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**PANAMA**

**ENHANCED RESILIENCE FOR MANAGING CLIMATE CHANGE EFFECTS ON  
THE GULF OF MONTIJO, PANAMA**

**(PN-M1030) (PN-X1013)**

**PROADAPT FACILITY**

**(RG-M1223) (RG-X1167)**

**DONORS MEMORANDUM**

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**PROJECT SUMMARY**  
**ENHANCED RESILIENCE FOR MANAGING CLIMATE CHANGE EFFECTS**  
**ON THE GULF OF MONTIJO, PANAMA**  
**(PN-M1030/PN-X1013)**

Artisanal fishers and tourism microentrepreneurs in coastal communities on the Gulf of Montijo in Panama are facing the consequences of climate change and the negative impact on their income-producing activities. Given the remote location of these communities and their limited access to economic alternatives, there is a growing need to implement adaptation measures to reduce vulnerability in two sectors.

In line with the MIF's climate change adaptation mission and agenda, the project will address the vulnerability of low-income coastal communities on the Gulf of Montijo. It will facilitate consensus on and implementation of climate change adaptation measures to improve the resilience, and thus the preservation and continuity, of critical income-producing activities. New and existing value chains in the fisheries and tourism sector will be strengthened, increasing the number of beneficiaries, creating local capacity, incorporating new alternatives for responsible products/services, and improving resource use in preparation for possible scarcity due to changes in the ocean and coastlines. The project will also help develop distribution channels, support small producers and markets, climate adaptive value chains, and women's entrepreneurship.

The direct beneficiaries will be: 120 artisanal fishers and tourism microentrepreneurs associated with five community-based groups in coastal communities vulnerable to climate change.

The expected impact will be to contribute to the economic, social, and environmental sustainability of critical income-producing activities for coastal communities in Panama, strengthening the resilience of artisanal fishers and tourism MSMEs in coastal areas vulnerable to climate change on the Gulf of Montijo.

The executing agency for the project is MarViva, a regional not-for-profit nongovernmental organization with a mission to promote the conservation and sustainable use of marine and coastal ecosystems in the Tropical Eastern Pacific. The project will have a total cost of US\$1,018,821, of which the MIF will contribute US\$648,242. The project will have a three-year execution period.

This project is financed through PROADAPT, a facility created with the support of the Nordic Development Fund (NDF) and intended to support business models that build climate resilience in specific economic sectors in Latin America and the Caribbean. The facility contributes experiences and lessons learned from other projects in the region.

## **ANNEXES**

Annex I	Logical framework
Annex II	Budget summary

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Proposed resolution
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Annex XI	Terms of reference for the project coordinator
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## **ABBREVIATIONS**

AMP	Autoridad Marítima de Panamá [Maritime Authority of Panama]
ARAP	Autoridad de los Recursos Acuáticos de Panamá [Aquatic Resources Authority of Panama]
ATP	Autoridad de Turismo de Panamá [Tourism Authority of Panama]
COP 21	21st Conference of the Parties
DNA	Diagnostic needs assessment of the executing agency
IPCC	Intergovernmental Panel on Climate Change
MSME	Micro, small, and medium-sized enterprise
NDF	Nordic Development Fund
PSR	Project status report
QED	Quality for Effectiveness in Development
SINAPROC	Sistema Nacional de Protección Civil [National Civil Protection System]
UNFCCC	United Nations Framework Convention on Climate Change

## EXECUTIVE SUMMARY

### ENHANCED RESILIENCE FOR MANAGING CLIMATE CHANGE EFFECTS ON THE GULF OF MONTIJO, PANAMA (PN-M1030/PN-X1013)

<b>Country and geographical location:</b>	Country: Panama Location: Gulf of Montijo, province of Veraguas		
<b>Executing agency:</b>	Fundación MarViva [MarViva Foundation]		
<b>Access area:</b>	ABG		
<b>Agenda:</b>	Adaptation to climate change		
<b>Direct beneficiaries:</b>	5 community-based groups (associations of artisanal fishers and providers of marine-coastal tourism services); 120 heads of household (85 artisanal fishers and 35 tourism microentrepreneurs); 2 local businesses		
<b>Indirect beneficiaries:</b>	<ul style="list-style-type: none"> <li>- At least 14 coastal communities assessed for flooding risks due to sea level rise</li> <li>- 1,300 economically active individuals in the targeted areas (2010 census) with access to information on the indirect risk, impacts, and benefits of climate change adaptation measures</li> </ul>		
<b>Financing:</b>	Technical cooperation:	US\$500,000	50%
	Investment:	-	
	Loan:	-	
	<b>MIF total</b>	<b>US\$500,000</b>	<b>50%</b>
	Counterpart:	US\$370,579	36%
	Cofinancing (NDF)	US\$148,242	14%
	<b>Total budget</b>	<b>US\$1,018,821</b>	<b>100%</b>
<b>Execution and disbursement period:</b>	36 months		
<b>Special contractual conditions:</b>	As conditions precedent to the first disbursement under the nonreimbursable technical-cooperation component, the MarViva Foundation will present, to the satisfaction of the IDB/MIF: (i) evidence of the selection of the project coordinator; (ii) an annual work plan for the first year of the project; and (iii) an initial procurement plan.		
<b>Environmental and social impact review:</b>	This operation has been pre-evaluated and classified in accordance with the requirements of the Bank's Environment and Safeguards Compliance Policy (OP-703). Inasmuch as the impacts and risks are limited, the proposal is to classify the project as a category "C" operation.		
<b>Unit with disbursement responsibility:</b>	IDB/MIF Country Office in Panama (MIF/CPN)		

## I. BACKGROUND AND RATIONALE

### A. Problem to be addressed

- 1.1 The Intergovernmental Panel on Climate Change (IPCC) has documented the recent rise in sea level, primarily the result of the thermal expansion occurring as the oceans warm and the glaciers and polar caps melt. According to the Fifth Assessment Report of the IPCC, it is a virtual certainty that sea levels will continue to rise beyond the twenty-first century.<sup>1</sup> The Fourth Assessment Report noted that sea level rise is more evident in low and middle latitudes, especially in the tropical oceans, which have absorbed 80% of the heat added to the climate system since 1961.<sup>2</sup>
- 1.2 The most obvious consequences of sea level rise will be the gradual and permanent inundation of low-lying areas, changes in coastlines, and the displacement of wetlands. Other impacts include an increase in the salinity of estuaries and freshwater aquifers, more frequent flash flooding caused by storms and surges, and altered sedimentation patterns that will increase water turbidity and affect ecosystems.
- 1.3 According to Panama's Disaster Information System, 1,225 adverse local events were recorded between 1999 and 2009, causing 103 fatalities and affecting 211,000 people. Eighty percent of these events were hydrometeorological in origin and caused 72% of the reported deaths. There is a pattern of intensifying vulnerability to the impacts of natural hazards in the country, characterized by an increase in the physical exposure of people, goods, and services and related to conditions of extreme climate variability.<sup>3</sup> Panama ranks fourteenth in the world among countries with a high level of economic exposure to multiple natural hazards, relative to land area.<sup>4</sup>
- 1.4 Considering the effects of sea level rise on marine and coastal ecosystems and on coastal communities, MarViva mapped the low-lying areas that could be affected on the Gulf of Montijo, classifying them preliminarily according to three flood threat levels: extremely low areas (critical threat), very low areas (high threat), and low areas (indirect threat).<sup>5</sup> The study consolidated spatial information on the distribution of marine and coastal habitats. By consolidating both maps, habitats and communities at potential risk of flooding due to rising sea levels were identified. The area of study covered the home and work environments of approximately 56,000 people,<sup>6</sup> including the artisanal fishery sector and the micro, small, and medium-sized enterprises in the responsible tourism sector, which are vulnerable due to the slim margins in which they

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<sup>1</sup> The rates of sea level rise were 1.7 (1.5-1.9) millimeters per year between 1901 and 2010 and 3.2 (2.8-3.6) millimeters per year between 1993 and 2010.

<sup>2</sup> IPCC, 2007.

<sup>3</sup> MarViva, 2015.

<sup>4</sup> World Bank, 2005.

<sup>5</sup> "Cartografiando los hábitats marino-costeros críticos vulnerables a los impactos del cambio climático en el Golfo de Chiriquí" [Mapping critical marine-coastal habitats vulnerable to climate change impacts in the Gulf of Chiriquí] (2014).

<sup>6</sup> Population census, 2010.



operate and the risk of negative impacts due to changes in the behavior of commercially important species and the loss of established tourist destinations.

- 1.5 By prioritizing targeted areas based on climate change criteria and developing adaptation plans for income-producing activities dependent on marine habitats and ecosystems, the project will help strengthen the capacities of local community-based groups in highly vulnerable geographic areas and communities, making them more resilient to climate change impacts. In so doing, it will help protect the sustainability of important income sources in the region.

## **B. Project beneficiaries**

- 1.6 The direct beneficiaries of the project include: 5 community-based groups (associations of artisanal fishers and providers of marine-coastal tourism services); 120 heads of household: 85 artisanal fishers and 35 owners of tourism microenterprises who are members of community-based groups in coastal communities vulnerable to climate change, who will make their livelihoods more resilient through awareness-raising activities, skills development, and the implementation of adaptation measures (representatives of households totaling 530 individuals); 140 actors representing the target communities trained in climate change risks, impacts, and adaptation; 2 local businesses (restaurants in Santa Catalina and Montijo); and up to 20 institutional officials with responsibilities on and around the Gulf of Montijo to support climate change adaptation programs and government efforts to protect the environment and ensure sustainable development in the region. The municipal governments and regional offices of central government institutions face ongoing challenges in terms of access to knowledge, interagency coordination, public relations, budget, and technical resources. The project will help inform and train key officials, strengthening institutional capacity and generating a multiplier effect for greater resilience in coastal communities through public administration.
- 1.7 The indirect beneficiaries will include: (i) at least 14 coastal communities assessed for flooding risk due to sea level rise; (ii) five coastal communities prioritized for the implementation of climate change adaptation measures; (iii) buyers in at least two adaptive value chains in the responsible fisheries sector (bulking centers, buyers, final consumer); (iv) buyers in at least two adaptive value chains in the responsible tourism sector (local service providers, tourism operators, local wholesalers, final consumer); and (v) at least five local financial institutions; and (vi) 1,300 economically active individuals in the targeted areas, who will gain access to information on the indirect risk, impacts, and benefits of climate change adaptation measures.
- 1.8 People in disadvantaged coastal communities live in precarious conditions and have few alternatives for earning a living, given their limited schooling and the remote location of the communities. Average household income in the artisanal fishery sector ranges between US\$100 and US\$250 per month. However, initiatives carried out by MarViva in partnership with community-based groups to strengthen the organizational structure, production practices with low environmental impact, and access to better markets have demonstrated the feasibility of generating more income by selling products through responsible fisheries value chains. Meanwhile, the responsible tourism services sector generates average household income of, depending on the specific activity,

between US\$200 and US\$750 per month, which represents a significant improvement in the quality of life of local families.

- 1.9 Regarding educational attainment, the average years of school completed is six years, with the communities of Hicaco, Palo Seco, and El Pito averaging the least, at five years, and Puerto Mutis averaging the most, at over seven years. These levels are associated with high rates of illiteracy. The median average household income, according to the 2010 census, is estimated at US\$207, mostly from agricultural activities, followed by fishing and then by other service activities or unskilled labor. Figures as of 2014 reveal income levels for microenterprise activities ranging from US\$200 to US\$750 per month depending on the activity, and from US\$100 to US\$250 per month for the artisanal fisheries sector. On average, over 78% of the population in the targeted communities does not have social security, and the situation is even worse in the communities of Palo Seco, Santa Catalina, and Hicaco.
- 1.10 The socioeconomic life of these communities revolves around marine habitats and resources, so disturbances to either have a domino effect that cuts across gender, age, and occupation. The main causes of the vulnerability of basic income-producing activities to climate change impacts in coastal communities are: lack of understanding about the phenomenon and its effects, insufficient organizational capacity to strengthen sector actions and planning, weak technical skills and economic resources for the design and implementation of adaptation measures, and access barriers to market processes that would support and incentivize the consolidation of responsible income-generating activities in terms of sustainability of the marine environment.
- 1.11 The impacts of climate change affect men and women indiscriminately. The income-producing activities targeted by this project are generally characterized by greater male participation in the field, i.e., fishing and providing tourism services. However, women provide support services, whether in the context of the home or in the chain of business operations. In artisanal fishing, women work in bulking centers and retail locations (small stores), cook in restaurants, food stands, and local hotels in coastal communities, and feed their families a diet rich in seafood. In the tourism sector, women help customers book tours, arrange food and lodging, etc.

**C. Contribution to the MIF Mandate, Access Framework, and IDB Strategy**

- 1.12 As a contribution to the MIF's strategic objectives in Panama, the project will fill the knowledge gap on the spatial distribution of the risk of sea level rise along the coastline of the Gulf of Montijo. It will also address and train actors in the adaptation measures needed to increase the resilience of critical income-producing activities for MSMEs in the tourism and artisanal fisheries sectors, in line with the biophysical and socioeconomic characteristics of the targeted area.
- 1.13 The adaptation measures will help reduce the vulnerability of the local population and marine ecosystems to overexploitation of marine resources and will thus make livelihoods more sustainable in the face of climate change. The consolidation of climate-adaptive value chains that reward the application of good practices in the use of marine products and services will help develop a stronger

- private sector and improve the income levels of the beneficiary groups in the long run. The work plan will be based on the participation and commitment of artisanal fishers and tourism microentrepreneurs for the joint validation and implementation of adaptation measures appropriate for their line of activity.
- 1.14 Engaging and educating banks and microcredit companies will make it easier for beneficiaries to gain access to credit, in order to boost local and complementary business investments in the targeted sectors (artisanal fisheries and marine coastal tourism), by incorporating variables related to climate change adaptations into credit portfolio considerations. Access to early warning systems and insurance will also be promoted, so that beneficiaries are better prepared to maintain their source of income in the event of extreme climate events that interrupt their activities. Given the similar set of characteristics in the region, this knowledge could be used in similar initiatives in other coastal areas of Panama, as well as in the rest of Central America.
- 1.15 **Linkage with the MIF program.** In line with the MIF's climate change adaptation program and mission, the project will address the vulnerability of low-income coastal communities on the Gulf of Montijo. It will facilitate consensus on and implementation of climate change adaptation measures to improve the resilience, and thus the preservation and continuity, of critical income-producing activities. New and existing value chains in fishing and tourism will be strengthened, increasing the number of beneficiaries, creating local capacity, incorporating new alternatives for responsible products/services, and improving resource use in preparation for possible scarcity due to changes in the ocean and coastlines. The project will also help develop distribution channels, support small producers and markets, climate adaptive value chains, and women's entrepreneurship.
- 1.16 The project approach and objectives are aligned with those of the **PROADAPT** facility, which will contribute funds to the project budget. The PROADAPT facility was created with the support of the Nordic Development Fund to support business models that build climate resilience in specific economic sectors in Latin America and the Caribbean. The facility shares experiences and lessons learned from other projects in the region.
- 1.17 **Collaboration with the IDB Group in Panama.** The operation is consistent with the crosscutting areas of action set forth in the Bank's country strategy with Panama for 2015-2019, currently in preparation.<sup>7</sup> The country strategy will take into account the following crosscutting issues: (i) gender and diversity; (ii) integration; (iii) climate change and environmental sustainability; and (iv) the institutional capacity of local counterparts.

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<sup>7</sup> The Bank's country strategy with Panama (2015-2019) is expected to be approved in December 2015.

## **II. PROJECT DESCRIPTION**

### **A. Objectives**

- 2.1 The objective at the impact level is to strengthen the economic, social, and environmental sustainability of the coastal communities on the Gulf of Montijo. The objective at the results level is to create and implement an economic model to improve resilience to climate change among artisanal fishers and tourism MSMEs in coastal areas at high risk of flooding in the coastal communities on the Gulf of Montijo.

### **B. Description of the model**

- 2.2 The project will incorporate climate change criteria in local capacity-building for implementation of adaptation measures that ensure the continuity of critical income-producing activities in highly vulnerable coastal communities. The model seeks to: (i) inform community-based groups, institutional authorities, actors in value chains, and financial institutions and/or credit cooperatives about the reality of climate change and its effects on the ecosystems that sustain their livelihoods; (ii) train actors to take proactive action to reduce human impacts on ecosystems, through the implementation of adaptation measures in their income-producing activities; (iii) promote the creation of climate-adaptive value chains, in order to incentivize environmental good practices through differentiated income for the actors to engage responsibly in their traditional occupations; (iv) promote access to credit to strengthen the beneficiary groups beyond the scope of the project; and (v) facilitate knowledge management for the replication of successful methodologies in other coastal areas vulnerable to climate change.
- 2.3 Outreach will be in the form of workshops to raise awareness among the vulnerable population about the impacts of climate change and possible adaptation measures. The field work and technical support for implementing adaptation measures will be concentrated in at least four locales, each associated with a minimum of 30 artisanal fishers and tourism MSMEs (minimum target group: 120 direct beneficiaries participating in vulnerable income-producing activities). In addition, activities will be carried out with community-based groups, at least 5 financial institutions, actors in at least two value chains in the fisheries sector and two in the responsible tourism sector, and at least 20 government officials (Ministry of the Environment, Aquatic Resources Authority, Maritime Authority, and Tourism Authority) who by virtue of their offices can have a multiplier effect on the general public.
- 2.4 The model's innovation lies in studies using elevation models to identify the danger posed by impacts from sea level rise, as well as survey-based studies to assess socioeconomic vulnerability. However, this will be the first time that both types of assessment are used in Panama to generate a risk analysis for coastal populations and their critical income-producing activities, in relation to the expected impacts of sea level rise. It will also be the first time that this risk analysis is used in coastal communities and associated vulnerable populations to validate and prioritize adaptation measures to build resilience to climate change among tourism MSMEs and organized groups of artisanal fishers.

- 2.5 The model could be replicated in all coastal areas of the country and the region. Indeed, MarViva has local operations in Costa Rica and Colombia, where the socioeconomic reality, environmental context, and exposure of coastal communities to the impacts of climate change are comparable to conditions in Panama. In addition to MarViva's role in the region as a facilitator and provider of technical assistance, the success in replicating and scaling the model is based on local partnerships with the direct beneficiaries of the strategy (community-based associations of tourism MSMEs and artisanal fishers). The experiences in Panama will also be recorded in a document on results and lessons learned, prepared in sufficient detail to serve as a guide for the implementation of similar initiatives. The document will be disseminated via the communications platforms of members and partners.

### **C. Components**

- 2.6 **Component I: Development of a participatory resilience model for coastal marine value chains (NDF: US\$48,000; MIF: US\$10,839; Counterpart: US\$21,359)**
- 2.7 The objective of this component is to analyze the risk of climate change impacts on the Gulf of Montijo in order to validate and prioritize specific adaptation measures to make the livelihoods of vulnerable artisanal fishers and tourism MSMEs more resilient.
- 2.8 The activities in this component are as follows: (i) create risk maps for sea level rise; (ii) analyze vulnerability in coastal communities and associated populations that depend on artisanal fishing and tourism at the micro, small, and medium scale; (iii) raise awareness in communities at high risk of impacts from sea level rise and other climate-related effects; (iv) validate adaptation measures to strengthen the resilience of income-producing activities in the fisheries and tourism sectors; (v) facilitate discussion and consensus around the adaptation measures identified by experts as viable for implementation in the targeted area with tourism MSMEs, community-based groups of artisanal fishers, and other interested parties; and (vi) generate new scenarios that tie in the use of marine and coastal resources and conservation guidelines with the identified adaptation measures.<sup>8</sup>
- 2.9 The expected outputs include: (i) sea level rise impact maps in digital and print format; (ii) a vulnerability assessment report for coastal communities; (iii) an infographic of climate change risk that maps the distribution of biophysical and socioeconomic vulnerability risks and explains how these converge in Gulf of Montijo communities to generate climate change risk conditions; (iv) a document on adaptation measures validated by experts and authorities and accepted by consensus of the beneficiaries (for implementation in the second component).

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<sup>8</sup> <http://www.iagua.es/noticias/internacional/13/08/05/se-realiza-un-taller-para-el-manejo-del-humedal-golfo-de-montijo-34196>.

- 2.10 **Component II: Implementation of a participatory resilience model for coastal marine value chains (MIF: US\$261,971; Counterpart: US\$265,052)**
- 2.11 The objective of this component is to help build resilience among fishing and tourism MSMEs in the targeted communities, given their vulnerability and the hazards they face due to risks associated with climate change, through the implementation of adaptation measures.
- 2.12 The activities in this component are as follows: (i) train the target beneficiaries in four communities selected based on vulnerability to climate risks; (ii) implement adaptation measures to build resilience in artisanal fishing activities; (iii) strengthen organizational aspects of local associations of artisanal fishers; (iv) strengthen and/or create at least two adaptive value chains in the artisanal fisheries sector based on principles of environmental responsibility; (v) implement adaptation measures for the tourism MSMEs; (vi) strengthen organizational aspects of local associations of tourism microentrepreneurs; (vii) strengthen and/or create at least two adaptive value chains for coastal marine tourism based on principles of environmental responsibility in accordance with the implementation plan for the adaptation measures.
- 2.13 The expected outputs include: (i) implementation plan for adaptation measures related to the continuity of income-producing activities in Palo Seco and Hicaco-El Pito; (ii) two bulking centers equipped with solar-powered systems to freeze product; (iii) associations equipped with computers for business administration; (iv) two traceability systems to differentiate responsible products; (v) 20 fishers trained in the use of tools for monitoring climate events; (vi) two local emergency-response committees for climate events; (vii) two target areas with signage on how to respond to emergencies during climate events (Palo Seco, Hicaco-El Pito); (viii) work plan for implementation of environmental responsibility standard for marketing of responsible artisanal fish in climate-adaptive value chains; (ix) four new tourism circuits included in the purchase package of wholesale and retail operators; (x) strategy implemented for differentiating responsible tourism destinations; (xi) 20 tourism microentrepreneurs trained in tools for monitoring climate events; (xii) two local emergency-response committees for climate events; and (xiii) two target areas with signage on how to respond to emergencies during climate events.
- 2.14 **Component III: Access to credit for implementation of complementary adaptation measures (MIF: US\$8,204; Counterpart: US\$0)**
- 2.15 The objective of this component is to involve financial institutions in the flow of project activities, in order to develop their interest in financing complementary adaptation measures.
- 2.16 The activities in this component are as follows: (i) map the financial institutions relevant to the scope of the project that are interested in receiving training on climate risks; (ii) raise awareness in these financial institutions about the analysis of exposure to climate risks in their investment portfolios; (iii) train personnel at the financial institutions on climate risks and adaptation plans to strengthen the resilience of the income-producing activities that they target.
- 2.17 The expected outputs include: (i) report mapping eligible financial institutions on the Gulf of Montijo and ranked list of potential partners; (ii) personnel at no fewer

- than five financial institutions trained in climate risks and the impacts on livelihoods on the Gulf of Montijo (artisanal fishing and marine-coastal tourism); and (iii) at least one credit program designed to support beneficiary groups with the implementation of future adaptation measures.
- 2.18 **Component IV: Knowledge management and communications strategy (MIF: US\$73,284; Counterpart: US\$13,291)**
- 2.19 The objective of this component is to contribute to the dissemination of information and the management of knowledge to enhance the resilience and adaptive capacity of coastal communities at high risk of impacts from climate change.
- 2.20 The activities in this component are as follows: (i) share lessons learned during activities to raise awareness and implement climate change adaptation measures (national and international groups); (ii) document project experiences, results, and lessons learned; and (iii) promote the replication and scalability of successful strategies to enhance the resilience of coastal communities at high risk of climate change impacts.
- 2.21 The target audiences are: (i) direct beneficiaries of the project; (ii) government institutions associated with the project; (iii) civil society organizations associated with the project; (iv) private firms associated with the project; (v) municipal governments with jurisdiction in coastal communities; (vi) donors and partners in project implementation; (vii) counterpart authorities in Latin American countries; and (viii) national, regional, and international implementation and research experts.
- 2.22 The communication products that will be used to reach the various audiences are as follows: (i) an audiovisual product to promote project impacts; (ii) an exchange workshop for national, regional, and international experts; (iii) participation in forums on climate change adaptation, websites, and social networks of MarViva, the MIF, Adapta América, PROADAPT, and other partners; (iv) 30 officials (50% international) informed about the lessons and results of the project in Panama and similar experiences in other countries; (v) documentation and publication of lessons learned and processes (digital and print format); (vi) video of success stories (beneficiary testimonials); (vii) an infographic of project information; (viii) informational brochures; (ix) media kits; and (x) content for publication on social networks and other electronic media. Dissemination will be through: local representatives (beneficiaries); press releases; project beneficiaries, institutions, and partners at the closing event; a media tour; and proposals for initiatives to replicate the strategy using MarViva's regional structure in Panama, Costa Rica, and Colombia.
- D. Project governance and execution mechanism**
- 2.23 For project execution, the MarViva Foundation will set up an execution unit and the necessary structure for it to effectively and efficiently execute activities and manage resources for the operation. The MarViva Foundation will also submit progress reports on implementation of the project. The project will be run by a technical coordinator responsible for monitoring and supervision of project execution who will also serve as institutional liaison with the Bank. In addition to field coordination duties, the technical coordinator contributes capacity to work

locally with coastal communities (both in fishing and tourism). Technical coordination operations will be headquartered in the province of Veraguas, in the region targeted by the work plan. Specialists will be based in Panama City and will travel to the project areas to coordinate and carry out the various lines of activity, as well as to monitor progress and provide technical support to partners and beneficiaries. Administratively, the technical coordinator will have the support of an administrative assistant and the financial manager at the MarViva Foundation, who will oversee monthly execution of the budget and will contribute to the preparation of progress reports (narrative and financial), in coordination with MarViva's regional project coordinator. The administrative assistant will also provide support to the project coordinator to organize specific field workshops, manage and monitor procurement processes, and process project disbursements.

- 2.24 MarViva will meet with the MIF every six months to share information on the status of the project (PSR) and incorporate the Bank's feedback into execution. There will also be a midterm evaluation and a final evaluation of the project.

#### **E. Sustainability and scalability**

- 2.25 As a collaborative initiative with beneficiary groups, the expected outputs address the specific needs of the target communities on the Gulf of Montijo. The project results will benefit the target communities on an ongoing basis through the development of technical know-how for the implementation of environmental conservation and market access strategies to strengthen income-producing activities and traditional livelihoods in the region.
- 2.26 The project will be coordinated on an ongoing basis with the National Civil Protection System (SINAPROC), the agency that monitors environmental events in the country. Monitoring by government agencies will be assured through the creation of local emergency-response committees and the provision of advisory services by institutional technical experts to validate the adaptation measures to be implemented.
- 2.27 The sustainability of the results will be defined at various levels:
- a. Technical: based on the documentation corresponding to the analyses and vulnerability map taking into consideration environmental, ecological, and socioeconomic criteria in the Gulf of Montijo; the information and local capacity generated through the project will enable the actors to take decisions and actions in response to climate change events;
  - b. Social: through the local capacity generated for community-based groups to understand and adapt to climate change impacts; the project will create processes for vulnerable populations to manage and adapt to climate change impacts;
  - c. Economic: through the integration of responsible and strengthened income-producing activities into climate-adaptive value chains, incentivizing environmental stewardship among artisanal fishers and tourism MSMEs;
  - d. Financial: through access to credit with financial institutions that are sensitive to the needs of vulnerable groups of producers and service providers and



adapt variables in their credit portfolios to support climate change adaptation initiatives;

- e. Institutional: with awareness-raising activities for government officials assigned to the target area as government liaisons for the promotion of sustainable development and natural resource conservation, and under the framework of collaboration agreements and efforts between MarViva and the competent authorities<sup>9</sup> (Interagency Coordination Platform);
- f. Political/legal: through the presentation of a planning recommendation to incorporate the consideration of climate change criteria and the early implementation of adaptation measures in planning processes, in order to strengthen the resilience of vulnerable coastal populations;
- g. Informational: in the documentation and publication of lessons learned and results to facilitate the dissemination of information and the replication and scalability of successful strategies;
- h. Operational: with the long-term commitment adopted by the MarViva Foundation in support of local actors in the Gulf of Montijo, in fulfillment of its founding mission and investment priorities for the conservation and sustainability of marine resources in Panama.

2.28 As a party signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Panama agreed on a series of commitments under the 21<sup>st</sup> Conference of the Parties (COP 21), in line with the project objectives: (i) the Paris Agreement establishes the goal of enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change, with a view to contributing to sustainable development; (ii) the agreement recognizes the importance of averting, minimizing, and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage. To address the situation, areas of cooperation have been proposed, such as risk insurance solutions, comprehensive risk assessments, emergency preparedness, and early warning systems. In addition, the Panamanian Environment Ministry's Climate Change Office has reiterated its interest in and support for the project and is already working towards ensuring the continuity of the expected results. Accordingly, the achievements made at the COP 21 and the official backing they have received have strengthened national interest and the institutional context in which the proposed activities will be pursued, while mitigating the execution risk associated with the work plan.

2.29 The innovation of the project lies in its testing of new sustainable production alternatives and conservation strategies in the fisheries industry, both as part of the PROADAPT program and with respect to the issue of resilience to climate change among small producers, especially in a country like Panama and other similar countries with long coastlines. The operation has the support of, and may be scaled up by, a number of government institutions, such as: (i) the Maritime Authority of Panama (AMP); (ii) the Aquatic Resources Authority of Panama

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<sup>9</sup> ATP, SINAPROC, ANAM, ARAP, SENAN.

(ARAP); (iii) the Ministry of the Environment; (iv) the National Civil Protection System (SINAPROC); and (v) the Tourism Authority of Panama (ATP), which by virtue of their government platform, can have a multiplier effect on the general public. As for the potential scaling-up of the project, it should be noted that the MarViva Foundation has obtained contributions from other donors for project execution, including the United Nations Educational, Scientific, and Cultural Organization and the Lotex Foundation. Thus, the long-term objective is to scale up the project with the support of these actors through strategies to disseminate the results. In addition, the operation is consistent with the Bank's country strategy with Panama, specifically in the crosscutting areas of climate change and environmental sustainability, as well as with the Bank's Institutional Strategy and its objectives to insert firms in value chains and with the IIC in terms of the identification of green value chains. Moreover, in Panama, climate change is already part of the policy agenda, and the operation is very important due to the extreme drought that has hit the areas targeted by the project.

- 2.30 Six months prior to the conclusion of the work plan, the execution unit will coordinate a joint working meeting with project partners and beneficiaries to identify actions and a transition plan to help guarantee the sustainability of project results.

**F. Lessons learned by the MIF and other institutions in the project design phase**

- 2.31 In the area of adaptation, this intervention draws on lessons learned from other projects in the PROADAPT Facility. The first project approved under the Facility (PROADAPTA Sertão, BR-M1223) is already contributing important lessons. This is a project that is being executed in a semi-arid region of Brazil known as the Sertão. In the context of that project, the importance of establishing a strategic partnership between all the relevant actors for the intervention has been demonstrated, since building climate resilience requires a collaborative process in order for the shift to be made to a new approach to production in which the public, private, and financial sectors play equally important roles. Another lesson learned in the Brazilian Sertão is specifically related to financial institutions. Namely, it is important for these institutions to also receive support to gain an understanding of the impact that climate change has on their portfolios. It is only after they receive that support should efforts be made to improve access to credit for investment in resilient technologies.

**G. MIF additionality**

- 2.32 **Nonfinancial additionality.** The MIF will contribute technical expertise from similar projects in other countries; a network of professional contacts for consultation of experts; access to support from other governmental and nongovernmental institutions that will be convened to participate throughout the project; credibility for project achievements; knowledge management; and capacity to publicize, disseminate, and replicate successes. It promotes interagency coordination around the topic of climate change and sustainable development, bringing together a diverse range of relevant actors and linking them with national, regional, and international experiences. The PROADAPT Facility will also contribute its experience with other climate change adaptation projects in the region, as well as access to a network of institutions.

- 2.33 **Financial additionality.** MIF cofinancing will help optimize MarViva's economic investment in the region. It will facilitate the advance of key processes for the regulation of human activities on the water and the sustainable use of resources in the Gulf of Montijo, a critical sector for marine-coastal tourism and artisanal, sport, and semi-industrial fishing in Panama. It will help ensure broad dissemination of learnings, methods, and experiences gained for the adoption of climate change adaptation measures.

## **H. Project results**

- 2.34 The expected results are as follows: (i) a reduction in human-induced pressures on fishery resources through (a) technical training for the implementation of good practices in artisanal fishing; (b) replacement of trammel nets with longlines; and (c) replacement of trammel nets with basket traps;<sup>10</sup> (ii) use of the whole catch through the promotion of commercial species, not species for local traditional consumption; (iii) diversification of fishing grounds<sup>11</sup> through the identification of new grounds in response to the migration of species due to ocean warming; (iv) organizational strengthening of local artisanal fishing associations through the creation of capacities for organizational strengthening, the installation and outfitting of two operations/management centers for production activity, and the creation of capacities for early warning and contingencies in the case of extreme hydrometeorological events; (v) promotion of adaptive value chains in the artisanal fisheries sector based on principles of environmental responsibility, by raising awareness among potential corporate buyers on human impacts on climate change and the sustainability of the ocean, and by implementing a standard for responsible marketing of sea fish; (vi) diversification of tourism services (promotion of new experiences at the destination such as mangroves, freshwater ecosystems, etc.) and advocacy for the formalization of responsible tourism activities; (vii) organizational strengthening of local associations of tourism microentrepreneurs, through the installation and outfitting of two operations/management centers for production activity and the creation of capacities for early warning and contingencies in the case of extreme hydrometeorological events; (viii) promotion of adaptive value chains in the marine-coastal tourism sector based on principles of environmental responsibility, by building capacities in good practices in responsible tourism and establishing commercial agreements with wholesale and retail buyers, as well as promoting the Gulf of Montijo as a tourism destination.
- 2.35 Project results will be reflected in two basic indicators of enhanced resilience among beneficiaries to climate change impacts: (i) number of individuals who have adopted new technologies and practices; and (ii) number of rural businesses that have adopted new technologies and practices.

## **I. Project impact**

- 2.36 The project impact will be reflected in two basic indicators: (i) average annual sales by associations of artisanal fishers and tourism MSMEs are maintained; and (ii) number of individuals employed six months after participation in the program.

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<sup>10</sup> Fishing methods with nets.

<sup>11</sup> Appropriate sites for setting fishing nets.

## **J. Systemic impact**

- 2.37 The project will demonstrate the effectiveness of the model and the replicability of the strategy along the coasts of Panama and Central America, given the variables that these areas have in common: socioeconomic vulnerability of coastal populations, weakening of marine ecosystems, absence of alternative income sources for families, and lack of technical criteria on climate change impacts that intensify social vulnerability. It will lend itself to adoption or replication by new private sector actors wishing to scale up the project, through the promotion of an abundant supply of providers (direct beneficiaries) and marketers in value chains and new partnerships to scale up the project in the future, using platforms to disseminate information and raise awareness among the institutional actors responsible for environmental conservation and the sustainable development of coastal communities.

## **K. Monitoring and evaluation strategy**

- 2.38 The project will be evaluated by the extent to which it enhances the resilience of the income-producing activities of artisanal fishers and tourism MSMEs, through their capacity to participate in value chains for responsible marine-based products and services. The baseline for the current level of awareness among the target population about the implications of climate change and possible adaptation measures will be established at the start of the work plan by administering individual field surveys in communities identified using the updated risk map for sea level rise. These perceptions will be newly evaluated in the same communities at the end of project execution. The baseline for household income, separated out for the artisanal fishing and tourism sectors, will be established using focus groups that are representative of the actors involved in the project. Average income will be compared against income generated in and outside of the model of value chains for responsible marine-based products and services. The socioeconomic variables of each family will be documented at project startup, including: number of members, ages, occupations (by gender), and income (main and supplemental sources). Income will be measured again at project completion to ascertain the effect of the adaptive value chains on the income-producing activities of the beneficiaries.
- 2.39 **Monitoring.** The MarViva Foundation will be responsible for compiling and analyzing the relevant information for performing ongoing monitoring of project execution and the indicators established in the logical framework (Annex I). MarViva will set up an execution unit and the structure needed to effectively and efficiently execute project activities, manage project resources, and submit progress reports on implementation. Monthly supervision and technical support meetings will be held with groups of both artisanal fishers and tourism microentrepreneurs.
- 2.40 **Evaluation.** A midterm evaluation of the project will be conducted once half of the execution period has elapsed or half of the budget has been spent, and a final evaluation will be conducted at the end of the execution period. The MIF will conduct a midterm evaluation when 50% of the MIF resources have been disbursed or half of the execution period has elapsed, whichever occurs first. The evaluation will measure: (i) the progress achieved; (ii) the status of project activities; (iii) problems encountered and solutions proposed; and (iv) lessons

learned and recommendations for improving the project and its replicability. A final evaluation will be conducted at the end of the execution period and will include, in addition to the aspects covered in the midterm evaluation, an analysis of: (i) the immediate impact of the project on the beneficiaries; (ii) the results achieved in comparison with the original objectives; (iii) lessons learned; and (iv) the sustainability of project actions.

- 2.41 **Closing workshop.** The executing agency will organize a **closing workshop** for the purpose of meeting with other participating entities to evaluate the results achieved, identify additional tasks to guarantee the sustainability of activities initiated under the project, and identify and disseminate lessons learned and best practices.

### III. COST AND FINANCING

- 3.1 The total budget for the project is US\$1,018,821, of which US\$148,242 (14%) will be cofinanced by the NDF (through the PROADAPT Facility), US\$500,000 (50%) will be contributed by the MIF, and US\$370,579 (36%) will be contributed by the local counterpart. The execution and disbursement periods will be 36 months.

	NDF	MIF	Local counterpart	Total
<b>Project components</b>				
Component 1: Development of a participatory resilience model for coastal marine value chains	48,000	10,839	21,359	80,198
Component 2: Implementation of a participatory resilience model for coastal marine value chains	-	261,971	265,052	527,023
Component 3: Access to credit for implementation of complementary adaptation measures	-	8,204	-	8,204
Component 4: Knowledge management and communications strategy	-	73,284	13,291	86,575
<b>SUBTOTAL</b>	-	<b>354,298</b>	<b>299,702</b>	<b>702,000</b>
<b>Execution and supervision</b>	-			
Executing agency/ Administrative	100,242	52,500	70,877	223,619
Baseline and monitoring	-	20,000	-	20,000
Midterm evaluation	-	8,500	-	8,500
Final evaluation	-	12,000	-	12,000
Ex post reviews	-	19,950	-	19,950
Contingencies	-	32,752	-	32,752
<b>TOTAL</b>	<b>148,242</b>	<b>500,000</b>	<b>370,579</b>	<b>1,018,821</b>

### IV. EXECUTING AGENCY

- 4.1 The MarViva Foundation will be the executing agency for this project and will sign the agreement with the Bank. Created in 2002, it is a regional not-for-profit nongovernmental organization with a mission to promote the conservation and sustainable use of marine and coastal ecosystems in the Tropical Eastern Pacific. The strategic focus of MarViva's working model is on: marine spatial planning, the promotion of sustainable markets, and local and institutional

capacity-building. MarViva carries out initiatives in partnership with local and national authorities and the beneficiaries.

- 4.2 MarViva has extensive experience working with the Bank, having successfully executed ATN/ME-12186-PN (MIF-Panama) and CR-X1004 (GEF-Costa Rica), which contributed to the environmental, social, and economic sustainability of key income-producing activities in coastal areas. IN 2015, MarViva completed the project “Development of Sustainable Economic Alternatives and Conservation Strategies in Protected Marine Areas of the Gulf of Montijo,” cofinanced by the MIF in partnership with the ANAM.<sup>12</sup> This project contributed to social and environmental sustainability in eight fishing communities on Panama’s Pacific coast. MarViva is the only regional organization that specializes specifically in marine-coastal issues and has its own infrastructure and capacity to directly execute projects on the Pacific coast of Costa Rica, Panama, and Colombia. At the regional level, MarViva executes an annual budget of more than US\$5 million for approximately 20 concurrent projects.

## **V. PROJECT RISKS**

- 5.1 The execution risk is considered medium, since comprehensive political action is needed to tackle the challenges associated with climate change. However, although the project will complement and contribute to the efforts made by the authorities, the proposed actions are independent of institutional processes. Also, MarViva will continue to work in partnership with the authorities to support improvements in institutional capacity, awareness-raising, and coordination.
- 5.2 Another risk is that some actors in coastal communities may not view as a matter of urgency the implementation of adaptation measures to make their income-producing activities more resilient. As a mitigating factor, the project will create opportunities to raise awareness among local actors through informational talks and materials and training for community leaders to get out the message and generate awareness and a sense of commitment among artisanal fishers and tourism microentrepreneurs.
- 5.3 There are risks associated with project sustainability that could affect the continuity of the benefits generated by the project, which will depend on the commercial dynamic generated. This risk will be mitigated through the strengthening of local capacity directly with the beneficiary groups and the promotion of business (and credit) policies that support vulnerable communities committed to the marine environment. The project will facilitate the formation and strengthening of partnerships between the actors (artisanal fishers and tourism MSMEs) and corporate buyers, based on long-term interests and commitments.
- 5.4 There is a financial risk associated with the coordination of agendas with officials for their participation in project-related activities and with delays in the execution of works planned in the first and second years of the project. This risk will be mitigated by government support in the form of the officials from key institutions (Ministry of the Environment, AMP, ARAP, ATP) who will be invited to all relevant activities, in order to increase their awareness and understanding of the need to

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<sup>12</sup> The former National Environmental Authority (ANAM) is now the Ministry of the Environment.

- take timely action in response to the impacts of climate change. Activities will be planned sufficiently in advance to ensure that the officials are available and have time to make the corresponding travel arrangements. The project will maintain an open line of communication with the environmental and tourism authorities to verify the status of planned works, which are expected to be completed over the next several years (the MarViva-MIF project will have a three-year execution period).
- 5.5 There is a climate risk associated with sea level rise, which could affect construction and infrastructure and even endanger human lives. The project will generate information and raise awareness so that locals and authorities in the priority areas are able to identify risks before they materialize and take proactive and preventive action. It will develop local community-based organization and collaboration mechanisms to facilitate the flow of information and channel emergency-response plans and actions. It will also enhance capacity to prepare marine-coastal management plans and allocate the corresponding budgetary resources by providing the authorities with climate change criteria to apply in marine spatial planning exercises.
- 5.6 Sea level rise and ocean warming could weaken the health and resilience of coastal habitats, as well as the location and abundance of certain marine species. Such changes would alter access to and the availability of natural resources for artisanal fishing and marine-coastal tourism, critical sources of income in the area targeted by the project. For example, the location of fishing grounds for species of interest to fisheries could change, as could the location of tourist attractions, such as avian roosts, recreational areas on the Gulf, currents, etc., which could require providers to modify some sun-and-sand ecotourism itineraries and activities. The project will improve the technical capacity and knowledge base of artisanal fishers and tourism microentrepreneurs to ensure the continuity of their income-producing activities, through training to develop know-how and skills, equipment, organizational and operational strengthening, and relationship-building with the competent local and regional authorities.

## **VI. ENVIRONMENTAL AND SOCIAL EFFECTS**

- 6.1 The project will not generate a negative environmental impact in the project area. The objective is to strengthen the resilience of coastal communities whose critical income-producing activities are vulnerable to climate change. As a mitigating factor, the project will work directly with community-based groups that depend on the sustainability of marine and coastal resources for the preservation and continuity of their livelihoods in the artisanal fishery and responsible tourism MSME sectors. In effect, the operation will generate positive effects beyond the project area:
- a. Enhanced awareness about the threat posed by climate change and the need to take proactive action;
  - b. Promotion of a cultural shift towards good practices in the use of marine and coastal resources;
  - c. Contribution to improvements in the health of critical ecosystems for fishing and tourism on the Gulf;

- d. Creation of business opportunities in adaptive value chains that favor minority groups, including artisanal fishers and tourism microentrepreneurs, without excluding women (e.g., clam-diggers);
- e. Enhanced awareness for diverse actors about the threat of climate change and the need to reduce human impacts on the marine ecosystems that sustain social wellbeing;
- f. Development of action proposals with methods that can be replicated by institutions in other areas.

## **VII. ACHIEVEMENT OF MILESTONES AND SPECIAL FIDUCIARY ARRANGEMENTS**

- 7.1 **Results-based disbursements and fiduciary arrangements.** The executing agency will commit to the MIF's standard arrangements for results-based disbursements, procurements, and financial management, as specified in Annex 7.