservation</li> </ul>	<p>Costa Rica:</p> <ul style="list-style-type: none"> <li>Control of agrochemical residues, maximum residue limits and good agricultural practices by the Phytosanitary Service (SFE in Spanish), a department of the Ministry of Agriculture (MAG).</li> </ul> <p>Panama:</p> <ul style="list-style-type: none"> <li>National Plant Health Directorate</li> <li>Diagnostic and Quality Control Laboratories for Pesticides</li> <li>Department of Coordination of Technical Services of Phytosanitary Detection and Diagnosis</li> </ul>	<ul style="list-style-type: none"> <li>The SFE systematically controls pesticide residues in vegetables throughout the national territory, with the objective of ensuring their chemical safety for human consumption. To this end, SFE personnel take samples and implement a risk analysis. The SFE applies Maximum Residue Limits (LMR in Spanish) with which a product must comply. The SFE also offers training and technical assistance to producers in Good Agricultural Practices to reduce agrochemicals.</li> <li>The Phytosanitary Standards and Regulations Program revises, updates and regulates Law 47 on Plant Health, harmonizing it with international phytosanitary legislation.</li> <li>The Diagnostic and Quality Control Laboratories identifies pesticide residues in fruits and vegetables.</li> </ul>

Field	AF's ESP	Relevant Technical Regulations and Standards	Description
			<ul style="list-style-type: none"> <li>Phytosanitary Detection offers agricultural producers the service of sample analysis at national level for the detection and diagnosis of pests in different agricultural products.</li> </ul>
Fishing and aquaculture	<ul style="list-style-type: none"> <li>Protection of Natural Habitats</li> <li>Pollution Prevention and Resource Efficiency</li> <li>Public Health</li> <li>Access and Equity</li> <li>Marginalized and Vulnerable Groups</li> <li>Gender Equality and Women's Empowerment</li> </ul>	Costa Rica: <ul style="list-style-type: none"> <li>Decree No. 36782-MINAET-MAG-MOPT-TUR-SP-S-MTSS – Regulation of Law No. 8436, Law on Fisheries and Aquaculture.</li> </ul>	<ul style="list-style-type: none"> <li>The entity responsible for fisheries and aquaculture in Costa Rica is the National Institute of Fisheries and Aquaculture (INCOPECA). The Decree regulates fishing and aquaculture activities in the stages of capturing, extraction, production, processing, transportation, commercialization and sustainable use of aquatic species. It also regulates the conservation, protection and sustainable development of the hydrobiological resources, in the exercise of the fishing and aquaculture activities and their effects. It also regulates licenses, permits, fishing bans, and concessions.</li> </ul>
		Panama: <ul style="list-style-type: none"> <li>Law No. 204 - Law that regulates fishing and aquaculture in the Republic of Panama (2021).</li> </ul>	<ul style="list-style-type: none"> <li>The institution that ensures compliance with the Law is the Aquatic Resources Authority of Panama.</li> <li>The objectives of the law include, among others: promote the integrated management and sustainable use of fisheries and aquaculture, considering social, economic, technological and environmental aspects; organize the sustainable development of fishing and aquaculture activities; promote the improvement of the quality of life of fishers and fish farmers; ensure access to and use of aquatic resources by coastal communities and indigenous peoples.</li> </ul>
Labor Rights	<ul style="list-style-type: none"> <li>Compliance with the Law</li> <li>Human Rights</li> <li>Gender Equality and Women's Empowerment</li> <li>Core Labour Rights</li> </ul>	Costa Rica: <ul style="list-style-type: none"> <li>Costa Rica's Labor Code</li> </ul>	<ul style="list-style-type: none"> <li>The project will require executing partners and beneficiaries to comply with national labor legislation, as well as with AF's Environmental &amp; Social Policy (ESP).</li> <li>The labor rights included in the current Labor Code ensure compliance with international obligations assumed by the country to ensure decent working conditions.</li> </ul>
		Panama: <ul style="list-style-type: none"> <li>Panama's Labor Code</li> </ul>	<ul style="list-style-type: none"> <li>The regulations governing the relationship between capital and labor in Panama are contained in the Labor Code, which has been in force since 1972. This legal regulation defines the rights of workers in Panama and offers them protection by the State.</li> </ul>

## G. DUPLICATION OF PROJECT WITH OTHER FUNDING SOURCES

Table 8. Complementarity of AF project proposal with other relevant projects

Relevant projects and initiatives	Description of project/initiative	Relevant results for the proposed project	Potential Complementarity
<p>Project to support the “Integral Development Plan for the Indigenous Peoples of Panama” (described in section E)</p> <p>Funder &amp; grant: IBRD-World Bank contribution of \$80M and a local contribution of \$5M.</p> <p>Timeline: 2018-2023</p> <p>Panama</p>	<p>The Project aims to strengthen: (a) the capacity of Indigenous Authorities to plan and implement development investments for Indigenous Territories; (b) the delivery of selected public services in those Indigenous Territories, as identified in the Integral Development Plan for the Indigenous Peoples of Panama.</p>	<p>The Plan targets education, health, water, sanitation, infrastructure and energy within indigenous territories, according to specific plans established by each traditional structure.</p> <p>Location: communities within Indigenous Territories</p>	<p>Outcome 3 of the proposed AF project can take advantage of improvements in education, such as bilingual teaching methodologies for knowledge dissemination on climate change adaptation. NbS implemented by the proposed project’s Outcome 2 can complement and enhance investments in water and sanitation. The proposed project can mainstream climate change adaptation into local planning through Outcome 1.</p>
<p>Development of a Marine Dynamics database for the Panamanian coasts to assess vulnerability and climate change impacts to sea level rise (Cantabria)</p> <p>Funder &amp; grant: CTCN Technical Assistance, \$220K</p> <p>Timeline: 2021-2022</p> <p>Panama</p>	<p>Panama's coastal zones are a priority for rural settlements in terms of livelihood, housing and food security. But the direct impacts of sea level rise such as coastal erosion, saltwater intrusion and coastal flooding are worrisome threats to these communities. The majority of the population in coastal areas live in extreme poverty, which aggravates their vulnerability.</p> <p>The development of marine dynamics indicators will allow Panama to characterize coastal flooding in the face of extreme events and climate change, and thus be able to direct adaptation efforts and resources to threatened regions and activities.</p>	<ul style="list-style-type: none"> <li>● Development of high-resolution numerical data of marine dynamics.</li> <li>● Evaluation and recommendation of adaptation measures for the coastal zone with nature-based solutions.</li> <li>● Development of high impact graphic material for communities at risk.</li> </ul> <p>Location: all coasts of Panama, including Bocas del Toro (Carenero island, Changuinola, and Bastimentos island)</p>	<p>The AF project could be an excellent vehicle for the implementation of adaptation measures and NbS in the coastal zone, which could also be shared with Costa Rica, as part of Outcomes 2 and 3.</p> <p>The high impact graphic material for communities at risk could be useful for dissemination activities as part of Outcome 1.</p>
<p>"Fostering climate change adaptation in Panama through</p>	<p>This project adopts a watershed management approach and uses the water-food-energy-climate nexus to facilitate the transition to an integrated</p>	<ul style="list-style-type: none"> <li>● Enhanced specialized technical capacity for data</li> </ul>	<p>It is expected that a lot of interaction between the two projects, since UNEP will be involved in the implementation of both. The water basin project has</p>

Relevant projects and initiatives	Description of project/initiative	Relevant results for the proposed project	Potential Complementarity
<p>ecosystem approach for water security at the water basin level" (UNEP – Panamá)</p> <p>Funder &amp; grant: EUROCLIMA+, funded by the European Union, €2.9M.</p> <p>Timeline: 2023-2025</p>	<p>and systemic approach. This is intended to serve as a catalyst to move the water sector towards climate resilient development pathways.</p> <p>The project consists of four components: 1. Improve and tailor climate data and information for effective adaptation planning and action in the water sector. 2. Enhance institutional capacity for climate-informed adaptation planning in the water sector. 3. Pilot Ecosystem-based Adaptation (EbA) interventions to build resilience of communities and ecosystems in selected watersheds. 4. Enhance knowledge management and learning to inform policy making and upscaling of best practices.</p>	<p>collection and analysis of government experts.</p> <ul style="list-style-type: none"> <li>● Tailored knowledge platform with climate information products to inform adaptation planning in the water sector.</li> <li>● Best practices and lessons learned in using climate data and information for adaptation planning.</li> <li>● Tools for informing the prioritization, design and implementation of cost-effective EbA measures.</li> </ul> <p>Location: Prioritized watersheds include: 1. Chiriqui, 2. Chiriqui Viejo, 3. Santa Maria, 4. Tonosi, 5. La Villa, 6. Rio Grande, 7. Tabasará, 8. Parita, 9. Chucunaque.</p>	<p>a number of relevant outputs, mainly in terms of tools and information, which will be extremely useful for the proposed AF project's Outcomes 1, 2 and 3.</p>
<p>Towards the Integrated Management of Transboundary Water Resources (IWRM) in the Binational Watershed of the Sixaola River</p> <p>Funder &amp; grant: Resources from GEF Trust Fund, \$4.3M</p>	<p>The Sixaola River Binational Watershed is located in Talamanca, Limón, Costa Rica, and in Changuinola, Bocas del Toro, Panama. Most of its population -11,000 people- is indigenous, belonging to 4 nations: Ngäbe, Naso, Bribri and Cabécar. The watershed has exceptional biodiversity and water resources, but is at serious environmental risk from human pressure.</p> <p>The project will invest \$4.3 million to improve watershed governance and water management, as well as build local capacity for more sustainable production.</p>	<ul style="list-style-type: none"> <li>● Pilot projects in: a) sustainable banana and plantain production with improved agroforestry practices, b) riverbank restoration, and c) a dialogue platform.</li> <li>● Early Warning System (EWS) for communities and local organizations to respond to flood risks on the Sixaola River margin.</li> </ul>	<p>The geographic area of the proposed AF project is much larger than the scope of the Sixaola watershed. The proposed AF project could benefit from the Sixaola's sustainable production and riverbank restoration practices for their potential implementation outside the watershed, through Outcomes 2 and 3. The AF project could also share its own NbS with the Sixaola project.</p> <p>Of special interest for the proposed AF project, specifically for its Outcome 1 is the Sixaola's EWS: the results of that experience will be a relevant input for its own DRR approach.</p>



Relevant projects and initiatives	Description of project/initiative	Relevant results for the proposed project	Potential Complementarity
<p>Timeline: 2022-2025</p> <p>Regional Panama-Costa Rica</p>	<p>The government partners are MIDEPLAN and MINAE of Costa Rica; and MEF and MIAMBIENTE of Panama. Funding is provided by GEF, and it is implemented by UNDP and executed by Organization for Tropical Studies (OTS).</p>	<ul style="list-style-type: none"> <li>• Knowledge management, with a platform with accessible content in indigenous languages.</li> <li>• The project includes a gender perspective with concrete actions to promote gender equality and women empowerment.</li> </ul> <p>Location: Binational Watershed of the Sixaola River, between Limón (CR) and Bocas del Toro (Pan)</p>	<p>The AF project seeks to share information and knowledge with indigenous communities in their own languages, which opens opportunities to join efforts and share experiences with the Sixaola project.</p> <p>Both projects share an interest in gender equity and women's empowerment, so there are opportunities to share information, experiences and approaches.</p>
<p>ADAPTA2+</p> <p>Funder &amp; grant: Adaptation Fund (AF), \$10M.</p> <p>Timeline: 2015-2023</p>	<p>The aim is to reduce the vulnerability of communities to the impact of climate change and enhance resilience in critical sectors: agriculture, water resources and coastal areas, capacity building.</p>	<p>Production systems improved in farms with NbS, increasing productivity and profitability; community aqueducts strengthened; democratization of knowledge through disseminating materials on climate change adaptation.</p> <p>Location: The project was implemented all over the country; of particular interest are activities and results in the Huetar Caribbean Region</p>	<p>Relevant to Outcome 1: Adapta2+ emphasized on knowledge management and dissemination.</p> <p>Relevant to Outcome 3: Adapta2+ focused on local livelihoods, including agriculture, livestock and fisheries. Good practices and lessons learned will be useful in the context of the proposed project.</p>
<p>Scaling-up ADAPTA2+: "Increasing the resilience of vulnerable populations in Costa Rica"</p>	<p>Scaling-up ADAPTA2+: builds on ADAPTA2+, extending its support from the farm to the Food System. It works with communities and private sector to facilitate access to climate finance and sustainable markets.</p>	<p>Scaling-up ADAPTA2+: 40 nature-based adaptation solutions will be implemented; at least 5 NbS training products</p>	<p>ADAPTA2+ has an inventory of nature-based solutions already tested, which will be scaled-up by its new program. The proposed AF binational project Bocas del Toro- Limon will benefit from this previous experience in the design of its own proposed NbS,</p>

Relevant projects and initiatives	Description of project/initiative	Relevant results for the proposed project	Potential Complementarity
<p>Funder &amp; grant: Adaptation Fund (AF), \$10M.</p> <p>Timeline: 2023-2026</p> <p>Costa Rica</p>	<p>While Adapta2+ focused mainly on the individual and farm levels validating and providing technical solutions, the scaled-up program focuses on the value chain, reinforcing local markets.</p>	<p>will be created and disseminated.</p> <p>Location: The project will be implemented all over the country; of particular interest are activities in the Huetar Caribbean Region</p>	<p>particularly Outcome 2 (NbS) and Outcome 3 (good livelihood practices).</p> <p>To avoid duplication, the project will work with implementing entities (IE) and vulnerable populations that are not covered by ADAPTA2+.</p>
<p>Tourism business incubator for indigenous territories (Part of BIOFIN Costa Rica: Finance for Biodiversity)</p> <p>Funder &amp; grant: National Business Development Fund (FONADE) of Costa Rica's Development Banking System, \$185K</p> <p>Timeline: 2022-2023</p> <p>Costa Rica</p>	<p>To promote and support the development of livelihoods that respect and protect nature, the United Nations Development Program (UNDP) together with the Development Banking System (SBD) and the Costa Rican Tourism Institute (ICT) launched RAÍCES, an incubation program focused exclusively on the generation and consolidation of indigenous tourism enterprises.</p> <p>Through initiatives like this, BIOFIN responds to the need to divert more finance from all possible sources towards global and national biodiversity goals. BIOFIN aims to mobilize resources so that Costa Rica increases and makes more effective investments in conservation, sustainable use and equitable distribution of the benefits from ecosystems and biodiversity.</p>	<p>One of the proposed solutions is "Tourism business incubator for indigenous territories": it seeks to support entrepreneurship, businesses and resilience in sustainable tourism led by rural communities, women and indigenous peoples in Biological Corridors and buffer zones of Protected Areas.</p> <p>Location: Costa Rica's formally recognized Indigenous territories.</p>	<p>The proposed project's Outcome 3 expects "improved strategies for the private and microfinance sectors to support the implementation of nature-based adaptation solutions by local livelihoods".</p> <p>There is an opportunity to create synergy between the "tourism business incubator for indigenous territories" and the proposed project's implementation of Nature-Based Solutions with vulnerable populations.</p> <p>BIOFIN can also support the project to strengthen its activities and planning for improving gender impact and approach, as well as indigenous participation.</p>
<p>Plan A</p> <p>Funder &amp; grant: Green Climate Fund, \$2.8M.</p> <p>Timeline: 2019-2022</p> <p>Costa Rica</p>	<p>Plan A aims to build sustainable country capacity in identifying, prioritizing, planning and implementing measures that address local adaptation needs. The ultimate objective is to reduce the country's vulnerability to the impacts of climate change and variability, by building adaptive capacity and resilience through the integration of adaptation into regional and municipal planning, including government entities, the private sector, and civil society.</p>	<ul style="list-style-type: none"> <li>● Strengthen institutional capacity in the Huetar Caribe Region for the integration of climate change adaptation actions in the planning mechanisms.</li> <li>● Strengthen the capacity of the cantons of Pococí,</li> </ul>	<p>The project concept design has benefited from knowledge and information generated by Plan A on the Huetar Caribe region, including: socioeconomic characteristics, current climate and future scenarios, regional climate risk, priorities for adaptation to climate change, and results of the participatory consultation workshops.</p> <p>Since Plan A focuses on cantonal planning, the AF project does not duplicate efforts. On the contrary, it will complement them with the implementation of</p>

Relevant projects and initiatives	Description of project/initiative	Relevant results for the proposed project	Potential Complementarity
		<p>Siquirres, Matina and Talamanca to effectively integrate climate change adaptation actions into their planning.</p> <p>Location: Huetar Caribe region, which includes Limón</p>	<p>adaptation actions in livelihoods and food chains with vulnerable populations at the local level, especially through Outcome 3. Besides, the AF project will benefit from the capacity created at canton/municipal level to facilitate the implementation of proposed activities.</p>
<p>Scaling-up Ecosystem-based adaptation (EbA) measures in rural Latin America / EbA-LAC</p> <p>Argentina, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala</p> <p>Funder &amp; grant: Funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) through its International Climate Initiative (IKI) and is implemented by the GIZ as lead agency, in partnership with IUCN and CATIE, €20M for the 6 countries.</p> <p>Timeline: 2020-2025</p>	<p>The program seeks to contribute to safeguarding and restoring areas of high conservation value, increasing biodiversity in agricultural production systems, and maintaining ecosystem goods and services, such as water and fertile soil.</p> <ul style="list-style-type: none"> <li>● <b>Up-scaling area:</b> northwestern region of the country, the connectivity zone between Maquenque Reserve, <u>Barra del Colorado Refuge</u>, <u>Tortuguero National Park</u> and Puerto Viejo de Sarapiquí.</li> <li>● <b>Consolidation area:</b> NE of Cordillera Central, the connectivity area between the Juan Castro Blanco and Poás Volcano National Parks and the Paso de las Nubes Biological Corridor.</li> </ul>	<ul style="list-style-type: none"> <li>● Develop and implement proven, innovative and cost-effective EbA approaches in different ecosystems.</li> <li>● Strengthen the capacity of a wide range of actors, including national and local government and civil society organizations, the private sector, service providers and rural communities.</li> <li>● Ensure long-term impact in partner countries through further development of innovative financial instruments and products, improved governance and exchange of knowledge.</li> </ul> <p>Location: connectivity zone between several protected areas in northern and northeastern Costa Rica, including Barra del Colorado Reserve and Tortuguero National Park, within the area of interest of the AP project proposal.</p>	<p>There is an overlap in the connectivity zones of Barra del Colorado and Tortuguero. However, the emphasis of the program is to work on the farm level. This leaves open the opportunity to work on tourism and fisheries and their value chains (Outcome 3). Also, different communities will be selected.</p> <p>The AF project proposal can benefit from the results of the EbA implemented by this program, which could be relevant in other communities in Panama and Costa Rica. These experiences could be beneficial for Outcomes 2 and 3.</p> <p>EbA-LAC's experience with financial instruments and products, as well as the results obtained, could be useful for this AF project (Outcome 3).</p> <p>The knowledge sharing proposed by EbA-LAC could be relevant in the context of Component 1. The project could share its results through its implementing and executing partners, as well as stakeholders.</p>

## **H. LEARNING AND KNOWLEDGE MANAGEMENT**

Knowledge management is cross-cutting to the entire project proposal. Given the importance of the project's impact and long-term sustainability, it is approached as an independent Component 1: "Information and knowledge for decision making on DRR and climate change adaptation". Through this component "strategies, tools and technologies are adopted by national and local institutions to strengthen and enforce adaptation measures". The evolution of the health crisis from COVID-19 towards a new scenario of widespread vaccination, foresees that face-to-face attendance will once again be the norm in information-sharing and stakeholder-training, especially in rural areas.

A first output focuses on climate knowledge and information systems produced and disseminated in Bocas del Toro and Limón (Output 1.1). Existing climate information systems managed by strategic allies in Panama and Costa Rica will be strengthened so that they can compile and share project results with stakeholders: training materials, guides, methodologies, reports, media publications, cost-effectiveness analyses and lessons learned. The needs and constraints of stakeholders are taken into account to ensure that information products respond to their needs and that the means of sharing information are accessible. These materials will be gender-sensitive by using male and female material developers & reviewers; gender-sensitive language and gender-balanced images; convincing gender arguments based on reliable sources and qualitative and quantitative data including sex-disaggregated data. Information management will support the other project components: climate risks will be identified and characterized as a basis for defining and prioritizing NbS and livelihood adaptation measures, in line with Outputs 2.1 and 3.1. This component will also support the operation of meteorological stations in the region as a means of generating key information.

A second Output 1.2 addresses the need of local inhabitants to access early warning information about imminent climate events to prepare accordingly and reduce damages and losses. Early Warning Systems for climate-identified risks will be implemented in Limón and Bocas del Toro, considering the most accessible channels for local communities. To this end, the project will work with strategic actors in Panama and Costa Rica with access to climate information, technologies for its dissemination and capacity to respond to extreme climate events.

A third Output 1.3 focuses on mainstreaming climate change adaptation into terrestrial, watershed and coastal-marine landscape planning and decision-making in Bocas del Toro and Limon. This Output aims to create capacity across national and local agencies, including those in charge of natural resources, tourism, agriculture, fisheries land use planning, and others. Awareness-raising and training activities will be implemented for relevant national and local decision-makers so that authorities in charge of policy, planning and development will have the tools to address climate change. Additionally, annual inter-provincial events will be carried out with authorities from both Panama and Costa Rica for cooperation and exchange of information.

These Outputs and activities will take into account the educational level of the participants, as well as gender, age and even language in the case of indigenous communities. It will also take into account aspects such as access or lack of electricity and Internet.

Monitoring and Evaluation (M&E) will help determine the difference the project is making. Then, learnings can be used by the implementing entity (IE) and executing entities (EE), and stakeholders to improve the project's performance. IE and EE can monitor if activities are on track and if they are reaching target vulnerable populations. It can also help identify what is working well, what is not and why, and what could be done differently. The information can also be systematized and shared with stakeholders, especially critical information to understand their needs, abilities and capacities and information on how the project is affecting them and changing their lives.

## **I. DESCRIPTION OF CONSULTATIVE PROCESS**

### **Binational consultation with stakeholders in Limon and Bocas del Toro, October-December 2022**

Between October and December 2022, a stakeholder consultative process was carried out by UNEP in the area of interest, in close coordination with MINAE and MiAmbiente, in the framework of this project proposal. This process included an online survey (UNEP 2022a) and two workshops, one in Limon (UNEP 2022b) and the other

in Boca del Toro (UNEP 2022c). Detailed results are available online at the following address: [https://drive.google.com/drive/folders/18F5Cp7pFYvIXeFaxq55hgY65\\_IYzkGvC](https://drive.google.com/drive/folders/18F5Cp7pFYvIXeFaxq55hgY65_IYzkGvC).

The binational online survey with local stakeholders was carried out in Limon and Bocas del Toro between October 17 and November 14, 2022 (UNEP 2022a), obtaining a total of 131 responses. A team consisting of officials from MiAmbiente, MINAE, and UNEP drafted a survey for potential stakeholders, to be distributed and applied virtually. The survey included aspects such as gender, type of vulnerable population, types of climate hazards, vulnerability and exposure, damages and losses, and preliminary identification of NbS aligned with this AF project proposal. The survey included an introduction with a brief explanation of its purpose. Then, the survey was distributed through allied institutions and organizations, for example, Costa Rica's National System of Conservation Areas (SINAC), La Amistad Caribe Conservation Area (ACLAC), Costa Rica's National Meteorological Institute (IMN), the EbA LAC Project, the Upper Reventazon River Basin Management and Management Commission (COMCURE), the Dejando Huella Association, Fundecooperación, and others. These stakeholders, in turn, distributed the survey among organizations and individuals in the project's target territory. The tool was also distributed in Panama through MiAmbiente and allied institutions and organizations.

Respondent characteristics: Thirty-seven percent of the people surveyed are from Bocas del Toro, while 63% are from Limón. 56% of respondents are women and 44% are men. Twenty-four percent of the respondents are between 18 and 34 years of age, 41% between 35 and 49 years of age, 31% between 50 and 65 years of age, and 4% over 65 years of age. Cultural or ethnic identity: Thirty-one percent of the people interviewed consider themselves indigenous, 25% white, 21% mestizo, 17% Afro-descendant, 2% mulatto, 1% Chinese, and the rest do not identify with any category. Of the total indigenous people, 48% are Ngäbe, 26% Bribri, 17% Cabecar, 7% Naso and 2% Buglé. Main occupation: Thirty-one percent of respondents work in agriculture/livestock, 15% in tourism, 2% combine agriculture and tourism, 4% are engaged in fishing, 11% in commerce and services, 8% in domestic work, 7% are public servants, 3% work in education, 3% are students, 9% are engaged in other activities, and 7% are unemployed or work occasionally. Changes observed in climate in the last 10 years: Nineteen percent of survey respondents have noticed a great increase in rainfall, while 34% noticed a reduction in rainfall, 56% noted that now it is much hotter, 15% report high water scarcity due to drought, plus 15% that notice frequent water shortages. In relation to sea level rise, 59% report loss of shoreline and beach erosion in the last 10 years, 21% report damage to buildings and constructions, 17% report relocation of structures, and 9% report loss of docks and piers. Exposure: Fifty-seven percent of the people interviewed live in communities near rivers or streams, 22% live near the coast, 26% near crops, 19% on a hill or mountain, 4% in a landslide area, 8% on a coastal bar and 21% in an urban area. The data are not cumulative because it was possible to answer more than one option. Damages and losses: Regarding damages and losses suffered by households due to climatic events, 26% of the people surveyed report a reduction in their land or properties, 21% report damage to their homes, 18% report loss of furniture or appliances, 16% report other losses such as clothing and books (non-cumulative numbers), and 6% report injuries or damage to health. In terms of damages and losses suffered by the community as a whole, 69% report damage to highways, roads and bridges, 66% report loss of crops, 47% report closure of public services such as water, electricity, telecommunications, schools, and health centers; 34% report loss of animals, and 24% report loss of forests, mangroves, coral reefs or wildlife (non-cumulative numbers). Vulnerability: People affected by climate events were asked how they would get money to replace their losses. Thirty-four percent would use their own savings, 15% would ask relatives for help, 18% would request a loan from a cooperative or bank, and 33% of respondents do not have a plan. Concerning the difficulty in reaching health services from their homes (clinics, pharmacies), 39% consider it very easy, while the remaining 61% face some degree of difficulty. Regarding the quality of primary and secondary education in their communities, 52% of respondents rate education as fair, 37% rate it as good or very good, and only 11% as bad or very bad. On the availability of environmental education and climate action programs in their communities, 46% do not know of any plan, 40% do know them and have participated, and 14% know of their existence but have not participated. Nature-based solutions and good livelihood practices: Participants recognize some NbS or good climate practices in their communities: 45% mention protection of rivers and streams, 40% sustainable agriculture practices, 39% forest restoration, 37% wildlife protection, 35% sustainable tourism practices, 18% drainage for flood prevention, 14% good fishing practices and 13% rehabilitation of mangroves or coral reefs (non-cumulative numbers). Differences between sexes: It is interesting to note key differences between the responses of women and men. While 67% of women report that it is much hotter now, only 43% of men say so.

This seems to indicate that women tend to be more affected by the heat. As for water scarcity, while 40% of women report this problem, only 19% of men do, indicating that women tend to notice water shortages more, possibly due to their responsibilities at home. As for how to cope with damage and losses due to hydrometeorological events, while 40% of women indicate that they do not have a plan to deal with such emergencies, only 24% of men say they do not have a plan. This seems to show that more women than men are less prepared and more vulnerable to the impacts of climate events. To the option of requesting a loan from a bank or cooperative to cope with emergencies, while 28% of men would consider this option, only 11% of women would. This could indicate that women have less access to credit or are less likely/willing to get into debt.

The two in-person workshops took place on December 15, 2022 in the city of Limon (UNEP 2022b), and on December 16 in Chiriqui Grande, Bocas del Toro (UNEP 2022c). The two workshops had a combined participation of 50 people, 22 women and 28 men. There were 22 participants from the public sector, 18 from local organizations, six producers and students, and the rest from the UNEP team. As a result, participants identified the following aspects: Proposed landscapes and ecosystems: Participants identified priority landscapes for the project, including watersheds, coastal communities, beaches, islands, wetlands, mangroves, coral reefs and forests. Risks to which landscapes and ecosystems are vulnerable: Participants included climate risks to which each type of landscape or ecosystem is vulnerable, including flooding, landslides, drought, sea level rise, coastal erosion, coastal flooding, saline intrusion, and sea temperature rise. Main vulnerability factors: Inhabitants and livelihoods too close to rivers and coasts, deforestation, poor tourism management, poor agricultural practices, poor soil management, chemical contamination, poor solid waste management, extraction of natural materials (such as wood, sand, stone) and lack of public services (electricity, water, internet). Main damages and losses: Reduction of biodiversity, deterioration of ecosystems (forests, coral reefs), reduction of habitat for flora and fauna, reduction of coastal protection barriers, loss of scenic beauty, damages to homes, losses in agriculture, livestock and fisheries, soil deterioration, reduction of fishing sites, water scarcity, loss of income from tourism, and increased costs including replacement of lost assets. Vulnerable stakeholders and impacts from climate change and climate variability: The most frequently mentioned vulnerable stakeholders include inhabitants along watersheds, coastal and island dwellers, producers, women, youth, and indigenous people. The impacts of climate events on these vulnerable populations mentioned in the workshops include: reduction of producers' income, reduction of family income, reduction of women's income, unemployment among women and youth, higher production/consumption costs, difficult access to food and nutrition, increased insecurity among women, school dropouts and migration of young people. Barriers to disseminating knowledge and adaptation information: dispersed population, limited access to cell phones and poor signal in many rural areas and on islands, language barriers, especially among indigenous populations. Opportunities for disseminating knowledge and adaptation information: use local radio stations; differentiate information for men and women, as well as for people from indigenous, Afro-Caribbean, and other communities; take advantage of the ancestral knowledge of indigenous and Afro-Caribbean peoples; take advantage of the close relationship that women have with the forest and their awareness of how climate change affects them.

Additionally, the survey and workshops made it possible to identify communities and ecosystems of interest for the AF proposal. They also made it possible to identify diverse institutions and organizations working in the territory which could play a role in the execution of activities with the beneficiaries. In the final definition of executing institutions and organizations, as well as their implementing staff, the program should strive to achieve a gender balance. Involving gender experts will be also necessary. During the formulation of the Fully Developed Proposal, UNEP will carry out wider community surveys to establish the detailed ecosystem-based adaptation strategy in each community, the risk management plan, the baselines for the key project indicators and project targets.

### **Consultation processes in Limón, Costa Rica**

**Consultation and iteration process for the development of "Maps of priority ecosystems for planning adaptation to climate change" (MINAE 2021)**: Between 2019 and 2021, Costa Rica created a series of maps that identify the main areas requiring protection, restoration, and sustainable management in order to preserve ecosystem services and increase climate resilience. The methodology used was "Essential Life Support Areas" (ELSA), developed by UNDP and the University of Northern British Columbia. These maps have three adaptation objectives: 1) reduce human vulnerability to climatic phenomena, 2) ensure ecosystem services for people and

their activities, and 3) promote the adaptation of ecosystems to climate change. In 2019 and 2020, Costa Rica developed the first iterations of the ELSA maps. In August 2021, the project partners -UNDP, MINAE and PRIAS Laboratory- worked on the third iteration, with the aim of generating inputs for the 2022-2026 National Adaptation Plan (NAP). A virtual workshop was attended by representatives from MINAE, UNDP, Ministry of Agriculture and Livestock (MAG), Ministry of Housing and Human Settlements (MIVAH), National Center for High Technology (CENAT), University of Costa Rica's School of Geography, UNEP, GIZ, Forever Costa Rica Association, Fundecooperación, National Emergency Commission (CNE), National Forestry Fund (FONAFIFO), and National System of Conservation areas (SINAC). Participants concluded that: 1) The maps can guide community-based adaptation measures and enable proper climate risk management. 2) The maps can be used at different scales: region, province or conservation area. 3) They can be used for data-based land use planning, and to support decision-making. 4) The maps can be used to define areas of interest in cooperation projects and to select areas for landscape recovery and sustainable production. 5) They can guide and prioritize the planning/transformation of the agricultural sector, with management and restoration practices. In the preparation of this AF project proposal, this process and its results are being useful to help identify priority areas for protection, restoration and sustainable management in the Huetar Norte region. The consultations carried out by this process with institutional and organizational actors have also been key to this identification.

**Regional Action Plan for Adaptation to Climate Change in the Huetar Caribe Region 2022-2026 (DCC-MINAE, MIDEPLAN. 2021):** The creation of the Regional Action Plan was led by the Climate Change Directorate (DCC) of the Ministry of Environment and Energy (MINAE), the Ministry of National Planning and Economic Policy (MIDEPLAN) and the United Nations Environment Program (UNEP), with the support of the Tropical Science Center (CST). Between September and December 2020, the CST carried out two participatory workshops in the region, with the participation of 27 people in the first workshop and 19 people in the second one, of which 40% were women. Participants included representatives of indigenous organizations (Bribri, Cabécar and Guaymí), indigenous women and Afro-descendant women. The workshops shared information regarding the region's climate hazards: temperature increase, rainfall variation and droughts, floods and landslides, and sea level rise. The impacts were also discussed: loss of infrastructure and tourism services, loss of crops and livestock production, loss of coastal and terrestrial ecosystems, and interruption of services. Participants also discussed vulnerability conditions: coastal communities at low elevation above sea level, limited employment options, dependence of tourism on the natural capital, greater difficulty for women to access training and financing for entrepreneurship, illegal constructions along the coastal belt or zone (ZMT), highly fragmented landscape, tourism infrastructure and services not adapted to climatic conditions, few productive linkages, unsustainable agricultural practices, use of genetic varieties not adapted to the climate, and lack of knowledge in irrigation management. These workshops made it possible to identify vulnerable populations, talk to their representatives, and identify relevant issues in the context of the proposal to the AF.

### **Consultation processes in Bocas del Toro, Panamá**

**Informed consultation process “Preparation of Pre-Concept Note for project proposal to the Adaptation Fund”:** In June 2021, as part of the preparation of the pre-concept, a consultation process was carried out in Bocas del Toro that included representatives of local organizations and public entities. A total of 36 people were interviewed, including 26 men and 10 women, representing Oreba Organization, Salt Creek Community, the Ministry of Agricultural Development (MIDA), Ministry of Health, Ministry of Environment (MiAmbiente), Panama Tourism Authority (ATP), Municipalities of Almirante, Changuinola, Chiriqui Grande, and Bocas del Toro. The main climate events mentioned were: sea level rise, irregularity between the dry and rainy seasons, and extreme rainfall. The main impacts caused by those events include: loss of mangroves, decrease in Orey populations (type of tree found behind mangroves), impact on artisanal fishing, variation in the coastline, erosion of beaches and increased difficulties in accessing some places, affectation of piers and other coastal works, and many overwater constructions have gone from 3 to 7-foot pilings. Other impacts include numerous landslides and increasing flooding events from extreme rainfall. Additionally, tour operations are affected by changes in weather patterns. The information provided by the people interviewed also made it possible to identify factors that increase stakeholders' vulnerability to climate change:

- To date, potential land uses in Bocas del Toro have not been technically defined.
- A large part of the population is engaged in subsistence fishing and agriculture.



- Fishing practices are not sustainable.
- High dependence on tourism to generate local income.
- The COVID-19 pandemic contracted tourism demand in Bocas del Toro.
- Besides beaches, the province's tourism attractions are not sufficiently publicized.
- Women working in tourism have difficulties getting financing.
- The pandemic also affected demand for some agricultural products such as cocoa.
- Water service in several communities is not constant 24 hours a day.

The interviews also identified opportunities to increase resilience of local livelihoods in the context of the proposed AF project:

- Work is underway on a provincial Land Management Plan that should include land uses.
- There is local experience in tourism initiatives involving lodging, gastronomy and cultural, boat and nature tours.
- There are opportunities to strengthen linkages between agriculture, fisheries and tourism.
- Bocas del Toro has great potential to develop agritourist circuits around coffee, fruits, cocoa and coconut.
- The local production and commercialization of coconut oil should be supported.
- Aquaculture activities with organized fishers should be encouraged.
- There is a need to define climate risk parameters.
- Education to raise awareness among local inhabitants and tourists should be promoted.

## **J. JUSTIFICATION FOR FUNDING REQUESTED**

The increase in temperatures, rainfall variation (IMN 2021; MiAMBIENTE 2022) and the frequency and intensity of extreme hydrometeorological events from climate change (IMN-PNUD 2021) are adding pressure on local livelihoods, specifically agriculture, livestock, fishing, and tourism. Also, the COVID-19 crisis evidenced the fragility of tourism in terms of business continuity, employment, income, and well-being at community and family levels. In addition, the deterioration of watersheds and coastal-marine ecosystems such as mangroves, coral reefs and beaches increases vulnerability to risks: flooding, landslides, drought, and sea level rise.

The increase in intensity of hydrometeorological phenomena due to climate change is evident, as well as the growth of vulnerability and accumulated damages and losses. It is estimated that between 1998 and 2018, Limón had \$500 million in losses from the impact of extreme hydrometeorological events. The 2008 drought alone meant a loss of 4 million boxes of bananas and US\$26 million for the banana activity in Limón. Also in 2008, the estimated investment for the reconstruction of the landslide-affected sections of the Rambala (Bocas del Toro)-Gualaca (Chiriquí) highway was US\$25 million. Without the implementation of actions promoted by this AF project proposal, it is expected that local livelihoods will continue to suffer from: damages and deaths from flooding and landslides, infrastructure deterioration, business disruption, reduction of water availability, losses due to lower crop, livestock, and fishery yields, multiplication of vectors and disease spread, increase in production costs, reduction in profits and deterioration of the population's wellbeing.

The AF proposed project addresses the main economic, social and environmental needs, root causes, and vulnerabilities to climate change described in PART 1. The NbS needed to realize a paradigm shift in watershed, coastal and landscape management in Bocas del Toro and Limón involve changing from current livelihood practices to more sustainable productive practices for climate resilience. Consequently, the project will have to take particular care of ensuring incentives and benefits for vulnerable populations and stakeholders. Given the complexities involved and the desirable long-term and permanent nature of the paradigm shift, the needs are not only access to financing, but also to clearly identified NbS and practices, training, technical assistance, local planning and business management, information products and resources, financial strategies, and political and institutional support. The public budgets provided by the governments of Panama and Costa Rica to the provinces of Bocas del Toro and Limón are realistically insufficient for a complex climate ambition such as that proposed by this project proposal to the Adaptation Fund. To this must be added the enormous cost of potential climate risks and the damages and losses resulting from them.

The funds requested by Costa Rica and Panama from the Adaptation Fund will enable the design of a NbS

portfolio that responds to the characteristics and needs of the region, as well as the implementation of pilot initiatives (Component 1). These resources will also enable the promotion of technical standards and climate adaptation practices to strengthen livelihoods in the face of climate risks, specifically agriculture, fisheries and tourism. It will also enable the design of financial strategies to support the transition to climate-resilient local livelihoods (Component 2). Finally, the project will improve climate information and the exchange of data and experiences between Panama and Costa Rica (Component 3).

## **K. SUSTAINABILITY OF PROJECT OUTCOMES**

Lessons learned from other adaptation projects in Latin America implemented by UNEP, to be gathered during project formulation phase, will help refine the project approach, identifying the key factors to the success of NbS and adaptation projects in securing sustainability. For example, the CityAdapt project in Jamaica, El Salvador and Mexico (financed by GEF and executed by UNEP with the support of Euroclima+) showed that critical success factors were the early institutionalization of climate action into formal sets of actors and targets; the initial push by the national and state governments to develop climate policies; the maintenance of political will and ambition across successive governments; the continued technical capacity-building of members of government; the development of partnerships between municipal authorities and the national government; high levels of participation in international initiatives; and the creation of opportunities for public participation. At concept stage, the sustainability of the project will be achieved as follows:

**Component 1 “Information and knowledge for decision-making on DRR and climate change adaptation”** will improve decision-making as well as local planning and business management. A better understanding of climate risks and impacts associated with flooding, landslides, drought, sea level rise, coastal erosion, and others derived from climate change and climate variability will allow stakeholders to make informed decisions regarding land use, planning, sustainable management of local livelihoods, business continuity during hydro-meteorological events, readiness, effective disaster response, binational coordination, and others.

For **Component 2 “Nature-based Solutions for DRR and climate change adaptation”**, the project will engage with stakeholders across selected communities and organizations in order to choose the most relevant and financially viable NbS to be implemented in watersheds, marine-coastal areas, protected areas and others through pilot projects to generate practical experience and knowledge. The active participation of stakeholders in the selection, design and implementation of pilot experiences will allow them to take ownership of these NbS and even scale them beyond the life of the project.

For **Component 3 “Strengthening livelihoods and value chains for DRR and climate change resilience”**, the strengthening of nature-based, climate resilient livelihoods in tourism, agriculture, and fisheries, their value chains and local markets will also involve active consultation with and participation of local associations, communities, farmers, fishers, tourism entrepreneurs, women and youths. Stakeholder involvement will be guaranteed by ensuring an adequate representation of women, youths, afro descendants, indigenous population, and other vulnerable or marginalized populations at all stages, including consultations for project formulation, and capacity building during implementation. The benefits of Component 3 are expected to include greater resilience to climate events, reduced damages and losses, business continuity, greater profitability and lower costs. These benefits will contribute to the consolidation of nature-based good productive practices, which will convince other stakeholders to replicate them, thus contributing to the sustainability of the project outcomes.

The project also considers a reasonable duration to ensure enough time for a sense of ownership to be developed through stakeholder engagement, and active participation in all processes. Another key issue is ensuring that NbS are financially viable for stakeholders, that their benefits are clear, and that the investment risk for the transition is shared.

## **L. OVERVIEW OF RELEVANT ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS**

The proposed project adheres to ensuring that all safeguards are in place so that executed activities do not exacerbate environmental degradation, or human and labor rights violations. The project is designed to comply with all legal, environmental and social systems requirements. Also, the vast social and environmental legislation of Panama and Costa Rica provides for environmental protection, access to human rights, gender and equitable access to resources. During implementation of project activities, UNEP will request EE to monitor potential

environmental and social impacts, and to respond with mitigation measures. Impact monitoring will record, monitor and control the occurrence of both expected and unexpected impacts and implement corrective action as appropriate. The following table provides an overview of the environmental and social impacts and risks identified as being relevant to the project:

Table 9. Relevant environmental and social impacts and risks

Environmental and social principles	No further assessment for compliance	Impacts and risks: further assessment and management for compliance
Compliance with the Law	Maybe	<p>When focusing on the tourism, agricultural, and fishing sectors, there is a risk of working with stakeholders who do not comply with the countries' legislation, due to non-formality in some productive activities. For example:</p> <p>COSTA RICA: many fishers do not have the corresponding license granted by INCOPECA. There are also agricultural producers that are not registered as Small and Medium-Sized Agricultural Producers. Also, businesses may not report their workers and employees with the Costa Rican Social Security Fund.</p> <p>PANAMA: communities and families with subsistence livelihoods predominate in rural and coastal areas. Although artisanal fishing is a source of local income, it is also responsible for environmental conflicts.</p> <p>The project will offer accompaniment to stakeholders to promote formalization and help them comply with the corresponding legal requirements. NbS will reduce environmental violations while contributing to ecosystem conservation and sustainable use.</p>
Access and Equity	No	<p>The project aims to benefit vulnerable populations including indigenous communities, Afro-Caribbean people, small tourism entrepreneurs, farmers and fishers, women, especially heads of households, as well as youths. The project aims to provide fair and equitable access to NbS and their benefits, including training options, access to information, exchange of experiences, and others. Opportunities to increase the participation of these vulnerable populations in the project will be identified and implemented with the support of the EE.</p>
Marginalized and Vulnerable Groups	Maybe	<p>Marginalized and vulnerable groups may include women and girls, children, the elderly, people living with disabilities, dependent family members, indigenous people, and non-formal fishers and farmers. Poverty, informality, unemployment, low schooling and geographic location in remote areas could make it difficult for these vulnerable groups to actively participate in the project's activities. The IE will choose EE with demonstrated experience working with marginalized and vulnerable groups and capacity to work in remote rural, coastal and indigenous communities.</p>
Human Rights	No	<p>No activities are proposed that could present a risk of non-compliance with either national requirements relating to Human Rights or with International Human Rights Laws and Conventions. Rather, the project will support and promote respect for human rights as an integral part of its implementation.</p>
Gender Equality and Women's Empowerment	No	<p>Women tend to be at a disadvantage when it comes to training, technical assistance, entrepreneurship and other opportunities. For example, participants in the consultation workshops indicated that women have greater difficulty obtaining agricultural permits, as land is</p>

Environmental and social principles	No further assessment for compliance	Impacts and risks: further assessment and management for compliance
		<p>commonly registered in the name of fathers, brothers, or husbands. The full proposal will be designed to be gender responsive and transformative. It will choose EE with experience working with both women and men, with concrete results in the empowerment of women. This proposal incorporates the gender instruments of each country:</p> <p>COSTA RICA:</p> <ul style="list-style-type: none"> <li>• The 2018-2030 National Policy for Effective Equality between Women and Men in Costa Rica (PIEG).</li> <li>• The Gender Equality Policy for inclusive development in the Costa Rican agricultural, fishing and rural sector 2020-2030 and its Action Plan (MAG-SEPSA 2020).</li> <li>• The Climate Change Directorate’s gender assessment in the context of Project Plan A (DCC 2021).</li> </ul> <p>PANAMA:</p> <ul style="list-style-type: none"> <li>• National Gender and Climate Change Plan (MiAmbiente 2021): its general objective is to provide the basic concepts regarding gender equality and its importance for the conservation of natural resources and the environment.</li> <li>• Blue Gender Gap Analysis in Panama: this is current process which is generating knowledge and understanding of gender gaps in coastal activities, in order to design an action plan.</li> </ul>
Core Labor Rights	Maybe	<p>Given the sectors served by the project (tourism, agriculture, fishing), finding irregularities with workers’ rights might be possible among migrant populations, indigenous people, tourism employees, fishers, farmworkers, women, children, and others. Accompaniment and training for project participants involved in local livelihoods will include contents related to formalization, respect for human rights, occupational health and safety and compliance with core labor standards by the ILO and by each country’s labor legislation.</p>
Indigenous Peoples	No	<p>The project is consistent with the United Nations Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples. The project management will also require the authorization and prior informed consent of the legitimate authorities representing the indigenous peoples/territories. The design and execution of the project’s activities will take into account indigenous culture, beliefs, specific characteristics, vulnerabilities and strengths. In those cases where language may be a limitation, cultural intermediaries will be involved.</p>
Involuntary Resettlement	No	<p>The project’s components do not involve activities potentially leading to involuntary, physical or economic resettlement of any people settled in or using the area of influence of the project.</p>
Protection of Natural Habitats	Maybe	<p>In terms of ecosystem impacts caused by project activities, the project will prioritize avoidance before other approaches (impact minimization, restoration, or offset). Some tourism, agricultural, or fishing activities taking place near ecosystems or protected areas might have some effect on natural habitats and wildlife. The project will promote the integration of good, legally-sound practices and Nature-based Solutions in those</p>

Environmental and social principles	No further assessment for compliance	Impacts and risks: further assessment and management for compliance
		livelihoods, thus using natural habitats sustainably, while contributing to their conservation.
Conservation of Biological Diversity	No	Biodiversity is an integral part of the natural capital of tourism, agriculture and fisheries. The recommended good practices and NbS will contribute to strengthening the conservation and sustainable use of biodiversity, including land and coastal-marine ecosystems. Tourism will make responsible use of biological attractions, promoting their enjoyment and conservation. Good agricultural practices will enhance soil conservation including its biological diversity. Even an extractive activity such as fishing relies on the conservation of ecosystems that are strategic for the reproduction of species of commercial interest. The project will avoid the use of any potentially invasive species in the implementation of NbS.
Climate Change	No	The project contributes to the reduction of Greenhouse Gas (GHG) emissions. For example, in tourism activities, non-polluting means of transportation such as hiking, horseback riding, and cycling will be encouraged. In agriculture, the use of bio-inputs and the reduction of chemical fertilizers that emit GHGs will be promoted. Support for local value chains will contribute to reducing the distance between producers and consumers in the framework of the “zero kilometer” approach. It is possible that some project activities involving transportation and construction won’t be able to avoid some carbon emissions. Circular economy measures will be considered to reduce transportation and favor low-carbon designs and materials.
Pollution Prevention and Resource Efficiency	Maybe	Project-supported livelihoods could generate solid waste that, if not managed properly, could become garbage. More local agricultural production could lead to more biomass residues. Constructions (storage facilities, collection centers, hotels, others) could also generate waste and poor management of sewage. An increase of tourism visitation could lead to more consumption and more waste. The project proposes to apply circular economy principles including the reuse of secondary materials and low-carbon designs and materials to minimize pollution and maximize resource efficiency. Recommended climate practices for local tourism businesses include waste management, recycling, reuse, reduction of food waste, composting, etc.
Public Health	No	The evolution of the health crisis from COVID-19 towards a new scenario of widespread vaccination, foresees that face-to-face attendance will once again be the norm. Project activities such as field trips, interviews, workshops, training, and others will implement the guidelines dictated by the national health authorities in each country. EE will be kept informed and up to date with respect to such guidelines.
Physical and Cultural Heritage	Maybe	Panama and Costa Rica share a UNESCO World Heritage site, the “Talamanca-La Amistad Cordillera Reserves / La Amistad International Park”. Most of this region is covered by tropical cloud forest and rainforest, and is inhabited by several indigenous communities. Conservation of the site is the subject of close cooperation between Costa Rica and Panama. There are also Afro-Caribbean communities, mostly along the coast, where project activities will be carried out. No proposed outcome, output or activity involve adverse impacts to sites, structures or objects with historical, cultural, artistic, traditional or

Environmental and social principles	No further assessment for compliance	Impacts and risks: further assessment and management for compliance
		religious values or to intangible forms of cultural heritage (e. g. knowledge, innovations, practices). Measures will be taken to avoid potential risks of damaging or altering the cultural heritage of these populations.
Lands and Soil Conservation	No	The program includes the implementation of Nature-based Solutions in the livelihoods and value chains, and no risk to land and soil have been identified. On the contrary, solutions for soil conservation are included, such as soil restoration practices and the use of bio-inputs, which will reduce erosion, protect soil biodiversity, increase productivity, and reduce GHG emissions.

In case of a grievance, the project will design and make available and accessible a complaint mechanism at any time to all groups involved or by anyone willing to file a complaint linked to the project's activities. Information on the functioning of the mechanism will be widely disseminated among EE, beneficiaries, organizations and communities that may be impacted by project activities. Special attention will be made to formally communicate the grievance mechanism in place and to generate local capacities to guarantee that key executing entities and stakeholders are aware of potential social and environmental impacts and strengthen their skills in the appropriate monitoring and social and environmental compliance.

## PART III: IMPLEMENTATION ARRANGEMENTS

Table 10. Project alignment with the Results Framework of the Adaptation Fund: Outcomes

Project Objectives	Objective Indicators	AF Outcome	AF Outcome Indicator	Grant Amount (USD)
1) Strengthen decision making and adaptation measures in a changing climate context through increased access to and use of knowledge and information by key stakeholders.	- No. of government institutions integrating climate information and knowledge into long-term planning and decision-making for Limon and Bocas del Toro.	AF Outcome 1: Reduced exposure to climate-related hazards and threats	- Indicator 1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	2.0M
		AF Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	- Indicator 2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	
		AF Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level.	- Indicator 3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	
2) Implement pilot cost-effective Nature-based Solutions for DRR and climate change adaptation in terrestrial, watershed, coastal-marine ecosystems and protected areas in Bocas del Toro and	- No. of actors adopting the proven NbS pilot approaches in new (non-pilot) areas or scaling them up	AF Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	- Indicator 5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	4.0M

Project Objectives	Objective Indicators	AF Outcome	AF Outcome Indicator	Grant Amount (USD)
Limón.				
3) Enhance the coping capacity of local livelihoods and value chains (including tourism, agriculture and fishing) and their access to financial strategies to support adaptation processes.	- Evidence of the demonstrated application of new capacities by targeted actors	AF Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	- Indicator 6.1 Percentage of households and communities having more secure access to livelihood assets - Indicator 6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	4.0M

Table 11. Project alignment with the Results Framework of the Adaptation Fund: Outputs

Project Outcomes	Outcome Indicators	AF Output	AF Output Indicator	Amount (USD)
1. Strategies, tools and technologies are adopted by national and local institutions and organizations to strengthen and enforce adaptation measures.	<ul style="list-style-type: none"> <li>- No. of government institutions integrating climate information and knowledge into long-term planning and decision-making for Limon and Bocas del Toro.</li> <li>- No. of thematic reforms supporting adaptation and DRR priorities in Limon and Bocas del Toro</li> </ul>	AF Output 1.1 Risk and vulnerability assessments conducted and updated	<ul style="list-style-type: none"> <li>- Indicator 1.1. No. of projects that conduct and update risk and vulnerability assessments (by sector and scale)</li> <li>- Indicator 1.2. No. of early warning systems (by scale) and No. of beneficiaries covered</li> </ul>	2.0M
		AF Output 2.1: Strengthened capacity of national and sub-national centers and networks to respond rapidly to extreme weather events	<ul style="list-style-type: none"> <li>- Indicator 2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)</li> <li>- Indicator 2.1.2. No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (type, sector)</li> </ul>	
		Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	<ul style="list-style-type: none"> <li>- Indicator 3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders</li> </ul>	
2. Regional, national and local institutions are upscaling and replicating NbS for vulnerability reduction and DRR in the territory and its ecosystems.	<ul style="list-style-type: none"> <li>- No. of people/households benefitting from adaptation measures.</li> <li>- No. of actors adopting the proven NbS pilot approaches in new (non-pilot) areas or scaling them up</li> <li>- No. of new sites applying NbS not (fully) funded by the project</li> </ul>	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	<ul style="list-style-type: none"> <li>- Indicator 5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)</li> </ul>	4.0M
3. Local communities and	<ul style="list-style-type: none"> <li>- No. of people adopting adapted livelihoods.</li> <li>- Amount of new public or</li> </ul>	Output 6: Targeted individual and community livelihood strategies strengthened in relation	<ul style="list-style-type: none"> <li>- Indicator 6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or</li> </ul>	4.0M



Project Outcomes	Outcome Indicators	AF Output	AF Output Indicator	Amount (USD)
<p>stakeholders are integrating adaptation practices in their livelihoods to reduce vulnerability to climate change, addressing differentiated gender needs.</p>	<p>private investment allocated to support adaptation practices in Limon and Bocas del Toro</p> <ul style="list-style-type: none"> <li>- Evidence of the demonstrated application of new capacities by targeted actors (e.g., improved products or services incorporating adaptation practices, or increased linkages or alliances in the livelihood value chain).</li> </ul>	<p>to climate change impacts, including variability</p>	<p>community livelihood strategies</p>	


## PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

**A. Record of endorsement on behalf of the government<sup>10</sup>** *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project/programme. Add more lines as necessary. The endorsement letters should be attached as an annex to the project/programme proposal. Please attach the endorsement letters with this template; add as many participating governments if a regional project/programme:*

<i>Milciades Concepción, Minister of Environment, Ministry of Environment, Panama</i>	<i>Date: December 5, 2022</i>
<i>Ivan Alonso Delgado Pitti, Head of Climate Change Directorate, Ministry of Environment and Energy, Costa Rica</i>	<i>Date: December 13, 2022</i>

<sup>6</sup>. Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

**B. Implementing Entity certification** Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

<p>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 for Costa Rica and Panama and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p>	
<p style="text-align: center;">   <i>Mirey Atallah, Head Nature for Climate Branch</i>                      Implementing Entity Coordinator                 </p>	
<p>Date: <i>December 28, 2023</i></p>	<p>Tel. and email: Mirey.atallah@un.org</p>
<p>Project Contact Person: Jessica Troni</p>	
<p>Tel. And Email: (+254) 795751062 <a href="mailto:jessica.troni@un.org">jessica.troni@un.org</a></p>	



## Letter of Endorsement by Government

December 13, 2022

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

Subject: Endorsement for concept note **“Enhancing the climate resilience of coastal communities in Limon, Costa Rica and Bocas del Toro, Panama through Nature-based Solutions for local livelihoods”**

In my capacity as designated authority for the Adaptation Fund in Costa Rica, I confirm that the above regional project proposal is in accordance with the government’s national and regional priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Environment Programme.

Sincerely,

A handwritten signature in black ink, appearing to read "Ivan Alonso Delgado Pitti".

Ivan Alonso Delgado Pitti  
Head of Climate Change Directorate  
Ministerio de Ambiente y Energía, Costa Rica

## Letter of Endorsement by Government

December 5<sup>th</sup>, 2022  
DM-2402-2022

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

Subject: Endorsement for concept note "**Enhancing the climate resilience of coastal communities in Limon, Costa Rica and Bocas del Toro, Panama through Nature-based Solutions for local livelihoods**"

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

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Environment Programme, and executed by the Ministry of Environment of Panama.

Sincerely,



**MILCIADES CONCEPCIÓN**  
Minister of Environment of Panama



MC/AGA/LCD/mp/lvm

cc: PNUMA

Albrook, Calle Broberg, Edificio 804  
República de Panamá  
Tel.: (507) 500-0855

[www.miambiente.gob.pa](http://www.miambiente.gob.pa)



## Project Formulation Grant (PFG)

Submission Date: 28 December, 2023

**Adaptation Fund Project ID:** N/A

**Country/ies:** Costa Rica and Panama

**Title of Project/Programme:** Enhancing the climate resilience of coastal communities in Limon, Costa Rica and Bocas del Toro, Panama through Nature-based Solutions for local livelihoods

**Type of IE (NIE/MIE):** MIE

**Implementing Entity:** United Nations Environment Programme (UNEP)

### A. Project Preparation Timeframe

Start date of PFG	April 2024
Completion date of PFG	March 2026


### B. Proposed Project Preparation Activities (\$)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Consultation processes	1-3	20,000
Gender action plan	1-3	12,000
ESS	1-3	12,000
Full proposal formulation	1-3	36,000
<b>Total Project Formulation Grant</b>		<b>80,000</b>

### C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
UNEP Mirey Atallah	 Mirey Atallah	28 December 2023	Jessica Troni	+254795751062	Jessica.troni@un.org

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