



Project Identification Form (PIF) entry – Full Sized Project – GEF - 7

Towards the Transboundary Integrated Water Resource Management (IWRM) of the Sixaola River Basin shared by Costa Rica and Panama

Part I: Project Information

GEF ID

10172

Project Type

FSP

Type of Trust Fund

GET

Project Title

Towards the Transboundary Integrated Water Resource Management (IWRM) of the Sixaola River Basin shared by Costa Rica and Panama

Countries

Regional, Costa Rica, Panama

Agency(ies)

UNDP,

Other Executing Partner(s)	Executing Partner Type
Technical Secretariat of the Binational Agreement, Ministry of Environment and Energy of Costa Rica, Ministry of Environment of Panamá	Government

GEF Focal Area

International Waters

Taxonomy

International Waters, Chemicals and Waste, Focal Areas, Climate Change, Influencing models, Stakeholders, Gender Equality, Capacity, Knowledge and Research, Pesticides, Sound Management of chemicals and waste, Climate Change Adaptation, Disaster risk management, Pollution, Persistent toxic substances, Nutrient pollution from Wastewater, Nutrient pollution from all sectors except wastewater, Strategic Action Plan Implementation, Coastal, Freshwater, River Basin, Biomes, Mangrove, Coral Reefs, Transboundary Diagnostic Analysis, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Demonstrate innovative approach, Convene multi-stakeholder alliances, Beneficiaries, Communications, Awareness Raising, Public Campaigns, Education, Behavior change, Indigenous Peoples, Private Sector, Individuals/Entrepreneurs, SMEs, Large corporations, Local Communities, Civil Society, Community Based Organization, Non-Governmental Organization, Academia, Gender Mainstreaming, Sex-disaggregated indicators, Gender-sensitive indicators, Women groups, Gender results areas, Capacity Development, Participation and leadership, Access and control over natural resources, Learning, Indicators to measure change, Adaptive management, Theory of change, Enabling Activities

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 1

Duration

48 In Months

Agency Fee(\$)

416,690

Submission Date

4/4/2019

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
IW-3-5	GET	1,462,070	6,200,000
IW-3-6	GET	1,462,070	6,200,000
IW-3-7	GET	1,462,070	6,200,000
	Total Project Cost (\$)	4,386,210	18,600,000

B. Indicative Project description summary

Project Objective

To strengthen transboundary multi-stakeholder action in the Sixaola River Basin shared by Costa Rica and Panama to restore riverine and coastal ecosystems, reduce pollution from agricultural production and reduce risks from hydrometeorological disasters.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. Governance instruments improved for joint integrated management of Sixaola Binational River Basin.	Technical Assistance	1.1 Common understanding of the transboundary water and environmental issues, challenges and opportunities affecting the Sixaola river basin and agreed strategy for basin restoration and protection.	<p>1.1.1 Transboundary Diagnostic Analysis (TDA) of the Sixaola River Basin prioritizes threats to this bi-national watershed identifying their immediate and root causes as technical input to preparation of the SAP.</p> <p>1.1.2 The Strategic Action Programme (SAP) for the period 2022-2032 developed and approved by the board of the Technical Secretariat of the Border Development Agreement (MIDEPLAN and MEF).</p> <p>1.2.1 Four Inter-institutional and multisectoral coordination working-groups convened from CBCRS are strengthened to:</p> <p>i) Promote agricultural best practices among producers to reduce pollution risks.</p> <p>ii) Coordinate Binational riverine and coastal ecosystem pollution monitoring programmes by agriculture and tourism sector stakeholders and partners in line with SAP.</p>	GET	2,078,042	3,600,000
		1.2. The Binational commission of the Sixaola River Basin (CBCRS) role as facilitator of IWRM joint actions by public and private sector stakeholders is strengthened.				

iii) Lead restoration campaigns and action plans of prioritized areas identified through the TDA along the river basin.

iv) Long term operation strategy of early warning systems for floods in both countries.

1.2.2. Strategy for awareness raising, participation and articulation among key private sector decision-makers, local government and civil society stakeholders.

1.2.3 Training of key stakeholders (public and private) on ecosystem-based management of coastal and riverine ecosystems.

1.2.4 Financial sustainability strategy under implementation to ensure long term funding of bi-national, national and local coordination structures and operations.

2. Demonstrative pilot projects stimulate collaborative work, replication and implementation and build capacity, experience and support for SAP implementation	Technical Assistance	<p>2.1 Demonstrative pilot interventions generate global environmental benefits in the Binational Sixaola River basin measured as:</p> <p>Increased forest cover in the river margins of the Sixaola river basin through restoration with species selected for ecosystem-based adaptation to climate change.</p> <p>Improved land management in the agricultural sector</p> <p>Improved water quality in the Sixaola river basin.</p> <p>Improved knowledge and skills to adopt best environmental practices in plantain and banana production</p>	<p>2.1.1 Four binational Programmes implemented by local stakeholders and community-based organizations advance targets of the SAP on:</p> <p>a) Piloting of Land Management Tools (i.e micro-corridors, live fences, protection zones; establishing nurseries of endemic species) in productive farms of the binational basin</p> <p>b) Restoration campaign along Sixaola river banks by community-based organizations.</p> <p>c) Adoption and implementation of low polluting production best practices by producers of <i>Musa spp.</i> crops (banana and plantain) and promotion of organic Cacao and Banana production through the PNAO (Programa Nacional de Agricultura Orgánica-MAG)</p> <p>d) Improved waste water treatment and organic solid waste management practices by tourism and agricultural sector stakeholders and partners that reduce pollution of binational riverine and coastal ecosystems</p>	GET	1,000,000	7,100,000
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3. Flood Risk Management	Technical Assistance	Capacity of communities and local organizations to respond to flood risks in the Sixaola river margin is strengthened.	<p>3.1 Binational early warning systems reactivated and strengthened that include:</p> <p>3.1.1. Hydrogeological and meteorological model identifies the thresholds to determine activation of warnings in strategic sites of the binational river basin.</p> <p>3.1.2. Training program on skills to respond to emergencies and how to interpret hydrometeorological models and activate warnings when modelled thresholds are met.</p> <p>3.1.3. Sites and catchment areas for monitoring and early warning methods for floods in both countries have been selected</p>	GET	659,581	6,000,000
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4. Knowledge Management	Technical Assistance	4.1 Improved knowledge, practice and aptitudes of key stakeholders regarding binational collaborative action to restore coastal and riverine ecosystems; control pollution and reduce vulnerability to flood risks.	4.1.1 Best practice and lessons from the pilots systematized, accessible and available to all stakeholders in the region, translated and in culturally adapted formats. 4.1.2 Monitoring and evaluation system with impact indicators for the project is established. 4.1.3 Four publications & IW:LEARN Experience/Results Notes documenting project lessons have been widely disseminated 4.1.4 Website for dissemination of lessons and best practice as main articulator of IWRM, linked to partners' portals and IW:LEARN. 4.1.5 Binational exchanges to systematize lessons learned through demonstration projects, and participation in GEF international waters conferences (IWC) and other GEF IW:LEARN activities.	GET	439,720	1,400,000	
Sub Total (\$)					4,177,343	18,100,000	
Project Management Cost (PMC) ⓘ							
					GET	208,867	500,000
					Sub Total(\$)	208,867	500,000
					Total Project Cost(\$)	4,386,210	18,600,000

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Government	MOPT-CNE Costa Rica	Grant	Investment mobilized	5,000,000
Government	CONAVI Costa Rica	Grant	Investment mobilized	2,500,000
Government	SINAPROC Costa Rica	Grant	Investment mobilized	800,000
Government	IFAM Costa Rica	Grant	Investment mobilized	1,500,000
Government	Municipality Talamanca Costa Rica	Grant	Investment mobilized	400,000
Government	Municipality Changuinola Costa Rica	Grant	Investment mobilized	200,000
Government	Municipality Bocas del Toro Panama	Grant	Investment mobilized	200,000
Government	MEDUCA Panama	Grant	Investment mobilized	5,000,000
Government	Other Government institutions Panama	Grant	Investment mobilized	3,000,000
			Total Project Cost(\$)	18,600,000

Describe how any "Investment Mobilized" was identified

• The MOPT investment corresponds to CNE's institutional budget granted by the emergency decree n° 39056 of 2015. Funding for 2019-2022 will be used to develop protection and channeling works for flood mitigation in the Telire and Sixaola rivers. • CONAVI investment is related to the construction of the new binational bridge over the Sixaola River. The construction of the bridge is financed by "Fondo de Infraestructura para Países de Mesoamérica y el Caribe" (Yucatán Fund) with an investment of more than \$25,000,000. A total of \$2,500,000 will be allocated for environmental management and community participation and capacity building. • SINAPROC investment relates to emergencies for environmental risks. • Costa Rica's Municipal Development and Advisory Institute (IFAM) allocates funding for the improvement of the Municipal System through the provision of technical assistance, financing and training services. IFAM annual budget is approximately \$38,000,000 and will allocate \$500,000 annually for risk and environmental management to the Talamanca Municipality with a total investment of \$2,500,000 for 5 years. • Municipality of Talamanca investments are related to the environmental risk and management in the next five years that match project outcome. • Both the Municipalities of Changuinola and Bocas del Toro investments are related to risk management (2019-2023) that match project outcomes. • The investment of the Ministry of Education of the Republic of Panama (MEDUCA) corresponds to 22 projects totaling around \$ 38,000,000 in Bocas

del Toro as of 2019 for five years. It includes environmental education activities and provision of biology laboratory equipment, and support to the Technology Educational Program that equips schools with technological equipment and systems. These activities are related to the conservation and management of natural resources and the environment through environmental education in the Bocas del Toro Province with emphasis in the La Amistad International Park (PILA) Protected Areas, Bocas del Toro Archipelago and the rest of the province with the support from the TBZ Foundation. • The Government of the Republic of Panama investment corresponds to the public budget of IDAAN and CONADES allocated to the development of sanitation infrastructure in Bocas del Toro Province including aqueducts and sewage systems.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Regional	International Waters	NA	4,386,210	416,690	4,802,900
Total GEF Resources(\$)					4,386,210	416,690	4,802,900

E. Project Preparation Grant (PPG)

PPG Amount (\$)

150,000

PPG Agency Fee (\$)

14,250

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)
UNDP	GET	Regional	International Waters		150,000	14,250
Total Project Costs(\$)					150,000	14,250

Core Indicators

Indicator 7 Number of shared water ecosystems (fresh or marine) under new or improved cooperative management ⓘ

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Shared water Ecosystem	Sixaola / Salinas Aquifer			
Count	1	0	0	0

Indicator 7.1 Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation (scale of 1 to 4; see Guidance)



Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
Sixaola / Salinas Aquifer	1			

Indicator 7.2 Level of Regional Legal Agreements and Regional management institution(s) (RMI) to support its implementation (scale of 1 to 4; see Guidance) ⓘ

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
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Sixaola / Salinas Aquifer	1			
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Indicator 7.3 Level of National/Local reforms and active participation of Inter-Ministeral Committees (IMC; scale 1 to 4; See Guidance) **i**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
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Sixaola / Salinas Aquifer	1			
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Indicator 7.4 Level of engagement in IWLEARN through participation and delivery of key products(scale 1 to 4; see Guidance) **i**

Shared Water Ecosystem	Rating (Expected at PIF)	Rating (Expected at CEO Endorsement)	Rating (Achieved at MTR)	Rating (Achieved at TE)
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Sixaola / Salinas Aquifer	1			
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Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment **i**

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	15,000			
Male	15,000			
Total	30000	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Part II. Project Justification

1a. Project Description

1a. Project Description:

1. The Sixaola river basin is located in the border zone between Costa Rica and Panama, covering an area of 2,848.3 km²; 19% of this territory is located in Panama and 81% in Costa Rica. The basin can be divided into three main areas: a larger, sparsely populated and mostly forested upper sub-basin (204,000 ha.); a middle sub-basin comprised of the valley of Talamanca, mostly populated by indigenous groups (51,000 ha.), and the smaller and more developed lower sub-basin of the Sixaola valley (34,000 ha.) which contains the largest portion of the Basin's population estimated at 33,500 inhabitants. The basin includes portions of the municipalities of Talamanca (Costa Rica) with an area of 2,809.93 km²; Bocas del Toro and Changuinola (Panama) with 430.7 km² and 4,016.5 km², respectively. The basin contains several ecosystems ranges from the Caribbean seashore up to 3820m.
2. The Sixaola river Basin has outstanding biodiversity and terrestrial ecosystem of global importance. According to the Holdridge classification, this basin includes eight life-zones and is recognized for its high biodiversity and cultural value. It represents one of the few extensive areas of virtually pristine forest in Central America and hosts an impressive density of endemism. The central mountain range of Talamanca contains at least 10% of the main types of habitat on the planet. The mountainous region has been classified as one of the 200 eco-priority regions of the world, defined by the World Wildlife Fund. Ecosystems present include tropical forests, pre-montane forests, cloud forests and tropical jungles and paramos. This area has a high endemism, including 975 species of plants and 1077 superior vertebrates (birds, mammals, amphibians and reptiles). It also harbors important populations of endangered species which are considered a conservation priority, and offers critical resting, feeding and breeding grounds for diverse migratory bird species.
3. The Sixaola River Basin is part of the Isthmus Caribbean freshwater ecoregion. The Sixaola River drains from the ridge of the Talamanca mountain range (3,821 masl) with three large tributaries: Telire river, Coen river and Yare river. These three rivers converge and interlace in an internal delta in the upper Talamanca Valley, generating unique conditions that foster a high freshwater biodiversity. In the Sixaola-Changuinola Ecological Drainage Unit there are three endemic fish species and 26 amphibian species that fall under some category of the IUCN red list and five reptiles, including caimans and crocodiles. In addition, the ecosystems of the wetlands and their surroundings protect several threatened species of mammals such as the otter (*Lontra longicaudis*), the collared peccary (*Pecari tajacu*), the ocelot (*Leopardus pardalis*), the puma (*Puma concolor*), the jaguarundi (*Puma yagouaroundi*) and several species of waterfowl, especially herons (*Ardea Herodias*). Freshwater and brackish water wetlands, and especially coastal lagoons, are critical habitats for the reproduction and protection of species such as the royal tarpon (*Genycharax tarpon*), the most important species for sport fishing in the Caribbean of Costa Rica, other commercial fish species and the manatee (*Trichechus manatus*).

4. The Sixaola River drains to the Caribbean Sea. The marine area of the Sixaola Basin is part of the Central Caribbean Ecoregion, the most complex and largest of the North-Western Atlantic Marine Province. The Caribbean Large Marine Ecosystem (CLME), is a global marine biodiversity hot spot characterized by coral reefs (10% of the world), mangroves (20% of the world remaining), and seagrasses (at least 25% to 50% of the world may be located within the CLME), and other environments, such as sandy beaches and rocky shores. Three ecosystem subtypes sustain major fisheries and key biodiversity hotspots in the CLME region: the reef ecosystem and associated habitats; the pelagic ecosystem; and the continental shelf ecosystem. These marine tropical ecosystems incorporate a high diversity of associated flora and fauna. A total of 12,046 marine species (approx. 1,400 species of fish) has been reported for the Caribbean region. The CLME has an overall moderate productivity rates that show considerable variability over space and time. On the other hand, only coral reefs ecosystems in the Caribbean generate US\$4 billion of income to the region each year (shoreline protection, fish nurseries and habitat, tourism activities).

5. Among marine and coastal ecosystems, mangroves stand out as critical habitat for the reproduction of numerous marine species as they offer a natural protection against erosion, tidal swells, floods and climate change, in addition to having key role in carbon sequestration. Seagrasses form another relevant coastal marine ecosystem known as meadows or seagrass beds. This ecosystem provides a multitude of ecosystem services, such as serving as fish nurseries, which contribute to nutrient recycling among many other ecosystem functions. Seagrasses provide feeding grounds for sea turtles (*Chelonioides spp.*), manatees (*Trichechus manatus*), fish, sea urchins (*Echinoidea spp.*), among many other marine animals present in the area. In the Caribbean, there are three seagrass species identified in Costa Rica and four in Panama. They alternate with coral formations and sand banks, forming reef systems that house associated species such as lobsters (*Palinurus elephas*), giant snail (*Lobatus gigas*) and fish of commercial interest. On the Costa Rican side, there is the largest and most developed reef complex in Costa Rica, which extends from Punta Cocles to Punta Mona. These reefs are an important link in the marine corridor of the south of the Caribbean as they act as bridges between the extensive shallows and keys of the Mosquito Coast in Nicaragua and the reefs of Bocas del Toro in Panama. Additionally, there are nesting beaches of four species of marine turtles (*Chelonioides spp.*), which are in danger or critical danger of extinction and the presence of unique cetaceans such as Guyana dolphin (*Sotalia guianensis*), bottle nose dolphin (*Tursiops truncatus*), among others. The former one is insufficiently known according to IUCN. Species found, including coral (*Cnidaria spp.*), giant snail (*Lobatus gigas*), sea horses (*Hippocampus spp.*) and manatees (*Trichechus manatus*), and several fish are considered vulnerable. There is also the presence of invasive species such as lionfish (*Pterois spp.*), which are displacing local fauna.

6. Sixaola River Basin sustains important artisanal fisheries. Lobster (*Palinurus elephas*) is the more profitable commercial fishery in the marine area of the binational river basin. Other species are caught such as mackerel (*Carangidae spp.*), snapper (*Lutjanus campechanus*), crab (*Callinectes sapidus*) and octopus (*Octopoda spp.*) whose main destinations are local trade, self-consumption, direct sales and for intermediaries. The volumes of capture are low reaching the snapper at approximately 25,000 kg in Costa Rica, but the value of the lobster is higher, although its annual production does not reach 500 kg. [1] However, in Panama, it reaches 25,000 kg per year of lobster tails. Law and CITES authorities in both countries prohibit harvesting Giant snail (*Lobatus gigas*) and sea cucumber (*Holothuroidea spp.*). The most important species for sport fishing is royal tarpon (*Genycharax tarpon*).

7. The marine ecosystems are influenced by a branch of the Caribbean current that forms a cyclonic whirlpool known as the Panama-Colombia gyre that runs along the coasts of Costa Rica and Panama. When this swirl occurs, the air masses absorb more heat and create a very humid climate with average surface water temperature of 28 degrees Celsius, and salinity between 34 and 36 per thousand.

8. The area includes different biodiversity conservation categories, including La Amistad International Park (PILA), a World Heritage Site and Biosphere Reserve due to its unique biodiversity and cultural values. It is also recognized as an Important Bird Area (IBA) and Key Area of Biodiversity (KBA). The San San Pond Sak wetland in Panamá and the coastal lagoon Gandoca-Manzanillo in the National Wildlife Refuge, in Costa Rica, are both listed Ramsar Sites. Cahuita in Costa Rica and Isla Bastimentos National Parks in Bocas del Toro as well as the Bosque Protector Palo Seco in Changuinola, both in Panamá, are all protected areas.

9. The basin has 33,650 inhabitants in 2018 (IUCN). The majority of the population is of mixed origins, as migrant populations from Jamaica, China and the Arabian Peninsula, mingled with local indigenous groups. The main ethnic groups are Bribri, Cabécar and Ngäbe in Costa Rica; and Bribri, Naso and Ngäbe Buglé in the Panama. They are mostly located in the middle and upper part of the Sixaola Basin. Indigenous groups face lower social indicators compared to other populations; recent studies on food security showed that 60% of households in indigenous territories lives in food insecurity for 3 months of the year. The majority of households have difficulty accessing food because of shortage of sources of income. There are also six officially recognized indigenous territories, four in Costa Rica (the indigenous reserves Bri Bri of Keköidi, Talamanca, Cabécar of Talamanca and Telire) and two in Panama (Bri Bri and Naso).

10. The main economic activity and job generator in the region is banana production for export; most of the area and investments belong to large companies like Bocas Fruit Company in Panama and the Corporación Bananera Nacional of Costa Rica. The upper basin banana plantations are in the hands of small and medium farmers. The predominant form of livelihood of small land tenants is bean and corn production in the lower area of the basin; plantain and cocoa production in higher areas. The region has historically been in a peripheral and marginal position due to its remoteness from the capital of the two countries. Low ranking social and economic indicators of the Basin, compared with other regions from the rest of Costa Rica and Panama, is the result of decades of low investment and insufficient political attention. Ecotourism is another important economic activity that has grown over the years, however it is still not well consolidated due to difficult access to communities.

11. The Agreement between the Government of the Republic of Costa Rica and the Government of the Republic of Panama on Cooperation for Border Development is the main legal instrument that promotes cross-border development. It was signed by the Presidents and Ministers of Foreign Affairs of both countries in the city of Sixaola (Costa Rica) on May 3, 1992. The National Assembly of Panama ratified it with Law No. 16 of August 17, 1994. The Legislative Assembly of Costa Rica did so on July 10, 1995. The Border Agreement entered into force on July 27, 1995. The aim is to "expand, improve and deepen cooperation relations in all fields, to contribute significantly to the development and social, economic improvement, commercial, environmental and political in general of the border region and strengthen the integration process between both countries, as well as to promote the "joint (binational) execution of programs, projects or pre-investment, investment and technical assistance activities in the border area". The agreement establishes a technical secretariat led by the Ministry of Planning and Political Economy (MIDEPLAN) from Costa Rica and the Ministry of Economy and Finance (MEF) in Panama. The technical secretariat provides oversight over the border agreement and reports directly to relevant ministries and has supported the implementation of development interventions in the border. The technical secretariat has established working groups that have been active addressing binational challenges. One of these working groups is the Binational Commission of the Sixaola River Basin (CBCRS).

12. CBCRS is a multisectoral and interinstitutional body created to work addressing binational environmental and risk management challenges. The CBCRS was created in 2009 as part of a GEF project implemented by IADB. Its governance structure consists of an assembly composed of the Technical Secretariat of the Binational Agreement, and institutions and stakeholders from both countries. The CBCRS has established working groups that work to implement a Strategic Territorial Development Plan 2017-2021 and an Investment plan. This project will be led from the Technical Secretariat of the Binational Agreement and strengthen the action of one of its commissions (CBRCS).

Global environmental problems, root causes and barriers to be addressed

Threats	Environmental impacts
The expansion of agricultural commodity production in the basin, has resulted in a loss of forested areas along riverbanks, ecosystem connectivity (fragmentation of secondary forest), and protection zones.	<p>Loss of forest cover and wetlands; forest fragmentation and loss of coastal ecosystem connectivity due to agricultural encroachment.</p> <p>Illegal encroachment by producers onto riverbanks and protection zones limits biodiversity conservation efforts and fragments the landscape, affecting nearby Key Biodiversity Areas (KBAs).</p> <p>Uncontrolled expansion of intense agricultural practices has also resulted in the loss of quality habitat for birds (including migratory species), small mammals, and pollinators, and has increased the vulnerability of species that must adapt to highly altered ecosystems.</p> <p>Modification and degradation of natural habitats is caused by a range of human activities, mainly coastal development, tourism, aquaculture and fisheries. Key affected habitats are coastal wetlands (estuaries and lagoons), mangroves and coral communities.</p>
Agrochemical runoff into water systems	<p>Most of these agrochemicals are used in banana production and are affecting a vast array of river fish species and the habitat of the Manatee and other species of global importance.</p> <p>Bananas require an average of 50-60 applications of nematicides per year per farm.</p> <p>The use of agrochemicals for banana crop production in the lower Sixaola basin (lower Sixaola Valley in both countries, with small areas dedicated to this activity in some parts of the San San basin in Panama, and the Sandbox River basin in Costa Rica), including aerial spraying, severely affects rivers and streams directly. Agrochemicals are used as well in plantain plantations in small private farms concentrated in the Talamanca Valley and Alta Sixaola, affecting Telire river. Both crops use plastic bags impregnated with pesticides that are used for the ripening of banana bunches.</p> <p>IRET Lab, a specialized chemical laboratory of the National University of Costa Rica, identified 30 different agrochemicals present in Caribbean freshwater sources in 2017. These chemicals are affecting a vast array of river fish species and the habitat of the Manatee and other species of global importance. The agrochemicals (insecticides, nematicides, fungicides, herbicides and fertilizers) have negative effects in the middle and lower Sixaola basin affecting the health of the human population, terrestrial and aquatic ecosystem, coastal wetlands, such as San San Pond Sak and coral reefs.</p> <p>The presence of agrochemicals in the water directly affects freshwater fauna such as macroinvertebrates that are a source of food for other species such as birds, otters and fish. Also, it affects the composition of plants associated with aquatic ecosystems that are the source of food for manatee.</p> <p>The use of fertilizers applied to crops stimulates the growth of algae in rivers and streams through a eutrophication process, which produce a decrease in dissolved oxygen in the water or hypoxia. Hypoxia leads to the mass death of fresh water biota.</p>
Adverse effects due to climate change	The Sixaola river basin's population and economic activities are increasingly affected by recurrent floods. The growth of urban areas in the basin is also being affected by recurrent floods.

Climate change will lead to higher precipitation and increased flood risk of floods

an occupation and economic activities in flood-prone areas, coupled with the projected increase in rainfall intensity in the Caribbean area are contributing to heightened risk scenarios in the project area. Increased climate variability and the Sixaola river's meandric behavior leads to frequent floods and sudden changes in the river channels. These risks are compounded by the projected increase in sea level due to climate change, which will lead to increases, both in the periodicity and the gravity of floods impacts.

The farmers of the Sixaola basin have mostly been affected by two types of weather-related hazards: droughts and extreme rainfall events. From 1970 to 2015 the region has registered 53 hydrometeorological events, most of which registered as floods. In mid-2014 there was an unusually extensive dry event. These hazards are increasing related to the adverse effects of climate change and climate variability, which bring about shifts in rain patterns and increases in average temperatures. As a result, floods are on the rise, as are landslides, soil erosion, loss of crops or crops along with a higher incidence of pests and diseases in cocoa and bananas.

In Costa Rica, poor land-use planning and growing tourism activities in coastal areas have led to an over-exploitation of aquifers, with the resulting salinization of freshwater sources. The prevalent use of septic tanks in coastal areas where high water tables also increases the risk of water pollution in artesian wells and water supplies for local communities and tourism businesses. Floods also impact aquifers with contaminated water due mainly to the lack of vegetation in recharge zones. In Panama, the highlands of the mountains are affected by subsistence grazing and maize production.

The pressure on land for monocropping of export commodities such as bananas drives deforestation of Sixaola River catchment areas, which contributes to eliminating the natural barrier that mitigate the impact of flooding, affecting in turn local communities downstream.

Impacts expose local populations to potential loss of livelihoods (small farms and crops), infrastructure damage (housing, roads, bridges, schools, rural aqueducts), and to economical and human losses in some occasions, due to flooding and landslides.

Extreme events such as floods due to changes in rainfall patterns can affect freshwater and coastal ecosystems as flood risk is increasingly compounded by sea level rise and storm surges, leading to recurrent loss and damage.

Soil loss and siltation of river beds due to inadequate agricultural practices and limited flood protection infrastructure works in the basin lead to increase flood related damage.

Geomorphological characteristics of the Sixaola river floodplain favor high sediment loads in stream run-off which contribute to siltation of river channels. Increased bedloads reduce the hydraulic capacity of the river, causing an increase in flood risk in the middle and lower parts of the basin.

Limited soil conservation strategies by agriculturalists in the binational basin has led to heightened soil erosion processes which contribute in turn to reduce surface water resources, degrading natural habitats and biodiversity.

Soil erosion and sedimentation are particularly problematic in the undulating or sloped lands of the upper and middle sections of the basin, where agricultural expansion has led to land use changes along riverbanks and protection zones.

Increased siltation of the rivers directly alters the habitat of the manatee, sometimes producing physical barriers or decreasing the depth of lagoons and canals where it lives.

Siltation and pollution with toxic agrochemicals are the main cause of the degradation and die-off of coral reefs in the South

h Caribbean of Costa Rica. The sediment plume of the Sixaola River extends several kilometers and contains high concentrations of suspended sediments. Siltation hinders the penetration of light on the seabed and affects the state of conservation and coral cover. The sedimentation alters the species composition of the reefs for example with an increase in the incidence sponges that have greater tolerance than corals and affects the morphology of the coral colonies. Also, as the run off from agricultural fields is high in fertilizer content, the resulting nutrient forcing favors the proliferation of macroalgae (seaweed) which occupy the surface impairing the settlement of the coral larvae.

13. The main threats to the Sixaola river basin are deforestation and land use change, as they have a direct bearing on the quality and quantity of freshwater resources in the watershed. Loss of adequate forest cover and inadequate agricultural practices contribute to high soil erosion rates and to increased sedimentation. In turn, increased siltation of river channels, with an increase in rainfall frequencies and intensity, lead to recurrent flooding downstream.

14. Deforestation in the lower Sixaola basin is closely correlated with the expansion of large banana plantations and other monoculture cropping system. Commodity production and its associated infrastructure and services have been present in the Sixaola river basin for over a century, but the intensification of export agriculture production since the 1990s has impacted these freshwater ecosystems and related coastal marine ecosystems.

15. Projected adverse effects from climate change in the region will entail high precipitation events in reduced time intervals, which will severely impact exposed productive areas, thus increasing landslide risks, Increased precipitation will also favor conditions for fungi and bacterial growth, fostering the spread of diseases in banana and plantain plantations, such as Black sigatoka (caused by the fungus of the *Mycosphaerella* species).

16. Flood risks directly affect human settlements along the Sixaola and Telire rivers due to the overflowing of the rivers due to the lack of vegetation barriers on the edges of the river. When seasonal floods coincide with coastal storms and high tides, these can cause extensive coastal flooding, which where most of the tourism infrastructure is concentrated. Climate change will most likely aggravate these coastal flooding risks, as sea level rise will add to this dangerous mix of hazards. The Sixaola area has a significant history of flood events, which have resulted in significant infrastructure and economic losses. The flood event with the greatest impact in recent history happened in 2008, which left the area cut off from the rest of the country for weeks resulting in many losses. An event like this could happen again in the near future that, together with the rise in average sea level, would create massive coastal flooding. According to hydrological models generated for the coastal area of the Sixaola basin, it is estimated that at flood stage the river would rise four meters from its normal level, resulting that much of the mouth of the Sixaola river and the surroundings of the city would disappear under flood waters. [ii]

17. Most local communities in the lower Sixaola basin are settled in high risk, flood-prone areas. Although there are early warning systems in place, they do not work regularly and require strengthening of capacities as well as greater binational coordination and equipment provision and renovation. None of these early warning systems is based on hydrogeological and meteorological models that can help activate warnings.

18. The improper use of chemicals and agro-chemicals has also led to accelerated soil degradation and widespread pollution of surface and ground waters in Sixaola basin. In addition, plastics used for ripening banana and plantain bunches impregnated with pesticides are discarded as trash without proper management and contaminate water bodies, ending up in coral reefs with lasting impacts on marine life.

Barriers	Current Situation
1) Incomplete information to support binational management of key regional issues.	<p>There are major information gaps about key problems, their root causes and impacts, particularly regarding pollution of key biodiversity areas and binational waters. A previous GEF-IADB project generated important information that allowed for binational action planning, however the existing diagnostics fall short from a full TDA, not all the causal roots have been established for problems.</p> <p>Existing information is incomplete, dispersed and sectoral. For example, there is no regular monitoring of agrochemical pollutants present in potable aqueducts for human consumption, or about and the impact of these pollutants on the coastal and marine ecosystems of the binational basin. There are also limitations for binational information sharing and analysis. Existing mechanisms of coordination require expanding action onto restoration, and the monitoring of agrochemical contamination and climate change related risk mitigation. There is insufficient information, and the absence of a repository of information limits the transfer of knowledge among peers, sectors and territories around regulations, reporting protocols, monitoring systems for the presence of agrochemicals in water, and practices for the prevention of contamination by agrochemicals in water (among others).</p>
2) Insufficient capacity within the existing Sixaola binational river basin governance structure to articulate multi-stakeholder and inter institutional actions	<p>There is a limited understanding of binational ecosystem-based management (EBM) and transboundary integrated water resource management (IWRM). EBM has been incorporated at the national level in both countries and there have been efforts to advance binational collaborative management. However, local stakeholders have an incipient understanding of the benefits of EBM approaches at the binational or LME scale. Binational coordination authority has little influence on pollution control efforts, production best practice adoption or adaptation to climate change. Institutional and sectoral competences regarding agrochemicals and pollution in both countries are unclear and generally their use is under regulated and this leads to inaction, lack of coordination for the prevention, monitoring and attention of incidents. For example, the Costa Rica, the Environmental Administrative Court may take 5 years to resolve court cases of pollution.</p> <p>Both countries face similar challenges of lack of clarity in terms of the respective competencies of institutions in the environmental sector, aqueducts and sewage systems, the agro-food sector, the health sector and the judiciary regarding incidents of agrochemical presence in water sources and poisoning of human consumers. There are several contradictions at the national level, where overlaps or gaps between the water authorities, ministries of environment, environment impact regulators, and water service providers are common. There is a different jurisdiction according to the different governmental instances that prevents the follow-up or coordination against multi-sectoral problems. This further limits the capacity of the binational governance bodies to coordinate actions to combat river borne pollution.</p> <p>There is also a need to strengthen interinstitutional coordination between the central</p>

	<p>government, municipalities, private sector, and the general public's understanding of integrated watershed management and in particular the importance of combatting waterborne pollution.</p> <p>There are gaps and a lack of complementarity between the existing regulations for risk management, pollution, production practices and basin management.</p>
<p>3) Agriculture and tourism sector stakeholders do not work collaboratively to address common threats</p>	<p>Agricultural planning and sectoral work segmented and seldom coordinated with tourism development planning and promotion in both countries. High agrochemical use at the higher basin areas severely impacts the ecosystems of the lower basin and coastal area of influence, particularly in Gandoca-Manzanillo and Bocas del Toro, which depend on ecotourism as a main source of revenue. Tourism development has also generated impacts to coastal ecosystem, particularly because of pollution, resource use and impacts of land use change and sedimentation.</p> <p>Development interventions in the region have concentrated on agricultural support or ecotourism development, and while some landscape approaches have been pursued such as the Talamanca Caribe Biological Corridor, which combined interventions by both agricultural and tourism sectors.</p> <p>Insufficient promotion of Land Management Tools such as micro-corridors, live fences, and protection zones by binational basin producers have reduced the possibility of linking ecotourism goals and activities within agricultural landscapes.</p> <p>Finally, there are missed opportunities by both sectors as the priority areas for river ecosystem restoration along Sixaola river banks have been identified by IUCN but no programme is currently in place to involve basin stakeholders and ecosystem service beneficiaries to commence restoration efforts.</p>
<p>4) Local producers have insufficient skills to address climate change risks associated with high precipitation and floods.</p>	<p>There is currently no official instrument to standardize the design of early warning systems (EWS), establishing clear responsibilities their operation and sustainability. In previous efforts in early warning systems, local teams were equipped with communication equipment but there is no hydrogeological or meteorological modelling that could determine the thresholds for the activation of warnings at strategic sites of the binational river basin. Thus, the existing network of risk warning communicators lack the required protocol for issuing emergency alerts.</p> <p>Existing networks of community volunteers working on risk prevention and emergency response need to be strengthened and many lack the necessary skills or knowledge to adequately respond to emergencies or on how to interpret hydrometeorological models and activate warnings when modelled thresholds are met.</p> <p>The absence of hydrometeorological models also means that the existing sites and frequency of monitoring need to be revised. Climate change may well require the selection of new measurement sites and monitoring requirement.</p> <p>Binational basin management structures need to build on existing early warning systems to develop an articulated system that operates in both countries.</p>

19. The baseline projects are valued at \$97,372,063. These are broken down into national government and international cooperation projects.

International Cooperation

20. The project called Ecosystem-based approaches to climate change adaptation: strengthening the evidence and informing policy (EbA Evidence and Policy) is being implemented between 2015 and 2019 with a total \$1,595,320 (€ 1,815,760.35) investment in 12 countries in Asia, Africa and Central and South America. EbA project is jointly implementing by the International Institute for Environment and Development (IIED), the International Union for the Conservation of Nature (IUCN) and the UN Environment World Conservation Monitoring Centre (UNEP-WCMC). The project aims to gather practical evidence and develop country-specific policy guidance on EbA, and to promote EbA at international level. In the Sixaola River basin operate The Adaptation, Vulnerability and Ecosystems (AVE) project in Costa Rica (and an area of Panama). EbA activities included: productive transformation of local farms through crop diversification and measures to restore local biodiversity and hydrological functions; strengthening local water governance structures; establishing demonstration sites for soil conservation practices; and establishing local timber and fruit tree nurseries. AVE project activities were implemented with the engagement of a local NGO, Corredor Biológico Talamanca Caribe. Evidence will be used to support the Climate Change Directorate in the Ministry of Environment and Energy of Costa Rica and other on-going initiatives. Main donor is the International Climate Initiative (IKI).

21. Also with IKI funding, IUCN ORMACC is implemented the project AVE: Adaptation, Vulnerability & Ecosystems in six countries including, including demonstrative projects in Sixaola Basin in both countries, Costa Rica and Panama, between 2014 and 2018. With a total investment of \$4,700,000 in six countries, the project's main objective is to collect, synthesize and use existing evidence on the benefits derived from ecosystem-based adaptation (EbA). Different actors at multiple levels are involved in developing knowledge and supporting different results, which will allow adopting an effective approach to EbA in the design of policies, governance structures and decision-making processes. The project will develop a monitoring and evaluation methodology to demonstrate EbA's contribution to climate change adaptation, improved livelihood, environmental conservation, and food safety.

22. Supporting the National System of Conservation Areas (SINAC) and MINAE, local governments and local people, GIZ is developing the project Implementation of the National Bio-Corridor Programme (PNCB) in the context of the National Biodiversity strategy of Costa Rica to develop its partners' capacity to cooperatively develop and implement strategy plans for the establishment and management of interlinked biotypes, including Talamanca-Caribe corridor. Support will be provided to strengthen the roles and functions of local dialogue platforms and corridor committees for the coordination of protection measures and sustainable use. A small project fund will also promote measures relating to corridor management and processes for converting agricultural production systems. The project is establishing local incentive systems and financing mechanisms (payments for ecosystem services, compensatory payments). IKI is investing \$6,804,130 (5.978.802 €) in this project in Costa Rica which aim to guarantee sustainable financing and implementation of strategic plans for 45 biological corridors.

23. Funding by IKI and implemented by IUCN-Switzerland, the project Climate Change Governance Capacity: Building Regionally- and Nationally-Tailored Ecosystem-Based Adaptation in Mesoamerica had a total investment of \$2,869,460 (€ 2,513,493) between 2010 and 2013. The project enhanced the statutory instruments supporting responses to climate change. A particular focus was placed on optimizing transboundary water resources management. Project activities gave policy-makers and other relevant players the necessary knowledge about ecosystem-based management methods, and institutionalized coordination mechanisms for water use, and promoted exchange among policy-makers, technical experts, academia and civil society, and carried out pilot activities which tested climate change adaptation instruments in the water sector. The project was implemented in four countries including Costa Rica and Panama in partnership with the Central American Integration System (SICA) and National Environment Authorities.

24. The GEF project Integrated Ecosystem Management in the Binational Sixaola River Basin Project invested \$3,500,000 between 2008 and 2013 in the basin. This was not a IW Foundational project and as such, did not conduct a full TDA and SAP. The project did contribute to a preliminary common understanding of threats and challenges and anchored the development of technical working groups to implement Binational Strategic Plan 2017-2021 of the Sixaola River Basin, under coordination of the Technical Secretariat of the Border Development Agreement. The project was implemented by the Inter-American Development Bank and executed by a Binational Technical Executing Unit, with support from ANAM and MINAE. Several NGOs were involved in the project such as Cooperativa de Servicios Múltiples de Cacao Bocatoreño (COCABO), Asociación STIBRAWPA Personas Artesanas de Yorkín (STIBRAWPA), UPESABO, CBTC, and CATIE.

25. Funded by the Swiss Agency for Development Cooperation (SDC) and led by IUCN BRIDGE project aims to build water governance capacities through learning, demonstration, leadership, and consensus-building, in particular in transboundary river basins, including Sixaola with an investment of \$300,000 in Costa Rica. The project supports the capacities of countries sharing river or lake basins to implement effective water management arrangements through a shared vision, benefit-sharing principles and transparent and coherent institutional frameworks. Its goal is to enhance cooperation among riparian countries by applying water diplomacy at multiple levels. In Sixaola basin, bylaws were adopted for the Sixaola Binational Watershed Commission. This was crucial in moving the process forward making the basin Commission operational. IUCN ORMACC implements the project in Mexico and Central America.

26. The USAID Regional Program for the *Management of Aquatic Resources and Economic Project (MAREA)* was a total investment of \$13,888,734 in four coastal areas in Central America, including the Cahuita-Bocas del Toro area on the Caribbean coasts of Costa Rica and Panama with an expenditure of \$750,000 and \$1,508,156, respectively in each country. Chemonics International with subcontractors has implemented field activities of MAREA project over four years (2010-2014) focusing on protecting important coastal resources, and to target both fisheries and the conservation of important species, as well as promote viable opportunities and best management practices in four marine-coastal sites that cross the boundaries between CAFTA-DR member countries.

27. Between 2011 and 2013 the *Public-Private Partnership Project Sixaola-Changuinola* was executed and financed by private businessmen and the German Government (Rewe, Chiquita, Corbana, GIZ and RUTA), with a total investment of \$1,356,520, which sought to promote alliances, contribute to the conservation of biodiversity and promote the development of the communities located in the cross-border area of the Caribbean. Activities included conservation of ecosystems, species and the protected areas of Sixaola Forest in Costa Rica and San San Pond Wetland Sak in Panama; education of the workers of plantations their families and their children on protection issues of the environment and biodiversity and sustainable production systems; exchange and the dissemination of results and good practices; and institutionalization of the public-private regional alliance.

28. In 2015, the ETEA Foundation proposed the Project Cooperation to support the Central American Strategy for Territorial Rural Development 2010-2030 (ECADERT). The Central American Agricultural Council proposed that the ETEA Foundation develop support actions in the Garífuna Afinian territory and in the trans-border territory of Talamanca - Changuinola - Bocas del Toro. A transboundary diagnostic was performed. The project was implemented with funding from the Spanish Agency for International Development Cooperation (AECID) with an investment of \$ 1,400,390 granted to the Central American Integration System (SICA).

29. The Multiphase Sustainable Development Program of Bocas del Toro - Phase II, consisted of a loan with the IDB for US \$ 34,600,000 with counterpart funding of US \$ 5,600,000. This program lasted for three years until 2008 with three components: Strengthening local management capacity; Management of natural resources and productive diversification; and Improvement of basic services and infrastructure. The Strategy of Sustainable Development of the Province of Bocas del Toro and its plan of action were elaborated during 2008.

30. The Project: "Promoting the application of the Nagoya Protocol through the development of nature-based products, benefit sharing and biodiversity conservation in Costa Rica" was implemented from 2014 through December 2018 with a total grant amount of \$ 979,566 USD. The projects main goal was to achieve fair access and benefit sharing (ABS) arrangements of parties involved in the development of two natural products derived from biodiversity and to actually tackle the need to reduce agrochemical use within the agricultural sector by testing the effect of two nature-based alternatives in banana, coffee, pineapple, potato and carrots, whose social and environmental impacts are currently high. The project results identified the potential of one of the nature-based components DMDP with more prominent results in coffee crops. Nevertheless, field experimentation showed that although natural alternatives are still not as effective as common use agrochemicals for combatting banana diseases such as Black Sigatoka, and *Radopholus* (nematode in banana), integration or substitution of these natural alternatives throughout the disease control programs may reduce the use of regular agrochemicals throughout the cropping cycle.

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National government

31. Baseline investments also include several national infrastructure projects financing mainly with own resources of the institutions and national budget with a total of \$44,268,804 since 2007. The National Institute of Aqueducts and Sewages (AyA), the Port Administration and Economic Development of the Caribbean Coast (JAPDEVA, in Spanish), the National Roads Council (CONAVI) are investing in Talamanca to develop a potable water system, including improving aqueducts for the indigenous communities of the Basin, rural road grading, and the construction of the new binational bridge over the Sixaola River. The construction of the bridge is financed by Fondo de Infraestructura para Países de Mesoamérica y el Caribe (Fondo de Yucatán) with an investment of more than \$25.000.000

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32. The Project Sustainable Production Systems and Conservation of Biodiversity Project for Panama investment is \$28,970,000 financed by \$ 9,590,000 from a grant from GEF, \$10,160,000 from the Government of Panama (in cash and in kind), \$ 720,000 of contributions from project beneficiaries and \$ 8.5 million from other sources of financing for five years (2014-2019) The Project objective is to conserve globally significant biodiversity through the improvement of the management effectiveness of the project protected areas and biodiversity mainstreaming in the buffer zones.

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33. The GEF Small Grants Programme (SGP) implemented by UNDP in Costa Rica and Panama has directly invested \$191,000 investment (2011-2015) to conserve and restore the environment while enhancing people's well-being and livelihoods with a co-financing cash of \$85,000. Several projects have been implemented in partnership with local associations, both small farmers and fishermen, in Talamanca, Changuinola and Bocas del Toro to reduce threats of the lionfish population, enhance productivity of high biodiversity agroecological system (cacao, banana y organic fruits) through improvement of a processing

plant, to develop rural ethnic tourism and cultural rescue in indigenous communities, to build capacity of small producers in artisan propagation systems of *musa* species, and to promote marine aquaculture of red snapper (*Lutjanus campechanus*) to increase economic income of artisanal fishermen, among others.

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34. Without an intervention to strengthen binational cooperation, it seems unlikely that watershed ecosystem-based management and transboundary integrated water resource management will advance in the near future. Key drivers like (i) unsustainable production practices, (ii) discharge of pollutants, (iii) soil erosion and sedimentation in riverine, freshwater and marine ecosystems, (iv) flood risk will continue deteriorating the biodiversity base of this transboundary river basin, ultimately putting human lives and livelihoods at risk.

Alternative scenario

35. The contribution of the GEF will expedite advancing towards IWRM in the binational river basin by building the foundations for collaborative regional management. Building on previous experience and ongoing initiatives, the project will contribute to strengthening the binational cooperation framework to sustain coordinated action in order to address key problems within this transboundary river basin and adjacent areas. The key contributions will be:

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36. The alternative scenario will be agreed regional actions and governance arrangements to address the main common problems that threaten coastal and marine biodiversity of the binational river basin and adjacent areas. It is expected that joint action will reduce the risk factors and contribute to conserve valuable biodiversity and sustain the range of ecosystem services that this river basin provides to Costa Rica and Panama.

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Expected outcomes and components of the project

37. The project is organized into four components, five outcomes and 16 outputs. To address the four key barriers previously mentioned, the project elements have been organized in the following way:

Barrier	Project Element
Barrier 1. Incomplete information to support binational management of key regional issues.	Preparation of a TDA and development of a collaborative information system (output 1.1.1) prioritizes threats to this bi-national watershed identifying their immediate and root causes and making emphasis on pollution control and flood risk management. Best practice and lessons learned from the pilots systematized, accessible and available to all stakeholders in the region, translated and published in culturally adapted formats (Outcome 4.1.1)

	<p>Website for dissemination of lessons and best practice and CBCRS as main articulator of IWRM, linked to partners' portals and IW: LEARN (Outcome 4.1.3 & 4.1.4)</p>
<p>Barrier 2. Insufficient capacity within the existing Sixaola binational river basin governance structure to articulate multi-stakeholder and inter institutional actions</p>	<p>Technical assistance provided to improve the skills and methods of the Sixaola River Basin Binational Commission (CBCRS) to develop a Strategic Action Programme (SAP) (Output 1.2.1); and also, to convene, facilitate and monitor progress made on specific challenges (Output 1.2.2)</p> <p>Professional support and communications outreach to develop and communicate a strategy for awareness raising, participation and articulation among key private sector decision-makers and local government stakeholders (Output 1.2.2).</p> <p>Training of public and private stakeholders on ecosystem-based management of coastal and riverine ecosystems (Output 1.2.3).</p> <p>Technical advice and participatory development of a financial sustainability strategy that includes the financial targets and actions needed for long term funding of local coordination structures and operations. (Output 1.2.4)</p>
<p>Barrier 3</p> <p>Agriculture and tourism sector stakeholders do not work collaboratively to address common threats</p>	<p>Four binational programmes implemented by local stakeholders and community-based organizations addressing the main pressing challenges of the river basin will be articulated with the SAP implementational and the binational governance bodies (Outcome 2.1.1) this will support coordination of civil society action, private sector investments by agricultural and tourism sectors as well as binational public sector planning.</p> <p>Adoption of land management tools such as micro-corridors, live fences, and protection zones; or establishing nurseries of endemic species inside farms located in the binational basin in order to reduce the risks of agrochemical runoff or the siltation of water sources (Outcome 2.1.1. a).</p> <p>Restoration campaign along Sixaola river banks by community-based organizations. (Outcome 2.1.1. b) increases natural barriers thus reducing the risk of pollutants and sediments seeping into water sources.</p> <p>Adoption of agricultural production best practices by producers of <i>musa spp.</i> crops (banana and plantain) that avoid agrochemical runoff or sediment into water sources. Develop a repository that compiles potential alternatives to reduce the chemical load in the technological package of the</p>

	<p>main crops in the area (e.g, alternating with bioprotectants) facilitating the analysis, research and the enhancement of their use through incentives. (Outcome 2.1.1. c)</p> <p>Promotion of waste management practices by tourism and agricultural sector stakeholders and partners that reduce pollution of binational riverine and coastal ecosystems (Outcome 2.1.1. d)</p> <p>Promotion of research, information, technology transfer and extension services on alternatives to the use of agrochemicals, and / or on good practices in the use of agrochemicals, as well as of better sustainable production practices for the prevention of pollution through agrochemicals and poor sanitation. (Outcome 4.1.3)</p> <p>Binational exchanges to systematize lessons learned through demonstration projects (Outcome 4.1.5)</p>
<p>Barrier 4:</p> <p>Local communities have insufficient skills to address climate change risks associated with production practices and human settlements</p>	<p>The project will provide a hydrogeological and meteorological model that identifies the thresholds to determine activation of early flood warnings in strategic sites of the binational river basin. The project will also foster systematic collection and analysis of data among local stakeholders, to design risk mitigation, adaptation and evacuation strategies including evacuation routes and safe areas, and to expand warning messages (Outcome 3.1.1)</p> <p>The skills of local stakeholders to respond to emergencies and how to interpret hydrometeorological models and activate warnings when modelled thresholds are met will be improved through training (Outcome 3.1.2)</p> <p>Existing sites and for monitoring for early warning systems for floods in both countries will be revised and new ones identified, methods for coordinated responses to these warnings will be agreed (Outcome 3.1.3).</p>

Component 1: Governance instruments improved for the joint management of the Sixaola Binational River Basin.

38. This component builds on previous GEF and binational investments to strengthen transboundary multi-stakeholder action in the Sixaola River Basin shared by Costa Rica and Panama. The strategy will be to take advantage of existing governance instruments such as the Binational commission of the Sixaola River Basin (CBCRS), and existing diagnostics and information so as to improve its scope to address challenges such as restoring riverine and coastal ecosystems. The project will update the Binational Strategic Plan 2017-2021 by adding information not previously identified adopting TDA/SAP guidance; reducing pollution from agricultural production and abating risks from hydrometeorological disasters to local populations, particularly women and indigenous groups.

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39. The component will aim to achieve two outcomes.

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1.1 *Common understanding of the transboundary environmental issues, challenges and opportunities affecting the Sixaola river basin.*

40. The project will use TDA methodology to identify gaps of information about threats to the watershed not previously identified as preparation for a new SAP. The project will help stakeholders from both countries and develop a collaborative information system to prioritize threats to this bi-national watershed and identify immediate and root causes focusing on pollution control of water sources and local flood risk management. The project emphasis on three areas of common concern is consistent with governmental development plans and binational planning will improve the level of commitment of stakeholders with high level of influence.

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41. The convening of complementary studies to complete a TDA by the Binational Commission of the Sixaola River Basin (CBCRS) will prepare the launching of four pilot programmes (Component 2) and will strengthen the role and increase the participation of key stakeholders who are weary of diagnostic and planning approaches that fail to ground investments for local involvement and participation.

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42. The project management unit will use an transdisciplinary approach for trust building with key stakeholders which seeks to enhance group cohesion and monitor common understanding of issues being discussed in the TDA development process by participant stakeholders.

43. The TDA will be developed with active collaboration of relevant private sector stakeholders. The PMU and Binational commission of the Sixaola River Basin (CBCRS) will ensure that the technical staff and decision makers from key local businesses, producers associations, local chambers of commerce and trade, and staff from multinational corporations with presence in the basin, send representatives who participate actively in committees, workshops and meetings aiming to describe binational problems. The project will also take stock of relevant studies private stakeholders have invested on recently that provide valuable information about socioeconomic and environmental indicators for the TDA (i.e. EIA studies, productivity surveys etc). The project will also review existing local business strategies, and national or regional strategies aiming to attract foreign direct investment with specific targets for the binational river basin in order to align these to TDA/SAP process.

1.2. *The Binational commission of the Sixaola River Basin (CBCRS) role as facilitator of IWRM joint actions by public and private sector stakeholders is strengthened.*

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44. This outcome will be achieved by providing technical assistance to improve the skills and methods of the Sixaola River Basin Binational Commission (CBCRS) stakeholders to use the complementary studies to update the existing Strategic Action Programme (SAP) for the period 2022-2032 (Output 1.2.1). The approach of the project will be to update the existing Binational Strategic Action Plan on the TDA through a facilitated dialogue about agreeable actions

for collective and binational monitoring of progress made.

45. In parallel, CBCRS will update the SAP and increase its influence and increase involvement of relevant stakeholders through technical assistance provided to reactivate and strengthen the existing working groups currently leading the implementation of the Binational Strategic Action Plan.

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46. The project will help de CBCRS reactivate the working group promoting adoption of best practices among agricultural producers to reduce pollution risks and mitigate the impact on shared freshwater, coastal and marine ecosystems. This working group composed of binational stakeholders will review best practices adapted to the binational basin production matrix and landscape. This will be used as a basis for the development of a strategy for the extension and transfer of knowledge through demonstration projects (Component 2) and through a larger network of CBCRS partners.

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47. A second working group working to update the SAP and to be strengthened by the project is the one working on binational riverine and coastal ecosystem pollution control and pollution abatement actions by agriculture and tourism sector stakeholders and partners. This group aims to improve actions on riverine and coastal ecosystems through participatory processes that involve stakeholders that do not commonly work together. This will also increase the influence, clout and coordination role of the CBCRS. The project will take advantage of NGOs and international partners who have long worked in the region to select the best options to ensure the long-term operation of binational and collaborative riverine and coastal ecosystem pollution monitoring programmes. This second working group will serve as technical committee reviewing the progress of related pilot programme in component 2.

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48. A third working group relevant for updating fo the SAP is the one leading restoration planning efforts along the river basin. This group will have close interaction with expert stakeholders working in the basin that may provide technical expertise in restoration campaigns, such as IUCN, that identified the restoration priorities in the Sixaola basin, or local municipal governments to ensure prioritized actions are in line with projected land use planning. The working group will update SAP actions related to restoration work annual targets and common investment plans, and will approve the invesment plans of the selected implementation partner leading restoration efforts in component 2.

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49. A fourth working group relevant for the update of the SAP is the one supporting managing existing early warning systems for floods in both countries. This working group will help update the SAP by reviewing the technical hydrometeorological model to be produced by Component 3 of this project.

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50. Besides updating the SAP on key areas, he working groups will also play a role in establishing the programatic guidelines of the pilot interventions of Component 2. The CBCRS will convene and articulate programmes aimed at mobilisinglocal community participation through targeted support and relevant investments and projects.

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51. The project management unit will provide technical assistance and communications outreach to develop and communicate a strategy for awareness-raising, participation and articulation among key private sector decision-makers and local government stakeholders. This communication and outreach strategy will be aimed at furthering the position of the CBCRS as main articulator and convener in the basin, helping to rally other stakeholders on the specific

collaborative actions being promoted. This will also consist of training public and private stakeholders on ecosystem-based management approaches for coastal and riverine ecosystems as an outreach tool. Trainings will be designed to so that the non-traditional stakeholders get involved in solving common problems.

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52. The project management unit will also provide technical assistance to facilitate the participatory process needed to develop a financial sustainability strategy. This will involve the costing of actions required for the technical secretariat of the CBCRS and design a fund-raising approach to mobilize support and to motivate collaborative action by local stakeholders in both countries. Once the funding target is identified, specific funding sources will be proposed as an exit strategy and explored during project timeframe so that the core funding to keep binational collective action in the basin may be in place by project closure.

Component 2: Demonstrative pilot projects stimulate collaborative work replication and implementation of SAP and build capacity, experience and support for SAP implementation

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53. Three binational projects will strengthen transboundary multi-stakeholder action in the Sixaola River Basin. The programmes will be implemented by strategic partners in both countries. The combined projects are expected to result increased forest cover in the river margins of the Sixaola river basin through restoration with endemic species selected for their resilience, and improved water quality of the Sixaola river as well as increased abundance of the Manatee (*Trichechus manatus*) in the Sixaola River basin. The targets of the forest cover to be increased and Chemical Oxygen Demand (COD) reduction to measure water quality improvements and manatee abundance targets and baselines will be determined during PPG phase.

54. The implementing partners for pilot projects will be selected during the PPG stage depending on a review of capacities to deliver project targets. Each program will be articulated with the SAP and the binational governance bodies. The working groups established in component 1 will monitor and review progress made by each of the selected partners implementing the pilot interventions.

55. The first project aims at developing and applying Land Management Tools such as micro-corridors, live fences, and protection zones, catchment areas management, and establishing nurseries for reforestation with endemic species in farms located within priority areas of the binational basin. These LMT will be suggested taking into account traditional knowledge of involved stakeholders in order to take advantage of culturally appropriate methods. The adoption of these LMT will seek to reduce risks agrochemical runoff or sediment into water sources along the international river basin. The selected implementing partner will provide up to 30 small grants for producers or ecotourism operators in both countries willing to use the grant to adopt LMT to reduce risk of agrochemical or sediment runoff into water streams, and to undergo a monitoring and verification program. The selection process will seek to benefit female headed organizations and organizations that may show to have internal regulations for equal pay and equal employment opportunities for men and women. Before the call for proposals the project team will train potential grant recipients on how to establish these internal regulations to promote gender equality and women empowerment.

56. The second project will help to launch a Ridge to Reef ecosystem restoration campaign along Sixaola river banks and coastal ecosystems by community-based organizations. The selected implementing partner will coordinate the widest possible array of local NGOs, CBOs, Foundations, technical colleges, rural aqueducts and organizations involved in ecosystem-based adaptation and community-based conservation efforts. The aim will be convening, planning and implementing a landscape restoration campaign, and execute it through at least 20 organizations in both countries. UNDP will select a partner among the many NGOs, organizations and universities that have worked in the binational basin in the past on restoration and ecosystem conservation.

57. The third project will be to promote adoption agricultural production best practices by producers of *musa spp.* crops (banana and plantain) that reduce agrochemical runoff or sediments into water sources. The selected implementing partner will reach out to 500 producers to promote adoption of an agreed package of technical recommendations approved by the working group established in component 1 by the CBCRS. The selected partner will also develop a repository of information that compiles potential alternatives to reduce the chemical load in the technological package of the main crops in the area (e.g. alternating with bioprotectants) facilitating the analysis. The programme will include advocacy with local municipal governments and financial institutions operating in the basin, about the creation of municipal economic incentives and improved credit services to promote adoption of best land and water management practices. The selected implementing partner will also promote research, information transfer and extension services on alternatives to agrochemicals, and / or on good practices in the use of agrochemicals, as well as of better sustainable production and sanitation practices for the prevention of pollution. Building on existing best practices in the Talamanca and Bocas del Toro region, the programme will work close with the Ministries of Agriculture's extension programmes, in Panama and Costa Rica and Costa Rica's Nacional Organic Agriculture Programme which provides to ongoing efforts in organic cacao and banana production with APPTA, COCAO, ADITIBRI, among other organizations working in Talamanca.

58. To engage relevant private sector stakeholders from the banana sector, the project will liaise with the Green Commodities Programme (GCP), UNDP's unit leading the development of methodologies for multi-stakeholder processes generating systemic change to achieve sustainable agricultural commodities. Advisory services provided by GCP will improve the strategy and forms of engagement of the private sector on the processes needed to address the root causes of environmental and social externalities of banana production. GCP will also provide services of corporate engagement with banana buyers to ensure alignment between purchasing policies of banana in the binational basin and best practices promoted through the implementation of the SAP.

59. The fourth project entails the promotion of organic solid waste and waste water management and treatment practices by tourism and agricultural sector stakeholders and partners in order to reduce pollution of binational riverine and coastal ecosystems. This project will provide technical assistance and up to 15 small grants to co-finance the investments by private sector stakeholders from tourism and agricultural sectors of the bi-national river basin. The selected implementing partner will convene eligible partners who are willing to make investments for treatment of waste water or reduce burden of the municipality to process organic waste. These investments may include facilities to process organic waste to generate compost; waste water processing plants; or the development of internal procurement policies to purchase locally produced compost. The project will also improve knowledge about impacts on ecosystems but also increasing commitment by local stakeholders to timely action on pollution prevention and adoption of best practices.

Component 3: Flood Risk Management

60. This expected outcome of this component is to strengthen the capacity of communities and local organizations to respond to flood risks in the Sixaola river margin. This will be achieved by the development of complementary measures to protect communities through the development of an early warning system (EWS) for floods. To be effective, the EWS need to actively involve communities and other sectors at risk from a range of hazards, facilitate public education and awareness of risks, disseminate messages and warnings efficiently and ensure that there is a constant state of preparedness and that early action is enabled. This means the development of four major sub-components as recommended by WMO^[1]:

61. a. Disaster risk knowledge through a systematic collection and analysis of data to understand the nature and hazards behavior, as well as the identification of related vulnerable groups, critical infrastructure and assets, to design evacuation strategies including evacuation routes and safe areas, and to expand warning messages.

62. b. Detection, monitoring, analysis and forecasting of hazards and possible consequences to provide forecasts and warnings, including the development of specific hydrometeorological models as well as the increasing of the automated hydrometeorological monitoring infrastructure to produce and deliver accurate thresholds to determine activation of warnings in strategic sites of the binational river basin. Likewise, the riverine communities will be organized and trained to apply simple surveillance instruments such as drones to monitor flood waters, as a complement and support to the automated monitoring mechanisms. The end of this subcomponent is to stimulate co-responsibility of the inhabitants in the maintenance of the EWS, particularly through the participation of education facilities and youth organizations that can help build solidarity among communities sharing the territory.

63. c. Develop specific early warning dissemination and communication protocols to ensure that warnings reach all those at risk with clear messages containing simple, useful and usable information to enable proper preparedness and response by organizations and communities, using multiple communication channels and currently available technology.

64. d. Strengthen preparedness and response local capacities, so the people understand their risks, respect the warning services and know how to react to the warning messages. This includes increasing the organization and training of existing local emergency committees in charge of developing disaster management plans, which determine self-protection and safe behavior guidelines, identify available evacuation routes to safe areas, locate shelters arrangements and other directions to reduce risks, damage and loss of property.

65. This EWS will be developed with the participation of scientific and technical partners such as the National Meteorological Institute and universities; relief entities such as the Red Cross and the Municipal and Communal Emergency Committees, public institutions present in the region, private sector and all grassroots organizations in the risk-prone areas. All together with a cultural relevance approach considering the ethnic and cultural diversity of the inhabitants, as well as gender perspective that considers the differentiated role of women and men in disasters and enhances the role played by women as agents of change in these communities.

Component 4: Knowledge Management

66. The component will result in improved knowledge, practice and aptitudes of key stakeholders regarding binational collaborative action to restore coastal, riverine and marine ecosystems; control pollution and reduce vulnerability to flood risks of local populations of the binational river basin. This will include the development and implementation from the project on set of a monitoring system to systematize experiences and compile best practice and lessons from the pilot projects implemented. The project will invest in making these lessons accessible and available to all stakeholders in the basin, translated and in culturally adapted formats, especially considering indigenous populations of the project site.

67. The working groups established in component 1 by the CBCRS will work closely with the project team to align the development of four technical publications about lessons learned when implementing demonstration projects, so that these may respond to the needs of the participant stakeholder groups. The project team will make sure lessons are widely disseminated in appropriate formats. Recommendations included in the technical documents will be generated through workshops convened formally by the CBCRS and final publication will be approved by working groups. This will contribute to appropriation of the CBCRS of the recommendations and allow for the project lessons to generate to inform SAP implementation.

68. The project team will tailor binational exchanges to help systematize lessons learned through demonstration projects (component 2) and to generate interaction between working groups and demonstration project implementers. Special emphasis will be placed on ensuring exchange programs missions and field visits are arranged between female producers and women led cooperatives and organizations from both countries, and who are involved in restoration, early warning, pollution control and monitoring and agricultural best practice promotion.

69. All of the lessons will be made available on a website for wider dissemination which will be linked to partners' portals and IW:LEARN including participation of relevant stakeholders from the CBCRS at the biennial IW conferences.

70. The project results as outlined in the results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves outcomes and outputs. The project coordinator will have overall responsibility of monitoring project implementation and informing stakeholders of progress and setbacks. The PMU will also hire a monitoring and evaluation project officer to support the reporting and to help widen the participatory nature of monitoring and evaluation of project progress. All project-level monitoring and evaluation (M&E) will be undertaken in compliance with UNDP requirements as outlined in the UNDP Programme and Operations Policies and Procedures and Evaluation policy. Other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. Follow-up and monitoring of the agreements will be done annually and progress reports on compliance will be drafted and included as part of the required monitoring and evaluation (M&E) reporting of the project.

71. The project will take advantage of the extensive experience and knowledge of partners like IADB and IUCN who have previously worked on binational river basin projects. During the PPG stage, IADB will be engaged actively on project design. The IADB will be invited to take part of the technical committee of the project to ensure that the bank is able to monitor progress and identify bankable opportunities that may help fund SAP implementation after project closure. The project will also take advantage of existing partnerships between UNDP and IADB at a regional level; one example is the NDC Partnership that channels support to countries to implement Nationally Determined Contributions submitted to UNFCCC. Both the Costa Rican and Panamanian NDCs promote actions to tackle climate change impacts on river basins, this project will help advance action on that front. The PMU will liaise with the regional representatives of the NDC partnership to keep partners informed and avoid duplicated investments.

Alignment with GEF focal area and/or Impact Program strategies

72. The project is fully consistent with GEF-7 programming directions. The project is consistent with objective 3 of International Waters Focal Area: Enhancing water security in freshwater ecosystems and its three strategic actions: 1) advance information exchange and early warning; 2) enhance regional and national cooperation on shared freshwater surface and groundwater basins; and 3) investments in water, food, energy and environmental security. The project is also consistent with objective 1 of the GEF-7 International waters focal area: "strengthening national Blue Economy opportunities to reduce threats from land-based sources of pollution to marine and coastal waters", and its strategic action 1: sustaining healthy coastal and marine ecosystems and 3: addressing pollution reduction in marine environments.

73. The proposed pilot interventions will contribute in particular under: 1) sustaining healthy coastal and marine ecosystems to restore degraded key habitats; 2) addressing the reduction of land-based sources of pollution of marine environments to catalyze national policy development coupled with investments in innovative approaches, through regional processes, to address nutrient and emerging pollution issues along the Source-to-Sea/Ridge-to-Reef Continuum; support common fact finding between public and private sectors to ensure that priority actions will lead to transformed practices in both sectors; stimulate private sector engagement, through relevant industry sectoral roundtables and industry groups. In addition, under the three strategic actions of objective 3 of IW will develop activities under: flood and drought early warning systems and disaster risk management plans; nature-based efforts for disaster risk management, including floods, droughts, and coastline protection; common, participatory fact-finding and agreement on cooperative opportunities and shared constraints and a vision for a shared future (such as via the formulation of a common Transboundary Diagnostic Analysis and Strategic Action Programs); identify and leverage resources for investments addressing SAP identified priorities; Improved policy formulation processes and coordinated management of surface and groundwater resources on national and regional levels; periodical updating of existing Transboundary Diagnostic and Strategic Action Programs - or their equivalents; supply chain approaches for increased water efficiency and reduction of the toxic footprint of agricultural commodities, such as through industry roundtables and interest groups; protect and rehabilitate aquatic ecosystems, especially wetland areas, river banks, mangroves, and other key habitats with multiple ecosystems services.

74. The project's intention is to advance ecosystem-based management in the Sixaola Binational Watershed, shared by Costa Rica and Panama. For this purpose, a TDA/SAP process will be implemented. First, preparing a participatory multi-sectoral analysis of the situation basin-wide (the TDA). Afterwards, using SAP results to prioritize and agree common courses of action at the regional and national levels. A key element of the project will be to strengthen the

existing regional cooperation framework to sustain the future SAP implementation.

75. The project will add to the on-going national efforts to implement CBD's Strategic Plan for Biodiversity 2011 – 2020 (Decision X/2). In particular, the TDA/SAP process will contribute to the following Aichi Biodiversity Targets:

Target 4	By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.
Target 7	By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
Target 8	Focus on pollution from land-based and marine sources; in particular nutrient runoff from agriculture and municipal discharges that impact the coastal and marine environment.
Target 12	Build on existing initiatives and regional agreements to protect endangered species (e.g., marine turtles) that thrive within the range of habitats within the transboundary river basin.
Target 14	Identify Sixaola River Basin essential ecosystem services, and how they contribute to human wellbeing. Agree on common strategic actions to confront the main factors that degrade key ecosystems.

The resources from the GEF will support the efforts of the participating countries to achieve Goal 6, 12, 14 and 13 of the Sustainable Development Goals, in particular the following targets:

Goal 6 Ensure availability and sustainable management of water and sanitation for all	
By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	The TDA/SAP process will contribute to creating an enabling environment for reducing pollution from agriculture and sanitation practices.
By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	The TDA/SAP process will contribute to strengthening the existing binational capacity to manage the transboundary watershed in a fully integrated, cross-sectoral, ecosystem-based manner.
By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	The TDA will identify key degraded area within the Sixaola Basin and the main threats to them. The SAP will outline the agreed actions to restore riverine ecosystems.
Goal 12 Ensure sustainable consumption and production patterns	
By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Demonstration projects and CRCBS coordination working groups will improve standards and protocols on the registration, commercialization and use of agrochemicals in biodiversity sensitive coastal areas, geared resulting in improved binational riverine and coastal ecosystems.
Goal 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	A key issue to be addressed will be pollution originating from agriculture runoffs and sanitation systems seepage, as part of land-based sources of marine pollution. The TDA will identified those sources of pollution and the SPA will outline action to mitigate the impact.
Goal 13 Take urgent action to combat climate change and its impacts	
Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	The project will strengthen and scale-up existing Early Warning Systems for floods in the Sixaola river and will promote ecosystem-based adaptation practices in the entire basin and coastline.

5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

76. Without a coordinated multi-country management framework, Panama and Costa Rica will continue to manage their resources and activities without considering global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF) leading to an increase in biodiversity loss and in climate related risks. In the longer term, the project will contribute to integrated land and water management, such as through advancing the nexus approach in watersheds and basins, contributing to abate water borne pollution, reducing land-based sources of marine pollution and contributing to the ecosystem-based adaptation of vulnerable human populations. Global benefits will be demonstrated through (i) increased regional cooperation, (ii) enhanced protection of biodiversity of global importance, (iii) reduced transboundary and land-based pollution of marine ecosystems, (iv) flood risk reduction and ecosystem-based adaptation to climate change.

77. Costa Rica and Panamá continue to suffer losses from hydrometeorological events. In the case of Costa Rica, between 2005 and 2017 the total registered economic losses due to weather related events has totaled US\$2.3 Billion (Comisión Nacional de Emergencia, 2018, MINAE, Política Nacional de Adaptación, 2018). The human population of Sixaola has suffered more than its fair share of economic losses due to recurrent flooding. This project will contribute to reduce recurrent flood losses, by investing in adapted land use practices, that improve the management of water resources and protect critical green infrastructure. In Costa Rica, recent studies on national environmental accounting by the Central Bank (BCCR), reveal that forest sector including protected areas represent 2% of the country's GDP (See Central Bank of Costa Rica website: <https://www.bccr.fi.cr/seccion-cuentas-ambientales/cuentas-ambientales>).

78. Significant co-financing at the national level will be leveraged for this project for a total of US\$25,000,000, which includes US\$9.8 Million from the National Governments (MOPT-CNE, SINAPROC, CONAVI, IFAM), another US\$11.2 from National counterparts (MEDUCA, GEF-Panama, Government of Panamá) and US\$4.0 Million from local municipal governments in the Sixaola river basin.

79. GEF support will contribute to establish the foundation for collaborative management of the Central American Isthmus Freshwater Ecosystem and Western Caribbean Marine Ecosystem. The incremental resources will facilitate the development of (i) an agreed binational strategy (the SAP), and (ii) the cooperation framework and governance arrangements between Panamá and Costa Rica for its implementation. In addition, the GEF resources will support the countries' advances to comply with Aichi biodiversity targets and to progress towards the Sustainable Development Goals, in particular SDG 14.

80. The incremental cost rational in this project is that preventing waterborne pollution of marine ecosystems in countries dependent on tourism will guarantee quality biodiversity-based tourism attractions in the long term, generating local employment and improved health and education. The incremental cost is only a small percentage of annual losses attributable to extreme weather events, and a fraction of potential losses if the tourism industry and agricultural sectors are negatively affected by biodiversity loss, coastal erosion and recurrent flooding. The promotion of enhanced early warning system will not only help save lives, but also with allow to safeguard critical development assets currently at risk from flood events and landslides. By reducing annual

losses, improving water quality and reducing siltation of coral reefs, this project can contribute to both the Aichi Targets and the SDGs. Finally, by strengthening binational institutions and increasing transboundary cooperation, both Panama and Costa Rica can improve the development assets of these peripheral, marginalized populations. The impact of sustainable international waters management can have important long-term local development benefits, while maintaining sound livelihoods and reducing the water and toxic footprint of agricultural and sanitation activities.

Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

81. Global environmental benefits will be demonstrated through (i) increased binational cooperation, (ii) enhanced protection of biodiversity of global importance, in particular, the Western Caribbean Large Marine Ecosystem, the Isthmian Central American freshwater ecosystem, and specific habitats and keystone species (e.g., habitat of manatee (*Trichechus spp*), coastal wetlands, highly migratory fish stocks), (iii) reduced transboundary pollution.

82. This project will contribute to GEF-7 target to improve the management and conservation of Large Marine Ecosystems and to achieve the target of 32 shared water ecosystems under new or improved cooperative management.

7) innovation, sustainability and potential for scaling up.

Innovation. The main elements of innovation are:

83. The TDA/SAP process will be based on a multi-stakeholder process through a multidisciplinary approach to integrated water resources management, land use planning, community based and ecosystem-based adaptation.

84. Three working groups will help harness best available scientific knowledge from both countries and internationally, and apply this to develop guidelines and criteria for the management of water sources, aquifer recharge areas, wetlands and other critical freshwater and marine ecosystems.

85. Innovative technologies such as the use of drones for local monitoring of key species (manatee), and for applications such as flood management and response, early warning systems and other community-based adaptation approaches.

86. Binational institutions are strengthened, and the joint governance of a shared watershed is built through innovative approaches to institutional design and stakeholder participation.

Sustainability

87. Environmental sustainability. The project aims to promote ecosystem-based management to address the key issues that threaten biodiversity and ecosystem services. This is in line with existing national and regional policies in the area and will be achieved by improving local and binational capacities for the integrated and transboundary management of water resources and coastal biodiversity. One of the project's central aim is to reverse the damage to freshwater and coastal ecosystems from agricultural run-off, sanitation seepage and siltation.

88. Social sustainability: The project will deliver outcomes through a participatory approach that involves key stakeholders and makes emphasis on ensuring high levels of interaction by women and indigenous groups in decision making related to project implementation. The project will build on existing social capital and networks already established by binational basin actions in order to promote further collaborative actions, attract new partners so all sectors may support the implementation of the SAP

89. Institutional sustainability: The long term governance of transboundary issues will be addressed by strengthening binational institutions such as the CBCSR, which will be involved in building a network of partner institutions on either side of the border between Panama and Costa Rica. This binational governance will be critical for the success of the project, and it will require close collaboration and well-established cooperation channels. The advantage of the project is that the institutional figure of the CBCSR already exists and can benefit from increased capacities and leverage to lead the project and become a critical binational feature in charge of the long-term management of the Sixaola River Basin.

90. The sustainability of the Talamanca and Changuinola municipalities will need to be addressed by local governments, civil society organizations and indigenous people's authorities. Particular attention will be paid to working with local indigenous and traditional authorities to make sure that the decisions taken by the CBCSR are in line with existing national and international standards and safeguards.

91. Financial sustainability. At the binational level, this is guaranteed by the participation of critical institutions that already are supported by both national governments and regional institutions such as CABEL (BCIE) and other regional banks. At the local level, the working groups to be established with component one will develop a long-term financial sustainability strategy to cover costs of continuous replication of project interventions. This will entail close coordination with the BIOFIN teams in Costa Rica and Panama developing financial instruments to cover the financial gap in both countries to implement the NBSAP. The working groups will identify specific interventions that are aligned with NBSAP implementation so that these may benefit from the financial solutions being developed by BIOFIN, these may include but are not limited to crowd funding for continuous restoration; a mechanism for connecting impact investors with organized productive enterprises in the binational basin.

Potential for scaling up

92. The experience from the project will be useful to other regions interested in promoting other transboundary management projects in other border regions in Latin America and in Central America in particular. There also the potential for the project to expand territorially to neighbouring watersheds such as the Changuinola River in Panamá or the Valley of the Estrella River in Talamanca in Costa Rica. The project will be directed by the Technical Secretariat of the Binational Cooperation Agreement (MEF and MIDEPLAN). This allows for replicability of lessons learned and practices adopted in the Sixaola River Basin in other areas of the Panama-Costa Rica border.

[1] World Meteorological Organization https://library.wmo.int/doc_num.php?explnum_id=4463

[i] SINAC. 2016. Elaboración de Estudios Científicos Marino-Costeros Básicos para el Sitio de Importancia para la conservación de Caribe Sur. Proyecto Consolidación de las áreas Marinas Protegidas de Costa Rica del Sistema Nacional de áreas de Conservación, Programa de Naciones Unidas para el Desarrollo (PNUD) y El Fondo para el Medio Ambiente Mundial (GEF), San José, Costa Rica. 70 pp.

[ii] Huguenin, Caroline & A Vega, Rolando. (2016). Análisis de inundación causado por el aumento del mar en la región de Sixaola. Conference paper.

1b. Project Map and Coordinates ⓘ

Please provide geo-referenced information and map where the project interventions will take place.



(Source: Laboratorio SEDET – Tania Rodríguez)

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities Yes

Civil Society Organizations

Private Sector Entities

If none of the above, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

90. The following table summarizes key stakeholder engagement during project preparation. Nonetheless, a full stakeholder analysis will be conducted during PPG, with focus on the key stakeholders of the pilot sites.

Stakeholder	Role pertinent to the project	Expected engagement
Technical Secretariat of the Binational Cooperation Agreement (MEF and MIDEPLAN).	To be defined during PPG: It is expected that the institutions conforming the Technical Secretariat (MEF and MIDEPLAN see below) will appoint the National Directors of the project in both countries.	Direct participation in project preparation.
Ministerio de Planificación y Política Económica (CR) Ministerio de Economía y Finanzas (PAN)	Responsible for the design and development of public policies for the Government Heads del Border Development Cooperation Agreement Secretary of the Binational Commission for the River Basin Sixaola (BCRBS) – monitoring of planning and agreements	Direct participation in project preparation.
Ministerio de Agricultura y Ganadería (CR)	Member of the BCRBS	Direct participation in project preparation.

Ministerio de Desarrollo Agropecuario (PAN)		
Comisión Nacional de Prevención de Riesgos y Atención de Emergencias – CNE (CR)	Preventions and attentions of risk and emergencies Member of the BCRBS	Direct participation in project preparation.
Sistema Nacional de Protección Civil -SINAPROC (PAN)		
Ministerio de Ambiente, Energía y Mares (CR)	Regulate and maintain environmental quality Regulate and conserve biodiversity	Direct participation in project preparation.
Ministerio de Ambiente (PAN)	Responsible for providing technical and financial assistance GEF Operational Focal Point Member of the BCRBS	
Ministerio de Salud (CR)	Member of the BCRBS	To be consulted / engaged as pertinent
Ministerio de Salud (PAN)		
Ministerio Obras Públicas y Transportes (CR)	Member of the BCRBS	To be consulted / engaged as pertinent
Ministerio Obras Públicas (PAN)		
Instituto Costarricense de Turismo (CR)	Member of the BCRBS	To be consulted / engaged as pertinent
Autoridad Nacional de Turismo (PAN)		

Dirección General de Migración y Extranjería (CR) Servicio Nacional de Migración PAN)	Member of the BCRBS	To be consulted / engaged as pertinent
Dirección General de Aduanas (CR) Autoridad Nacional de Aduanas (PAN)	Member of the BCRBS	To be consulted / engaged as pertinent
<i>Local governments</i> Municipality of Talamanca (CR) Municipality of Changuinola (PAN) Municipality of Bocas del Toro (PAN)	Manage local planning and development Member of the BCRBS	Direct consultation during project preparation
Private sector Companies Tour operators	Relevant in complying with environmental regulations	Direct consultation during project preparation Direct participation in preparation of pilot projects
Indigenous governments (ADITIBRI; ADITICA; Keköldi; Ngäbe; Naso; Bribri) Mesa Nacional Indígena, CONAI, etc..	Member of the BCRBS	Direct consultation during project preparation Direct participation in preparation of pilot projects
Civil Society Organizations (Small farmers; Association Rural Development Associations; Tourism Associations)	Member of the BCRBS	Direct consultation during project preparation Direct participation in preparation of pilot projects
IUCN	Has a longstanding involvement the binational river basin and has gener	Direct consultation during project preparation

ated the most relevant technical inputs that make TDA process viable.

89. Indigenous groups are key stakeholders of the project as most of cocoa and plantain production in the basin is done by these groups. During the PPG a FPIC process will be conducted and an indigenous plan will be developed to provide the framework both for identification of indigenous people's issues and how these issues are to be managed within a widely consultative and participatory process described in a separate Stakeholders engagement plan. These mitigation culturally appropriate measures will be proposed and monitored through participatory processes. Indigenous groups are located mainly in the upper and middle sub-basins in the legally established indigenous territories and in Bocas del Toro Archipelago. The main groups are Bri Bri and Cabécar Bribri, Cabécar and Ngäbe in Costa Rica; and Bribri, Naso and Ngäbe Buglé in Panama. They are located in the following areas: in four territories in Talamanca municipality (Telire, Talamanca- Cabécar, Talamanca -Bribri y Kéköldi); and the Ngäbe-Bugle are distributed in the highlands; in the eastern part of the province of Bocas del Toro towards Valle de Riscó on the axis of the Changuinola river; to the west, in the flat area, south of the banana plantations, and, on the islands of the Bocas del Toro Archipelago , while the Naso territories are found in the highlands of the central mountain range.

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

92. Women are key stakeholders in a large number of activities that occur within the project area. These activities range from participation in organized groups of women, producers of cacao, banana and plantain, particularly indigenous women, domestic work and in the service sector. UNDP has procurement procedures that explicitly recognize the promotion of gender equality as a standard business practice. As a result, gender equality will be taken into consideration. Gender-sensitive actions will be included in the TDA / SAP development process with support from IW:LEARN's gender mainstreaming in IW tools and guidance. The project will include gender analysis and a strategy to promote gender equity and ensure adequate participation and representation of women. There will be specific gender-sensitive indicators and disaggregated data to measure the participation of men and women, groups of women participating, access and management of natural and productive resources by women and participation and leadership of women, among others. The project will actively encourage the balanced input of men and women into the design of the TDA and SAP. This will be achieved through sex disaggregated invitation convening to meetings and workshops and a gender parity selection of project specialists working in the areas as well as the management unit team members.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources;

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women.

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

93. The private sector will be engaged in all project components. With the first component representatives of key productive entities from agricultural and tourism sectors will be convened to participate in established working groups and to ensure the development and implementation of the SAP is done with involvement and leadership of local business sector. Component 2 will entail implementation of demonstration programmes in several topics, each of these programmes will be implemented by a local NGO jointly with local private sector to contribute with restoration or pollution control efforts along the basin.

5. Risks

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

The main risks that the project might face are presented in the table below:

Risk	Level	Mitigation measure
The numerous organizations and institutions are unwilling to collaborate within a common cooperation framework [Political].	Low	Maintain direct communication with every entity related to the project. In particular with the environment and fisheries authorities, the ministries of foreign affairs, and key regional organizations (e.g., OSPESCA, IATTC).
Climate change affects the delivery of project outcomes	L	Costa Rican and Panamanian Caribbean populations have substantial exposure to weather related hazards, including floods and hurricanes. Although the project cannot completely mitigate these risks, measures will be implemented that will reduce the risks from landslides and flooding by improving the capacity of national and municipal authorities to restore river banks and protection zones.
Private companies are reluctant to improve agriculture practices and participate in pilot projects	M L	A strategy to approach private companies will be developed to address their interest and potential concerns. They will participate since the design phase to ensure their support and participation in the project.
The Project may potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits.		Women are underrepresented in agriculture in the target region, due to long-standing social and cultural norms. During PPG a Gender Analysis will be conducted and a Gender Action Plan for the project will be designed to reduce this risk and ensure the development of each activity ensures full and equal participation of women.
The Project could pose a risk of		The project will invest in restoration along the river ba

<p>Introducing invasive alien species.</p>		<p>sin and will support pilot projects incorporating land management tools (micro corridors, live fences). The project will reduce risks by purchasing or receive as co-finance the replantation inputs from government approved nurseries and will only use varieties of endemic species that can withstand floods that affect the basin on a yearly basis. The promotion of agricultural best practices will include knowledge kits to train producers and project partners on the impacts of invasive species on ecosystems.</p>
<p>Indigenous peoples present in the Project area; and the inclusion in component 2 of pilot project interventions that could provide inputs and technical assistance to indigenous producers within their land may increase the risk of non-compliance with FICP and culturally adapted consultation processes that lead to social conflict.</p>		<p>During the PPG stage an indigenous consultation process will be conducted in both countries to define if indigenous communities will participate in project activities and help define the project target area in close consultation with indigenous communities</p>
<p>Risk of unintended generation of waste (both hazardous and non-hazardous waste)</p>		<p>The project will reduce this risk by including in training of producers and the development of culturally adapted knowledge products that explain how and where to safely dispose agrochemicals. The technical groups established to work in close coordination with the Binational Commission will help develop local waste management plans and protocols for final disposition of POPs in line with the Stockholm Convention, and other contaminants that may become redundant with the adoption of organic methods of production in the basin.</p>

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

95. The project will be implemented in close coordination with the CBCRS. During PPG the specific linkages and roles of these and other identified stakeholders to the project will be identified. Those groups whose livelihoods have direct links with project action, will be incorporated in the project preparation process. In addition, project design will incorporate appropriate culturally-sensitive measures according to UNDP and GEF policies.

96. The present project will coordinate with the following projects:

- a. Catalyzing Implementation of the Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems (CMLE+), under implementation by UNDP.
- b. Implementation of the National Bio-Corridor Programme (PNCB) in the context of the National Biodiversity strategy of Costa Rica implemented by GIZ
- c. BIOFIN: This project running in two countries will provide linkages to financial solutions being developed to accelerate implementation of NBSAP, project activities will be linked to future funding from these instruments.

BRIDGE, Ecosystem-based approaches to climate change adaptation: strengthening the evidence and informing policy (EbA Evidence and Policy) and Adaptation, Vulnerability & Ecosystems (AVE) in Panama and Costa Rica implemented by IUCN with local partners.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

97. The project is also consistent with the following national policies of Costa Rica:

98. The National Plan for Development and Public Investment of the Bicentennial that raises goals for GDP growth, reduction of multidimensional poverty, unemployment and carbon dioxide emissions, as well as halting the growth of inequality. It includes more than 270 public investment programs and projects and specific interventions for the climate change adaptation and risk prevention and for the implementation of the National Biodiversity Policy 2015-2030 for Costa Rica. This policy highlights the need to improve biodiversity by safeguarding ecosystems, species, and genetic diversity; increasing the benefits of biodiversity and ecosystem services for the population; integrating biodiversity in productive seascapes and landscapes; and reducing the urban environmental footprint and improving implementation through participatory planning, knowledge management, and capacity-building. The National Biodiversity Strategy (2016-2025) has prioritized the following themes (four out of eight priorities), which directly relate to the proposed project: a) the need to increase biodiversity resilience through connectivity, restoration of riparian forests, and other threatened ecosystems that provide essential services (in strategic productive landscapes and seascapes as well as urban development); b) integrate biodiversity in landscapes and seascapes and under priority sectors (e.g., industry, water management, and finance); c) strengthen ecosystem services into spatial planning and accumulated impacts, including the reduction of the urban footprint; and d) strengthen biodiversity-related information for decision-making and law enforcement, including the development of land use monitoring systems.

99. Costa Rica's National Climate Change Strategy (ENCC): Costa Rica has made progress in the last decade in climate change adaptation planning at the national level. These advances include the National Climate Change Strategy (2009) and its corresponding Action Plan (2012), as well as sectoral vulnerability assessments, which encompass coastal zones, water resources, agriculture and food security, infrastructure, energy, and biodiversity. Priorities for adaptation were identified in these early assessments, but only the biodiversity sector has developed a planning process to address this objective since 2012. The country launched its National Adaptation Policy in 2018 and is currently finishing the formulation of its National Adaptation Plan (NAP), as part of its commitments established in the Nationally Determined Contribution (2015). In its INDC (2015) Costa Rica centered its long-term strategy on climate change actions which seek to increase society's resilience to the impacts of climate change and on strengthening the country's capacity for a low emission development in the long term. Costa Rica has a strong record in climate change mitigation actions, and the INDC represents a turning point in the strengthening of national adaptation efforts that includes the evaluation of possible synergies and trade-offs between mitigation and adaptation. The NAP will focus on six priority sectors: infrastructure, agriculture, water resources, tourism, health, and biodiversity. More recently, under the current administration of President Carlos Alvarado Quesada, Costa Rica launched its National Plan for Decarbonization in 2019, which sets forth 10 lines of action to help steer the country towards a low carbon emissions development path. This Plan constitutes a significant step in achieving the objectives in Costa Rica's NDC, as a key milestone in the country's climate policy.

100. Emergency and risk: Costa Rica launched in 2016 its National Policy for Disaster Risk Reduction 2016-2030, which is one of the first national DRR policies aligned with the 2015 Sendai Framework for Action on Disaster Risk Reduction. This national policy builds on the long-standing experience in Costa Rica of disaster risk reduction, prevention and emergency response. Since 2006 Costa Rica has a National Law for the Prevention of Disaster Risk and the Management of Emergencies (No. 8488), which at the time was also fully aligned with the Hyogo Framework for Action on Disaster Risk Reduction (2005). In 2010, Costa Rica also developed its National Plan for Disaster Risk Management 2010-2015 which provided concrete lines of action and placed disaster risk management squarely into the development agenda of the country. The latest National Policy for Disaster Risk Reduction 2016-2030 provides a medium-term planning horizon through to 2030, aligned with the Agenda 2030 for Sustainable Development. It proposes five lines of action:

- 1) Generation of Resilience and Social Inclusion
- 2) Participation and Decentralization of Risk Management
- 3) Education, Knowledge Management and Innovation
- 4) Sustainable Financial Investment, Infrastructure and Services
- 5) Planning, Mechanisms and Normative Instruments for the Risk Reduction (CNE, 2016)

101. The project is consistent with the following public policies of Panama:

102. The National Climate Change Strategy of Panama (ENCCP), which aims to increase the adaptive capacity of the most vulnerable populations and to promote the transition towards a low-emission development model. In particular, the project contributes with its axes of water security; designing and building infrastructure for the control of floods in the headwaters of rivers; recovering forested and vegetal cover that allows to regulate the run-off; and implementing the Alliance for the Million Hectares to recover gallery forests.

103. With the National Water Security Plan 2015 - 2050, the project attends goals No. 3: preventive management of risks related to water; No. 4 on healthy watersheds; and Goal 5 of water sustainability.

104. National Disaster Risk Management Plan 2011-2015, particularly with its specific objectives of The quality of risk information has been improved by increasingly improving local and national decision-making processes. The participation of Civil Society is guaranteed. the decision-making process for risk reduction.

Overall, the proposed project will help to contribute to these lines of action as applied to the Sixaola river basin and will provide an opportunity for exploring new options for the generation of resilience and social inclusion in a binational watershed.

The project is consistent with the following regional policies and instruments:

§ The regional environmental strategy 2015 – 2020 (CCAD, 2014) and the regional strategy on climate change (CCAD & SICA, 2010) adopted by CCAD. Both instruments incorporate actions for the coastal and marine environment and resources

8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

105. Component 4 will focus on knowledge management ensuring wide stakeholder participation in the definition and systematization of best practices and lessons learned. Knowledge documents will be culturally adapted and translated into indigenous languages of the binational river basin, and technical documents will have English summaries to facilitate international access. Documentation will be shared through the project's website, national and regional websites and IW:LEARN. The project's website will be developed and maintained following the IW:LEARN guidance. project experience will be documented and disseminated using the GEF IW templates for experience notes and results notes. country representatives and the project team will participate in IW:LEARN meetings and the international waters conferences. At least 2% of the GEF project budget allocation will be dedicated to IW portfolio learning.

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Enid Chaverri Tapia	Director of International Cooperation	Ministry of Environment and Energy of Costa Rica	3/22/2019
Isis Gondola	Jefe de la Oficina Internacional de Asuntos a.i.	Punto de Enfoque Operativo del FMAM	4/4/2019

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Annex A PROGRAM/PROJECT MAP AND GEOGRAPHIC COORDINATES



