

COSTA RICA-PANAMA

INTEGRATED ECOSYSTEM MANAGEMENT IN THE SIXAOLA BINATIONAL RIVER BASIN

RS-X1017

PROJECT DOCUMENT

NON-REIMBURSABLE OPERATION FINANCED WITH GEF RESOURCES

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ACRONYMS

ADI	<i>Asociación de Desarrollo Integral</i>
ANAM	National Environmental Authority, Panama
ANAI	<i>Asociación ANAI</i>
CATHALAC	<i>Centro del Agua del Trópico Húmedo para América Latina y El Caribe</i>
CATIE	<i>Centro Agronómico Tropical de Investigación y Enseñanza</i>
CBTC	<i>Biological Corridor Talamanca-Caribe</i>
CBD	Convention of Biological Diversity
CI	Conservation Internacional
CNE	<i>Comisión Nacional de Emergencias de Costa Rica</i>
COCABO	<i>Coordinadora Campesina Bocatoreña</i>
COVINERAS	<i>Comité de Vigilancia Ribereñas</i>
CRRH	<i>Consejo Regional de la Región Huétar Atlántica (Costa Rica)</i>
CSA	<i>Certificado de Servicios Ambientales</i>
DIGECA	<i>Dirección de Gestión Ambiental del MINAE</i>
EARTH	<i>Escuela Agronómica de la Región del Trópico Húmedo</i>
FONAFIFO	<i>Fondo Nacional de Financiamiento Forestal</i>
GEF	Global Environmental Facility
IDAAN	<i>Instituto de Acueductos y Alcantarillados de Panamá</i>
ILO	International Labor Organization
IUCN	International Union for the Conservation of Nature
IW-LEARN	International Waters (IW) Learning Exchange-Resource Network Program
IWRN	Inter-American Water Resources Network
JAPDEVA	Junta Portuaria y de Desarrollo de la Vertiente Atlántica
MAG	Ministry of Agriculture, Costa Rica
MEF	Ministry of Economy and Finance, Panama
MIDEPLAN	Ministry of Economic Planning, Costa Rica
MIDA	Ministry of Agricultural Development, Panama
MINAE	Ministry of Environment and Energy, Costa Rica
NGO	Non-governmental Organization
OAS	Organization of American States
PILA	La Amistad International Park
PROARCA	Regional Environmental Program for Central America
RSDS	Regional Sustainable Development Strategy
SINAC	<i>Sistema Nacional de Áreas de Conservación (Costa Rica)</i>
SINAPROC	National Civil Protection System, Panama
TNC	The Nature Conservancy
UNCCD	United Nations Convention to Combat Desertification (UNCCD)
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
WWF	Worldwide Fund for Nature

PROJECT SUMMARY
INTEGRATED ECOSYSTEM MANAGEMENT IN THE SIXAOLA BINATIONAL BASIN
(RS-X1017)

Financial Terms and Conditions

Beneficiaries: Republic of Costa Rica and Panama		
Executing Agency: Ministry of Environment and Energy (MINAE) of Costa Rica and the National Environmental Authority (ANAM) of Panama.		
Disbursement Period:	48 months	
Currency:	US\$	
Source:	Amount	%
IDB (grant from the Global Environment Facility - GEF) ¹	3,500,000	18%
Co-financing from IDB-funded Program (1556/OC-CR) ²	10,689,000	55%
Co-financing from IDB-funded Program (1439/OC-PN). ³	4,216,000	22%
Local:	970,000	5%
Total:	19,375,000	100%
Associated financing (TNC, CI and European Commission)	980,000	

Project at a Glance

Project objective:

Contribute to the sustainable use and conservation of biodiversity, water, and soil resources, through the creation of an enabling environment and integral, cross-cutting management of the Sixaola Binational River Basin. The specific objectives are to: (i) strengthen the technical and management capacities of the institutions, indigenous organizations, and organizations of the civil society represented in the Basin, to ensure its sustainable management; (ii) promote the adoption of productive models that are compatible with conservation and sustainable use of the fragile natural resources in the Basin; and (iii) promote the conservation and sustainable use of globally important biodiversity.

Special contractual clauses:

Prior to Project approval the following conditions shall be met: (i) creation of the Binational Commission for the Sixaola River Basin with the required legal mandate and capacity (¶4.3); (ii) creation of the Binational Technical Executing Unit for the Project with the required personnel and mandate, (¶4.4); (iii) the approval by MINAE and ANAM of the Program Operations Manual previously agreed with the Bank (¶4.7). Prior to first disbursement: (i) the financial administration firm will be hired (¶4.6); and (ii) the Project Coordinator will be selected (¶4.4). Upon fulfillment of Article 4.01 (a), (b), (c), (e), and (g) of the General Conditions, ANAM and MINAE may request an initial disbursement of up to US\$100,000 from the Bank to finance project startup activities (¶4.12).

Exceptions to Bank policies:

There are no exceptions to Bank policies.

Project consistent with Country Strategy: Yes [x] No []

Project qualifies for: SEQ [] PTI [] Sector [] Geographic [] Headcount []

Procurement: The procurement of works, goods and consulting services shall be carried out in accordance with the new Purchasing Policies and Procedures of the Bank pursuant to documents GN-2349-6 and GN-2350-6.

Verified by CESI on: March 17, 2006

1. With the GEF donation, the Bank will make a grant in equal amounts (US\$1,750,000) to Costa Rica and Panama, which will commit to use the resources to finance jointly agreed activities under this binational Project.
2. Sixaola Binational River Basin Sustainable Development Program. This amount includes both IDB-loan and local counterpart
3. Bocas del Toro Multiphase Sustainable Development. This amount includes both IDB-loan and local counterpart.

I. FRAME OF REFERENCE

A. Regional sustainable development strategy and transboundary collaboration in the Sixaola Binational River Basin

- 1.1 This Project responds to a series of agreements signed by the governments of Costa Rica and Panama. In 1991, the Vice-presidents of the Central America countries signed Resolution No 4-91 agreeing to promote the development of transboundary areas in an effort to achieve regional integration. Further that year; the two governments signed an agreement on transfrontier protected areas, officially establishing *La Amistad International Park* (PILA), as well as the Costa Rica-Panama Border Cooperation Development Agreement¹. The latter agreement established a Permanent Binational Commission with the mandate to promote an integrated Binational Sixaola River Basin Sustainable Management Program. In 2003-2004, a Regional Strategy for the Sustainable Development of the Binational Sixaola River Basin (RSDS) was formulated in a participatory manner involving all relevant stakeholders, with the support of an IDB grant. The RSDS is conceived as a comprehensive binational effort that considers short-, medium-, and long-term views and interventions in different areas: strengthening of the local/territorial management capacity, production diversification, natural resources management, vulnerability reduction, and basic infrastructure. The Bank has approved two related sustainable development programs (1439/OC-PN² and 1556/OC-CR³) to finance priority interventions in each country. Effective integrated management of the Basin and its ecosystems, however, requires additional support for which non-reimbursable GEF funding is requested⁴.

B. Environmental importance of the Sixaola Binational River Basin

- 1.2 **Biogeographical aspects.** The Basin covers an area of 289,000 ha. that stretches from the Caribbean coastland to mountainous regions of Talamanca in Costa Rica and Central in Panama, reaching a maximum altitude of 3,820 meters above sea level ([see Annex 3](#)). The area 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. In the lower sub-basin, the Sixaola River forms the border between the two countries. 81% of the area of the Basin falls on the Costa Rican side of the border, while the remaining 19% is Panamanian territory.
- 1.3 **Biological Diversity.** The Basin contains spectacular biodiversity and ecosystems of global importance. Representing one of the few larger tracts of virtually untouched forest in Central America, the Basin presents impressive species density and endemism. It also

¹ The Agreement was ratified by Panama on August 10, 1994 and by Costa Rica on July 24, 1995.

² Bocas del Toro Multiphase Sustainable Development Program.

³ Sixaola Binational River Basin Sustainable Development Program.

⁴ The Presidents of the two countries signed a Joint Declaration in April 2005, emphasizing the importance of promoting joint natural resources management programs, vulnerability reduction measures and integrated management of PILA.

harbors important populations of threatened and endangered species⁵ of top conservation priority and represents valuable resting and feeding areas for migratory bird species. A large part of the Basin is covered with forests⁶ that contain a variety of ecosystems including rare and fragile páramo and cienaga. The Talamanca-Central mountain range contains at least 10% of the main habitat types of the planet, and the mountainous region has been classified as one of the 200 global priority ecoregions defined by the Worldwide Fund for Nature (WWF). In the upper sub-basin, PILA alone harbors an estimated 4% of the planet's terrestrial species, including some 10,000 species of superior plants and more than 40,000 inferior and non-vascular plants. Approximately, 80% of the mosses and the majority of the 900 species of lichen known in Costa Rica can be found here, as well as 1,000 ferns and 1,000 orchid species. Between 30-40% of plant species (depending on group) are endemic to this area⁷. In terms of fauna, the Talamanca mountain range harbors more than 400 bird species, 263 species of amphibians and reptiles, as well as 215 mammal species⁸. The coastal ecosystems, including wetlands, mangroves, coral reefs and seagrass beds, are home to a variety of threatened and endangered species⁹.

- 1.4 A total of six protected areas can be found in the Basin, covering an area of 143,000 ha. hectares¹⁰ of the Basin. The protected areas are: (i) *PILA*, which is shared between Costa Rica and Panama and is declared a Biosphere Reserve and World Heritage Site; (ii) *Chirripó National Park*, Costa Rica; (iii) *Hitoy Cerere Biological Reserve*, Costa Rica; (iv) *Gandoca/Manzanillo Wildlife Refuge* (RAMSAR Site), Costa Rica; (v) *San San Pond Sak Wetlands* (RAMSAR site), Panama; and (vi) *Palo Seco Protection Forest* (RAMSAR site), Panama¹¹. The Mesoamerican Biological Corridor is represented in the Basin through the corridors of Talamanca-Caribe in Costa Rica, and Atlántico Panameño in Panama, occupying a total of 110,100 ha. Both corridors link mountainous, forested areas of the Talamanca-Central mountain range with the Caribbean Sea, and allow interconnection of high, medium, and lowland forest with the fluvial plains of the Sixaola River to the coastal Caribbean ecosystems. These corridors enhance connectivity and thereby genetic exchange of meta-populations and migration of species.

C. Environmental services provided by the Sixaola Binational River Basin

- 1.5 **Water resources.** The forests in the Basin capture an estimated 2,685 mm of precipitation on an annual basis, resulting in an average multiannual flow of 172 m³/s, representing a volume of 5,456,000 m³/year. While the water quality in the upper sub-basin is generally good, the waters in the middle and lower sub-basins suffer from

⁵ In San San-Pond Sak, there are 2 mammal species included in CITES Appendix I, as well as 8 orchid species and 13 bird species included in CITES Appendix II. In PILA, there are 5 mammal species and 1 bird species included in CITES Appendix I, as well as 9 orchid species, 1 mammal species, 15 bird species and 2 amphibian species included in CITES Appendix II.

⁶ The forest cover of 261,700 ha, representing approximately 89% of the Basin, is concentrated in the protected areas and the indigenous territories of Bri Bri and Cabécar.

⁷ There are three main areas of endemism in Costa Rica: Osa, Talamanca and the central volcanic range.

⁸ Puma (*Felix concolor*), jaguar (*Pantera onca*), capuchin monkey (*Cebus capuchinus*), Baird's tapir (*Tapirus bairdii*).

⁹ Including crocodile (*Crocodylus acutus*), cayman (*Caiman crocodilus*) manatee (*Trichechus manatus*), as well as several species of sea turtles including leatherback turtle (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), carey (*Eretmochelys imbricata*) and green turtle (*Chelonia midas*)

¹⁰ Costa Rica: 121,000 ha.; Panama: 22,000 ha.

¹¹ Of the six sites, the Project will only involve PILA, San San-Pond Sak, Gandoca/Manzanillo.

pollution mainly from agriculture and human settlements. In the Yorkín and Brai watersheds (in the middle sub-basin), for example, the Biotic Integrity Index¹², which reflects the health of the aquatic ecosystem, has a regular level (3 on a scale of 1-5), indicating that water pollution and sedimentation are affecting the aquatic environment.

- 1.6 **Soil resources.** The forest cover protects the fragile soils in the mountainous areas. The soils in this part of the Basin are not appropriate for agriculture due to their limited depth and they are highly vulnerable to soil erosion if the forest cover is removed due to the steep slopes and the continuous rainfall throughout the year. The lands appropriate for agriculture are mainly located in the Talamanca valley (middle sub-basin) inhabited by Bri Bri and Cabécar indigenous population, which cultivate organic bananas (2,450 ha.), produce a combination of organic cacao and banana in agro-forestry systems (3,600 ha.), and in the fertile flood plain in the lower part of the Basin there are extensive commercial banana plantations (12,400 ha.). The process of land degradation is incipient and is localized mainly in the following areas: (i) in the margins of the indigenous territories of Bri Bri y Cabécar (middle sub-basin); (ii) in the Yorkín watershed, associated with cattle grazing promoted by ladinos and non-native indigenous inhabitants (Ngöbe-Buglé); (iii) in the Panamanian side of PILA; and (iv) on the hillsides and flood plain in the lower sub-basin. At least 3,340 ha. in these areas are subject to conflicting land use, which contributes to land degradation and soil erosion. In these areas, slash-and-burn practices to prepare for cattle grazing contributes to soil erosion during the heavy rains affecting the area throughout the year.
- 1.7 **Other environmental goods and services.** The forest cover in the Basin also mitigates the effects of natural disasters such as tropical storms and earthquakes, acting as a regulating sponge during torrential rains, reducing vulnerability to flash floods, mudslides and landslides. It has the same effect in terms of holding and stabilizing steep slopes and hill land areas during earthquakes. In addition, the forests, in combination with the indigenous agroforestry systems, capture an estimated volume of 647,444 tons of carbon (representing 2,374,000 tons of CO₂) per year, contributing to climate change mitigation. Finally, the scenic beauty provided by the variety of ecosystems, in combination with the cultural values¹³ represented in the Basin, offers unique conditions for tourism.

D. Socioeconomic context

- 1.8 **Population.** An estimated 33,500 people live in the Basin, of which 19,500 (58%) live in Costa Rica (Talamanca Municipality) and 14,000 (42%) in Panamá (Changuinola Municipality). In the upper sub-basin, there are 848 inhabitants of the Bri Bri and Cabécar ethnic groups (0.42 inh./ha.); in the middle sub-basin 8,375 (16.4 inh./ha.), of which 94% are indigenous from the Bri Bri and Cabécar groups; and in the lower sub-basin 24,358 (72.5 inh./ha.), dominated by the ladino population and to a lesser extent

¹² This is a bioindicator measured by the local non-governmental organization ANAI, analyzing the presence of certain indicator species that indirectly reflects the quality of the aquatic environment in terms of pollutants and sedimentation. The gradient goes from very poor, poor, regular, good and excellent.

¹³ The Basin has the highest concentration of indigenous population in Costa Rica (9,348 people), concentrated in the upper and middle basin in the legally established indigenous territories.

also by afrodescendants and native (Bri Bri and Cabécar) and non-native (Ngöbe-Buglé) indigenous groups.

- 1.9 **Poverty.** The social indicators are significantly lower than in nearby areas and compared to the national averages. This is particularly the case in the upper and medium sub-basins, where more than 95% of the population is indigenous. The Basin is amongst the poorest areas in the two countries. Talamanca is the municipality in Costa Rica with the lowest Social Development Index¹⁴, whilst the Human Development Index in the District of Changuinola in Panama is significantly lower than the national average¹⁵. The population in the lower sub-basin has increased significantly during the past ten years; in the Costa Rican side by 11.4% (compared to the 4.5% in the Limon province¹⁶) and in the Panamanian side by 2.6% (compared to -0.4% in the Bocas del Toro province).
- 1.10 **Access to basic services.** 29% of the population (9,700 inhabitants) does not have access to potable water. In the upper and middle sub-basins, the situation is graver, as the access to potable water is only 83% and 47% respectively. The quality of the water is generally low (with fecal coliform contamination) because of deficient treatment and distribution systems. The human population in the upper and middle sub-basins gets its water from the creeks and natural springs, whilst the aquifer (artisanal wells) is the main source for water in the lower sub-basin. Whilst sewerage systems and treatments facilities are inexistent in the Basin, latrines are extensively being used. Apart from in the settlements of Bri Bri y Sixaola, there are no solid waste facilities. 76% of the population has access to electricity (although of unreliable quality), mainly in the principal population centers (Bri Bri and Sixaola). In the upper and middle sub-basins, however, the situation is worse, as the access to electricity is only 3% and 41% respectively.
- 1.11 **Culture and ethnic groups.** The Basin contains six indigenous territories, four in Costa Rica (the indigenous reserves Bri Bri of Keköldi, Talamanca, Cabécar of Talamanca and Telire, totaling an area of 86,700 ha.) and two in Panama (Bri Bri and Naso totaling 261 km²), even though the two latter lack legal status as “comarca” or formal indigenous territory. The human population in the Basin is pluricultural, with 58% being indigenous, 38% ladinos and 4% afrodescendants. The afrodescendant population is concentrated along the coast, whilst the indigenous populations of Bri Bri and Cabécar are concentrated in the upper and middle sub-basins, in the legally declared indigenous reserves in Costa Rica (Cabécar de Telire, Talamanca and Bri Bri of Talamanca) and in the Bri Bri and Naso Teribe areas in Panama (currently not declared as indigenous territories), where respectively 100% and 94% of the population is indigenous. The ladino population is mainly represented in the lower sub-Basin.

¹⁴ Talamanca has a Social Development Index (SDI) value of 0. SDI is an integrated indicator developed by MIDEPLAN to measure social gaps between different geographical areas. It considers: educational infrastructure, access to educational programs, infant mortality, deaths among the population under 5 years with regard to the general, delay in size on first grade school population, average monthly consumption of residential electricity, and births of children of single mother. The highest (100) value corresponds to the canton in the best socio-demographic situation and the lowest (0) to the one that is most behind in its level of development.

¹⁵ Changuinola has a Human Development Index of 0.608 compared to the national average in Panama of 0.707.

¹⁶ Costa Rica national average of population growth for the same period is 2.9%.

- 1.12 **Land tenure:** The Basin presents a diversity of legal land tenure regimes. Of the 289,000 ha, protected areas and formalized indigenous territories represent 50% and 20%, and the remaining 20% is subject to a variety of legal regimes. In terms of the transboundary protected areas, Gandoca Manzanillo and San San Pond Sak are both categorized as multiple-use areas which allows private property within its limits. In PILA, on the other hand, all lands are public¹⁷. In the Panamanian sector of Yorkín (within PILA), however, illegal invasions have been reported. The indigenous territories are private collective properties, where the Indigenous Government appears as the legal owner. Within these territories, however, there are conflicts with non-indigenous people¹⁸. The size of the properties in the lower sub-basin show a clear concentration of large landowners: 17% of the properties are larger than 0.5 km² (corresponding to 59% of the cultivated surface) and 15% are smaller than 0.05 km² (corresponding to 1.3% of the cultivated surface).
- 1.13 **Economic activities.** The Basin's economic and productive basis is concentrated in the primary sector, representing mainly agriculture, and to a lesser extent cattle raising and fishing¹⁹. There is some commercial activity in the lower sub-basin (concentrated in Changuinola and Bri Bri), as well as in the border area, but industrial and/or transformation activities are practically non-existent. The *lower sub-basin* is the most important from a productive and employment point of view, with a high concentration of export-oriented musaceas (plantain and banana) plantations, characterized by modern production methods, high infrastructure investments, intense pesticide use²⁰ and prominence of large multinational companies, as well as the highest supply of commercial items and services. On the Panamanian side from the border of the Sixaola River down to *San San-Pond Sak* cattle grazing is prominent. In the *middle sub-basin* (Talamanca Valley), the indigenous communities focus their productive activities mainly on low-technology agriculture, including organic banana and cocoa production involving approximately 1,100 producers increasingly linked to international markets, and to a lesser extent forestry, low-scale cattle raising, fishing, as well as tourism on a complementary level. Subsistence farming is also prominent, but lands used for annual cultivations (beans, rice, corn) are increasingly being converted to musaceas cultivation. Low productivity, insufficient information and technical assistance, scarce credit opportunities, limited access and weak processing and commercialization mechanisms constitute important barriers for the development of these communities. Tourism is a dynamic sector that potentially could expand as a complementary source of revenues for certain communities²¹. With the exception of the coastal sites Puerto Viejo (Costa Rica) and Bocas del Toro (Panama), which are both experiencing tourism expansion, the sector is currently not very developed. The Basin has a wealth of attractions to develop,

¹⁷ In both countries land regularization and conflict resolution in protected areas and indigenous territories are promoted. In Costa Rica by the IDB-funded Cadastre Program and in Panama by PRONAT.

¹⁸ According to estimates of the National Development Program of Indigenous People, around 15% of the Cabecar territory and 35% of the Bri Bri territory is in the hands of non-indigenous groups.

¹⁹ Approximately 33,000 ha. (11.4 % of territory) are used for cultivation and cattle grazing, concentrated in the lower and middle basin: bananas (12,400 ha.), organic bananas (2,450 ha.), organic banana/cocoa (3,600 ha.), mixed cultivation (25 Km²), plantain (3,000 ha.), agro-forestry plantain production (1,100 ha.), mixed cultivation, grazing, unused farms (8,000 ha.).

²⁰ The production of banana in Changuinola reports a rate of pesticide application that ascends to 75/ha/year.

²¹ The Tourist Network of Talamanca that operates in the lower and middle basins has over the last two years (2003-2005) succeeded in attracting 6,338 tourists.

including eco-tourism (such as trekking in the rain forest), river trips, ethno-tourism, agro-tourism, but these products are in incipient development. Weak marketing, limited local capacities in tourism management and access to financing is limiting tourism development, thus preventing benefits to be expanded from the coastal areas towards the middle and upper sub-basins. Finally, the productive activities carried out in the *upper sub-basin* are constrained, among others, by the legal status of the protected areas. Furthermore, the sustainable use of the resources is facilitated by the fact that the indigenous communities govern important segments of that area, which promotes the application of traditional knowledge in productive activities consistent with the carrying capacities of the territory. The main productive subsistence activities are low-technology cultivations (corn, beans, potato), complemented by small-scale cattle grazing, hunting and fishing.

E. Regional and national policies and institutional frameworks

- 1.14 **Border cooperation.** The Costa Rica-Panama Border Development Cooperation Agreement signed in 1991 aims to strengthen and facilitate integration efforts and promote the integrated management of the binational area. It establishes an institutional framework for border area cooperation, including the Permanent Binational Commission and its respective Executive Secretariats within the Ministry of Economy and Finance (MEF) in Panama and the Ministry of Economic Planning (MIDEPLAN) in Costa Rica. The proposed Project is conceived within this legal framework.
- 1.15 **Basin management.** At the *national* level, the proposed Project is consistent with biodiversity, water and soil strategies and regulations. In Costa Rica, the National Water Policy, the National Health Policy 2002-2006, the National Environmental Strategy 2005-2020 and the proposed Water Bill, stipulate that water resources should be managed in an integrated, decentralized and participatory manner, where the watershed should be the preferred unit of planning and management. The Biodiversity Law defines the Ministry of Environment and Energy (MINAE) as the responsible institution for Basin management. However, this requires close collaboration with other stakeholders, such as MAG, which is responsible for applying the Soil Use, Management and Conservation Law. The latter Law requires MAG to develop soil resources management and conservation plans and associated instruments (such as certifications of sustainable land-use), which in turn need to be coordinated with the municipalities in order to apply a property tax-discount²². In Panama, the National Environmental Law gives ANAM the main responsibility for watershed management, including development of corresponding environmental land use plans²³. With regards to *binational* basins, the Costa Rica-Panama Border Development Cooperation Agreement gives MIDEPLAN and MEF a special mandate to coordinate interventions. During the formulation of the RSDS, an Indicative Functional Land Use Plan was developed in a participatory manner amongst the stakeholders. It was conceived as a general guiding instrument for land-use

²² These instruments do not exist in the Sixaola River Basin.

²³ This instrument does not exist in the Sixaola River Basin.

planning²⁴, but its effective implementation requires the development and approval of the referred plans mentioned above.

- 1.16 **Co-management of protected areas.** In Costa Rica, the laws governing protected areas are much more restrictive than similar laws in Panama, and more ambiguous with regard to the issue co-management. There are, nevertheless, some experiences of co-management, that recently have been subject to scrutiny by the Controller's Office. This institution has not prohibited co-management, but it does acknowledge the need to develop procedures and policies for its formalization. Panama's legislation, on the other hand, provides for co-management of protected areas through concessions²⁵ and the application procedures are relatively clear.
- 1.17 **Transboundary protected area management.** The administration of the PILA has been qualified as deficient by the Controller's Offices of both Costa Rica and Panama, and the environmental authorities of both countries are called upon to improve the coordination and binational management. In response, MINAE and ANAM, Panama established the PILA Binational Commission, which is currently developing an action plan. One of the principal aims is to harmonize the two existing management plans of PILA, especially with regards to zoning and management criteria in the border areas. Among the priority topics considered is the need to develop co-management arrangements, in particular involving indigenous communities, in an effort to improve protected area management effectiveness²⁶. The environmental authorities, as well as the involved civil society organizations, also acknowledge the need to enhance integration of the coastal transboundary protected areas (San San Pond Sak and Gandoca Manzanillo), including harmonized management plans and joint management activities.
- 1.18 **Indigenous territories.** Indigenous territories (called Indigenous Reserves in Costa Rica and Regions in Panama) and the autonomy of indigenous peoples are recognized in specific laws and in Treaty No. 169 of the International Labor Organization (ILO) ratified in both countries. In Costa Rica, Law 6172 establishes that the indigenous government are made up by the Associations of Integrated Development (ADI), and in Panama it is established that each territory must define their form of government. Within the territories, the Indigenous Governments act with a relative autonomy.
- 1.19 **Schemes for the payment for environmental services.** Costa Rica has several years of experience in developing and implementing a variety of mechanisms for the payment of environmental services, mainly through the Fund of Forest Financing (FONAFIFO) linked to MINAE. Since 1999, FONAFIFO has involved a total of 6,567 hectares²⁷ in the Basin, of which almost half (3,707 hectares) are within indigenous territories. The contracts in indigenous territories are signed with the ADI, which administrates and defines the destination of the funds. For example with these funds ADI has paid the

²⁴ The allocation of investments financed by the 1556/OC-CR and 1439/OC-PN Programs must follow this plan.

²⁵ Thus article 66 of Law 41 of 1998 establishes that the ANAM is empowered to grant service and administration concessions in the protected areas.

²⁶ Panama is currently preparing a Services and Administration Concessions Plan to prioritize the protected areas to be granted in concession, and PILA has been mentioned as a priority site.

²⁷ Owners of properties under forest management receive approximately US\$50/ha per year, for 5 years contracts.

salaries of some indigenous rangers. Currently, indigenous communities are seeking to make the environmental services provided by their agro-forestry systems eligible for participation in the payment scheme and they are also working on developing an Indigenous Environmental Services Certificate to collect private funds. In Panama, an Environmental Economy Unit linked to ANAM was established in 2004, in order to develop the payment for environmental services system. As part of this process, the Government has promoted two specific actions in the Basin: on one hand, it hired a consultancy to carry out an economic valuation of the natural patrimony of the PILA, and through the IDB-funded Program in Bocas del Toro (1439/OC-PN) a study is being contracted to determine the viability of applying the concept in the Basin.

- 1.20 **Environmental pollution control.** Both countries have legislations and policies for pollution control, including both regulatory and market-based (incentive) prescriptions. Effective pollution control, however, is constrained by institutional overlaps, unclear functions and jurisdictions, limited coordination and unharmonized procedures, and variable technical capacities in these entities to monitor and enforce the legislation. In both countries, mechanisms to tax polluting discharges to water bodies are currently under incipient discussion. Costa Rica recently took a step forward in this process by adopting regulations for the Creation of the Environmental Tax for Polluting Discharges, but there is a need to implement the mechanism at the pilot level. In Panama this process is advancing more slowly.

F. Threats and root cause analysis

- 1.21 Although the overall environmental condition in the Basin is relatively good, a series of emerging and interrelated problems affecting the biodiversity, water and soil resources are threatening the medium and long-term functional integrity of its ecosystems. Some of these threats appear to be relatively localized to certain areas on both sides of the border but there is an eminent risk that these problems spread throughout the Basin and worsen if priority and urgent actions are not taken. A summary of the main threats to the integrity of the Basin's land, water and biodiversity resources are as follows:
- 1.22 *Agricultural encroachment, inappropriate subsistence agricultural practices and large-scale commercial crops.* Although productive areas in the middle sub-basin are still dominated by sustainable agro-forestry and silvo-pastoral practices, as local population levels and livelihood needs increase, agricultural encroachment is bound to spread throughout the middle sub-basin. Currently, encroachment is particularly heavy in the Yorkín river watershed, but can also be observed elsewhere. Increasingly, unsustainable practices can be observed, including reduced fallows, slash-and-burn agriculture and agriculture on steep slopes. Some of the more evident results are nutrient depletion and soil degradation, which are contributing towards declining farm productivity. This is also a primary contributor towards habitat fragmentation, affecting some of the biological corridors in the area. Additionally, monoculture of bananas in the lower sub-basin has affected the agro-biodiversity presented in that part of the Basin.
- 1.23 *Conversion of land to cattle ranching.* Cattle ranching is not a typical activity for indigenous groups in the Basin, and the introduction of cattle is mostly driven by ladino

ranchers. Given the fragile soils, cattle ranching is considered to be a highly inappropriate land use. In the Yorkín watershed stocking intensities on rangelands do not reflect their carrying capacities and overgrazing is a problem, resulting in soil compaction and permeability reduction, effectively reducing the chances of future regeneration of the forest. Furthermore, as heavy rain falls on the impermeable grazing areas, soil is washed off and contributes heavily to rampant sedimentation levels in the rivers and streams. Cattle ranching is spreading rampantly in Panamanian areas adjacent to the Basin, and the potential of expansion into the Basin is considerable. In fact, of the approximately 17,000 ha. of the PILA Panama that forms part of the Basin, an estimated 4,000 ha. have been converted to grazing areas.

- 1.24 *Logging.* While deforestation in the Basin in general is not alarming, some zones show a serious increase in unsustainable extraction of timber. Encroachment has been reported on forested areas in the process of logging for commercial timber species, resulting in the opening of tracks in the forests to facilitate access and transport the illegally harvested timber through some Cabécar indigenous territories. These timber roads subsequently tend to facilitate hunters' access to forest interiors of Gandoca Manzanillo, and the Bri Bri de Keköldi indigenous territory.
- 1.25 *Water pollution due to human and animal wastes, and agrochemical run-off.* Cattle ranching, as well as human wastes from human settlements without proper wastewater and solid waste management systems, are contributing to the contamination of the binational river system. Furthermore, runoff from extensive and agrochemically intensive commercial banana production, as well as more limited but pesticide intensive small-scale agriculture, reaches the waterways constantly throughout the year (because of year-round heavy rainfall). As pollutants are transported downstream to the coastal and marine areas, it affects the health of ecosystems, such as wetlands, mangroves and coral reefs, as well as oceanic waters in the Caribbean Sea, and also has an impact on human health.
- 1.26 *Over fishing and harmful fishing practice:* Fish protein is an important complement to local population diet, and several species are very sought after. Over fishing is a widespread problem in the indigenous areas, and harmful fishing practices applying poison and explosives has a negative impact on the aquatic ecosystem.
- 1.27 *Hunting and extraction of flora and fauna.* Local inhabitants in the upper and middle sub-basins have traditionally supplemented their income by hunting of wildlife, both for food and for the commercialization of animal fur and trophies. Species populations have been drastically reduced or altogether disappeared from certain zones. For example, in and around the indigenous territory of Naso Téribe, species like the howler monkey, ant eater, white-tailed deer, harpy eagle, great curassow, and several parrot species have disappeared²⁸. In the coastal areas indiscriminate hunting of wildlife, mostly mammals, as well as sea turtles for the commercialization of meat and eggs, has been registered. In addition to hunting, certain animal species such as parrots, songbirds, and reptiles are caught for domestication. Ornamental plant species such as orchids and heliconias are extracted for their decorative and economic value.

²⁸ Some of these species are protected in Panama by the law, due to the population reductions and threat of extinction.

- 1.28 The **main root causes contributing to the loss of biodiversity, the degradation of land resources and the deterioration of the binational water body**, include:
- 1.29 *Limited sustainable alternative livelihoods.* Poverty is widespread throughout the Basin, but particularly rampant in the upper and middle parts, where the economic activities currently practiced by the human population are largely limited to an intensification of agricultural practices and the illegal extraction of flora and fauna in response to both protein needs and economic driving forces. The problem is compounded because the poor, often the indigenous communities, tend to have limited access to government services, including support to enhance productivity and commercialization, as well as credit support. This constitutes a key problem in those areas, because it correlates to a propensity against technological innovation. While commercial production is increasing in the lower sub-basin, the remaining areas remain very isolated in terms of sustainable livelihood alternatives. The consumption needs of the increasing population must therefore be absorbed by a limited pool of natural resources, leading to overexploitation.
- 1.30 *Unsustainable economic activities are poorly regulated, monitored and controlled.* Unsustainable activities such as illegal logging, intensive agriculture (agro-chemical intensive), destructive fishing applying dynamite and poison and extensive cattle grazing are taking place in a context of a weak and unharmonized (between the two countries and between sectors) regulatory, standards and control frameworks, including limited opportunities for co-management and local involvement. Furthermore, there is an insufficient presence of adequately trained and equipped personnel²⁹ with responsibility for monitoring and controlling such activities. This situation is further aggravated by the fact that local inhabitants and producers seem to remain largely unaware of the advantages of conserving and sustainably managing native flora and fauna and agrobiodiversity, and of the existing natural resources protection laws and regulations.
- 1.31 *Institutional limitations to mainstream ecological management objectives within the development agenda.* Despite recent efforts to develop the RSDS, there is an apparent lack of functional binational institutional frameworks, as well as incipient technical and operational capacities of the involved local and regional authorities (including the indigenous ones), as well as civil society organizations, to effectively apply integrated management and planning practices in a coordinated and participatory manner.

G. Project strategy

- 1.32 The depicted state of the Basin is the result of a complex relationship between multiple factors. During the Project's preparation phase, it was evident that having two countries with parallel institutions with varying technical and operational capacities at the local level, three sub-basins (upper, middle and lower) with very different problems and realities, as well as interaction between multiple economic, social and ethnic sectors, inhibits an appropriate coordinated response by the two Governments. The Project seeks to ensure that the working relationship that already exists between the two countries will be strengthened over the course of the Project, since a well functioning institutional

²⁹ This includes personnel from public institutions at the regional and local level, as well as indigenous communities and civil society organizations.

structure will be fundamental to the Project's success and sustainability. To that end, Project implementation arrangements will seek to reinforce the binational decision-making process responding to a single vision for the integrated management of the Basin, with ample participation of all stakeholders.

- 1.33 An analysis of prior and current project interventions showed a tendency to focus on single productive sectors, ethnic groups, or areas, evidencing a failure to not fully take into consideration the interrelated nature of the problems in the Basin. In this context, *biodiversity loss* cannot be halted without addressing problems related to the need of increasing alternative livelihoods and sustainable economic activities. *Land degradation* processes cannot be reversed without ensuring proper land use, through the promotion of collaborative territorial management arrangements involving the local inhabitants and the institutions, which need to be technically and operationally strengthened, acting under the appropriate regulatory and incentive framework and guided by reliable information. The *integrity of the water system* can only be achieved if the forested lands are preserved and pollution levels are reduced, which requires effective mainstreaming of ecological considerations in the development of the Basin.
- 1.34 This Project is consistent with the RSDS, which has been formulated jointly and in a participatory manner by the governments of Costa Rica and Panama. The Strategy will be implemented through two national programs financed by the Bank. The GEF resources will serve to cover the incremental costs related to the global benefits of integrated binational management of the Basin, while the above mentioned programs will finance the necessary investments required for sustainable development in benefit of the local populations. The proposed intervention has been developed through an integrated, as opposed to sector-specific approach, characterized by increased levels of coordination between the two countries, ample participation of institutions, social and ethnic groups, a process initiated during the formulation of the RSDS.
- 1.35 The project has also been formulated in accordance with the **GEF Operational Program #12 (Multiple Focal Area)**, with the aim to (i) create the appropriate conditions in the Binational Sixaola River Basin and in the two countries for developing and implementing proper policies, regulations, and incentive structures to support integrated ecosystem management; (ii) strengthen the capacities of institutions and the local population to work in a coordinated and participatory manner to implement integrated ecosystem management interventions; and (iii) make investments based in integrated ecosystem approaches and stakeholder partnerships, to simultaneously address local/national, and global environmental issues within the context of sustainable development.
- 1.36 The project is also in conformity with several **GEF strategies and priorities** established in the GEF Strategic Business Planning, as follows: BD-1: "Catalyzing Sustainability of Protected Areas"; BD-2 "Mainstreaming Biodiversity in Production Landscapes and Sectors"; EM-1 "Integrated Approach to Ecosystem Management"; IW-1 "Catalyzing Financial Resources for Implementation of Agreed Actions"; and SLM-2: "Implementation of Innovative and Indigenous Sustainable Land management Practices". Contributions to the GEF's strategic targets for biodiversity will be documented through the GEF BD-1 and BD-2 Tracking Tools (see [Appendix E](#)). Lessons learned through the

recent “Review of the GEF Operational Program 12” have guided the project design, particularly with regard to securing multifocality and synergy, but also by seeking to replicate integrated approaches of top rated OP-12 projects.

- 1.37 The project responds to the Strategic Plan for the Convention of Biological Diversity (CBD) and its design complies with its ecosystem approach principles, as defined in decision VII/11. Also, United Nations Convention to Combat Desertification (UNCCD) regarding integration of land degradation issues with other GEF focal areas, has been followed.
- 1.38 The Project intervention has emphasized **cost effectiveness** by: (i) capitalizing on the existing local and regional capacity and potential, thereby avoiding a considerably more expensive project intervention based predominantly on extensive central government control over the Basin’s territory; (ii) enhancing binational coordination and integration of management practices; and (iii) promoting long-term shifts in investments and expenditure by public and private stakeholders, in favor of measures that will counteract the emerging trends towards environmental degradation in the Basin and thus prevent further negative impacts that are likely to be more costly to mitigate once they appear.
- 1.39 The proposed Project will capitalize on the experiences and **lessons learned**—both positive and negative-acquired by the Bank during the preparation and execution of other national and regional sustainable development projects³⁰, including, among others: (i) the need to promote effective integration among involved stakeholders, institutions across sectors and associated donors and projects; (ii) design and implement activities that address the priorities expressed by the communities, (iii) the importance of incorporating conflict resolution activities; (iv) coupling long-term development objectives with tangible short-term benefits to sustain the interest of the stakeholders; (v) the need to constantly strengthen stakeholder capacities; and (vi) ensure effective and transparent feedback mechanisms amongst all involved parties to promote accountability and responsive project management.

H. Coordination with strategies, projects and programs of the Bank, GEF, and other development financing institutions in the Region

- 1.40 ***Inter-American Development Bank.*** The Proposed Project responds to the sectoral, regional and country level policies and strategies of the Bank. The Project will contribute to implementation of aspects of the Bank’s Environmental Strategy in its objectives to strengthen regional environmental institutions and harmonizing regulatory frameworks, as well as promoting the sustainable management of regional public environmental goods and services. The Banks’ country strategy for Panama focuses on boosting the economy’s competitiveness and building human and productive capital, including the development of natural resources on a sustainable basis while consolidating the institutional, legal, and regulatory framework for their management and promoting decentralization. In Costa

³⁰ For example: Darién Sustainable Development program in Panama (1160/OC-PN), Sustainable Development Program the Upper Lempa River Basin (CA-0034), Environmental Management of El Cajón Reservoir Watershed in Honduras (918/SF-HO and 787/OC-HO), Integrated Management of the Montecristo Trinational Protected Area (RS-X1016), Environmental Protection and Maritime Transport Pollution Control in the Gulf of Honduras (RS-X1009).

Rica, the Bank's country strategy is broadly oriented to the consolidation of the macroeconomy and accelerating economic growth, including the development of investments in productive sectors and the sustainable development of the rural economy.

- 1.41 The Bank is financing the following two programs which will serve as co-financing to the Project³¹: (a) Sixaola Binational River Basin Sustainable Development Program in Costa Rica (approved in 2004, US\$12,000,000), which has the following four components: (i) environment and natural resources management and vulnerability reduction; (ii) productive diversification; (iii) public services and basic infrastructure; and (iv) strengthening of management capacities at the local level, as well as at the basin and binational levels, and (v) Multiphase Program for Sustainable Development of Bocas del Toro in Panama (approved in 2002, US\$16,900,000), which has the following three components: (i) strengthening management capacities of local and provincial institutions and civil society organizations; (ii) sustainable management of natural resources and productive development; and (iii) basic services and transport infrastructure. All above mentioned components will provide co-financing to the Project, with the exception of the components related to basic services and infrastructure. The Bank is also preparing a Program for Tourism in Protected Areas in Costa Rica (CR-L1001), which will include Cahuita National Park (adjacent to the Basin) as a pilot site.
- 1.42 The Bank, together with the World Bank, is also serving as implementing agency for the Regional GEF project on Integrated Ecosystem Management in Indigenous Communities, which has the Talamanca - Bocas area as one of several priority sites in Central America³². In Bri Bri y Cabécar indigenous lands located in Talamanca-Bocas del Toro, the project will finance strengthening of indigenous organizations; support for organic production, agro-industrialization, commercialization and the promotion of traditional products; support for the development of tourism and environmental services; and improve forest management and reduce illegal timber extraction. Coordination meetings have been held with the Director of the referred project, and agreements have been reached with regard to coordinating the preparation of annual work plans and ensuring that project intervention strategies and methodologies are harmonized and in line with the strategic priorities outlined in SLM-2.
- 1.43 **Other GEF Projects.** Costa Rica is currently preparing a UNDP/GEF project for the consolidation of protected areas, including legal reform and institutional strengthening of the National System for Conservation Areas (SINAC), enhancing participation of local actors in the management of protected areas and improving the management of terrestrial and marine protected areas. Coordination has been ensured through involvement of the Director of SINAC in the binational advisory group established for the preparation of the proposed Project and synergies will be sought particularly in the efforts to facilitate co-management arrangements in the transboundary protected areas in the Basin. Also in Costa Rica, a World Bank/GEF project is currently under preparation for mainstreaming market based instruments for environmental management, including the development of mechanisms for payments for environmental services. Collaboration will be sought to

³¹ Only the portions of these Programs directly applicable to the intervention are considered as co-financing.

³² Project financing includes US\$5,000,000 from IDB/GEF and US\$4,000,000 from WB/GEF for activities in seven countries.

ensure synergies with regards to activities carried out in the Talamanca mountain range. At the regional level, UNEP is serving as implementing agency for a GEF project focusing on reducing pesticide runoff to the Caribbean Sea off Colombia, Costa Rica and Nicaragua. Collaboration will be sought in the efforts related to developing incentive mechanisms to reduce pesticide use in the Basin (Component 2).

- 1.44 **Other donors.** The Nature Conservancy (TNC), through its Parks in Peril project, is supporting ANAM and MINAE in strengthening the work of Binational Commission for PILA, in particular related to the formulation of management plans, the design of a biodiversity monitoring system for the park and promoting co-management initiatives and strengthening of local guard and surveillance teams (COVIRENAS); as well as initiatives to promote the sustainable use of biodiversity (eg. tourism, hunting, fishing, medicinal plants, animal husbandry, non timber forest products). Conservation International (CI), on its part, is supporting a manatee monitoring program in *San San Pond Sak*, a tapir monitoring program in PILA and the indigenous territories, as well as promoting the connectivity of the Talamanca-Caribe Biological Corridor. During the preparation of the proposed Project, representatives from both TNC and CI have participated in preparatory workshops and meetings. Synergies will be sought for activities in all three components of the proposed Project and the resources from TNC and CI are considered as associated funding. In addition, the European Commission is financing a nationwide Program for strengthening municipal Government in Costa Rica. It is expected that it will provide associated funding to strengthen the technical capacities of the Talamanca Municipality.

II. PROJECT OBJECTIVES AND DESCRIPTION

A. Project objectives

- 2.1 The **objective** is to contribute to the sustainable use and conservation of biodiversity, water, and soil resources, through the creation of an enabling environment for the integrated and cross-cutting management of the binational Sixaola River basin.
- 2.2 The **specific objectives** are to: (i) strengthen the binational institutional framework for integrated basin management and enhance the required technical and operational capacities of the involved institutions, indigenous organizations, and civil society organizations; (ii) promote the adoption of productive models that are compatible with the conservation and sustainable use of the water and soil resources; and (iii) promote the conservation and sustainable use of globally important biodiversity.

B. Project description

- 2.3 To reach to these objectives, the Project has been structured in the following three interrelated components: (i) strengthening of the institutional framework and the technical and operational capacities for integrated management; (ii) promotion of productive practices compatible with the conservation and sustainable use of water and soil resources; and (iii) conservation and sustainable use of biodiversity.

2.4 With the exception of paragraphs 2.11, 2.18 and 2.25, the following paragraphs detail the use of the GEF grant and local counterpart resources. Paragraph 2.11, 2.18 and 2.25 summarize activities to be undertaken primarily through the implementation of the two IDB financed programs (1556/OC-CR and 1439/OC-PN). The GEF grant will be executed through an estimated four administrative service contracts, 11 technical service contracts and three equipment contracts.

1. Strengthening of institutional frameworks and technical and operational capacities required for integrated management (US\$4,025,000)

2.5 Actions under this component will strengthen the technical and operational capacities of stakeholders at different levels, required for effective binational and integrated cooperation around the common vision and goals set out in the RSDS, as follows.

2.6 To *strengthen the technical and operational capacities of key stakeholders* of regional and local public institutions, as well as social actors, the following activities will be financed: (i) the technical and operational capacities of **regional and local public institutions**³³ involved in the management of the Basin will be strengthened in the following manner: (a) based on existing strengthening plans; the technical and operational capacities of MINAE and ANAM will be enhanced, particularly in the areas of water pollution control and protected area management, both through on-the-job training of technical staff and the provision of monitoring, mobilization, communication and surveillance equipment; (b) technical staff from MAG-MIDA and the respective Ministries of Health will receive practical training on the control of agro-chemical use, and equipment will be provided for the establishment of a modern binational agro-chemical registry; (c) technical staff of MAG-MIDA, the Municipalities of Talamanca and Changuinola and ANAM will receive practical training on land-use planning; and (d) installation of the Territorial Information System within the eight institutions; (ii) the capacities of **social actors** to actively participate in the sustainable management of natural resources will be enhanced by the following activities: (a) facilitating the development of environmental management capacities of the Indigenous Authorities³⁴; (b) technical training of personnel from aqueduct associations in watershed management practices; and (c) awareness raising of local actors on the legal and regulatory framework for natural resources management, as well as practical training on participatory environmental monitoring, conflict resolution and surveillance.

2.7 To *strengthen the binational coordination frameworks*, the following activities will be financed: (i) provide organizational support to the Binational Commission for the Sixaola River Basin and the sub-committees for the lower, middle and upper sub-basins (see Section IV); (ii) legal advisory services to provide instrumental legal capacity to binational entities, as a contribution to facilitating future binational administration of projects and resources; (iii) development and implementation of mechanisms to ensure coordination between projects in the Basin, including a consolidated project database,

³³ ANAM, MINAE, MAG, MIDA, Municipalities of Talamanca and Changuinola, and the two Ministries of Health.

³⁴ Including technical capacity building that embraces traditional knowledge and methods, as well as the introduction of pertinent outside approaches, and the provision of basic equipment required for the functioning of environmental units. These activities will be coordinated with the Integrated Ecosystem Management in Indigenous Communities Project.

linked to a publicly accessible web page, as well as the organization of periodic forums and meetings between donors and project executors; and (iv) development of strategic planning instruments, for the Binational Commission of PILA and the Binational Commission of Wetlands, and facilitate the integration of both of them in a single commission for transboundary protected areas.

- 2.8 To ***enhance sustainable financing for the management of the Basin***, the Project will: (i) accompany the relevant institutions in developing instruments to leverage resources, including, among others, concession rights, entrance and resource use fees, payments for environmental services, charges to activities with a high environmental impact; and (ii) analyze the feasibility for establishing a Binational Trust Fund, including the development of an associated funding strategy.
- 2.9 To raise ***awareness and capitalize knowledge related to the sustainable use and conservation of biodiversity, water and soil***, the following activities will be financed: (i) design and implement a locally adapted environmental awareness raising program transmitted through local radio; (ii) interactive environmental awareness raising program for children and youth developed and implemented in association with primary and secondary schools, as well as local civil society organizations; (iii) enhancing horizontal learning amongst indigenous communities by promoting interaction between young producers and older segments of the communities, as well as the systematization of best practices and experience in sustainable agriculture; (iv) targeted applied research grants for students and researchers committed to produce information for adaptive management in the Basin; (v) dissemination of results, experiences and lessons learned through information bulletins, socialization in local and indigenous community events and formal meetings, publications and a project website; and (vi) facilitate participation of involved stakeholders in selected international working groups, workshops and meetings related to the relevant issues (eg. IW-LEARN, IUCN WCPA working group on transboundary protected areas, GWP, Inter-American Water Resources Network-OAS) and enable stakeholder exchanges with similar transboundary projects in the Region (eg. the GEF-supported San Juan River Basin).
- 2.10 To **complement these incremental activities**, the Bank financed program (1439/OC-PN), as well as associated funding³⁵ are expected to co-finance the following activities: (i) strengthening of the management capacity and service delivery by the municipalities of Talamanca and Changuinola, including urban planning and development of tariff systems for public services; (ii) enhancing the organizational and participatory capacity of civil society, with special attention to women; (iii) improving technical capacities of the provincial governments; (iv) administrative and operational strengthening of key sectoral institutions at the regional level, including the preparation of plans and programs, databases, standards and regulations; and (v) identification and development of proposals for payment of environmental services (in Panama).

³⁵ In Costa Rica associated funding is expected from the “*Strengthening of Municipal Decentralization Program*” (CR/B7-310-99-0150) financed by the European Commission, which started in July 2005.

- 2.11 The main **results** expected from this component are as follows: (i) technical and operational capacities of key institutions and actors in the basin strengthened; (ii) effective mechanisms for coordination at the binational level consolidated, including a functioning Binational Commission for the Basin; (iii) sustainable financing mechanism designed; (iv) awareness among local inhabitants enhanced with regard to the value of natural resources, ancestral and low-impact production techniques, and mechanisms for the management of natural resources; and (v) systematization and dissemination of best practices and lessons learned, including an annual report on the condition of the Basin.

2. Promotion of productive practices compatible with conservation and sustainable use of water and soil resources (US\$10,725,000)

- 2.12 This component will contribute to shifting currently unsustainable productive practices in the middle and lower sub-basins towards sustainable use of environmental goods and services, thereby increasing ecosystem resilience and integrity, preserving soil fertility, reducing soil erosion and sedimentation run-off, reducing agrochemical use to sustainable levels, reducing contamination in the binational water body, and preserving hydrological functions of rivers and streams. The component includes the following activities.
- 2.13 To *develop incentive mechanisms to promote environmentally sustainable productive practices*, the following activities will be financed: (i) development of incentive mechanisms to enhance the environmental performance of enterprises, organizations and economic actors; (ii) technical assistance to develop harmonized binational economic instruments to reduce pollution; (iii) support MAG (Costa Rica) in the installation and use of a system for issuing “*Appropriate Soil Use Certificates*” as an instrument required for the application of the incentives provided for in the Land Law³⁶, and promote the development of similar incentive mechanisms in Panama; (iv) provide technical assistance to enable the Municipalities to develop systems that facilitate the application of the above mentioned exemption for payment of real estates taxes (see footnote 36); (v) establish a dialogue with the banking systems and public credit institutions in the two countries to consider developing and applying environmental considerations for the granting of loans for productive activities; and (vi) provide technical assistance for the elaboration and implementation of payment for environmental services mechanisms specifically designed for the Basin, considering existing experience mainly in Costa Rica and promoting binational harmonization.
- 2.14 To *promote the adoption and replication of sustainable productive practices*, the Project will finance the following activities: (i) farms applying sustainable production systems in the middle sub-basin³⁷ will be incorporated in a learning program in which the owners of the properties are encouraged to provide technical horizontal assistance to neighboring farms interested in adopting similar techniques; and (ii) provide “seed” funding to

³⁶ The Law provides for a 40% reduction of real estate tax on agricultural lands certified by MAG to produce according to their carrying capacity and that apply practices for the recovery and conservation of the land.

³⁷ Taking advantage of the already existing experiences of organic production (eg. bananas and cacao), agroforestry systems and integrated farms, currently involving approximately 4,500 hectares.

farmers particularly in the Yorkin watershed, to develop more environmentally sustainable production³⁸, whilst enhancing productivity and income generation.

- 2.15 To ***consolidate an integrated water and soil monitoring system***, the Project will finance the following activities: (i) design and implement initial actions of a cost-effective and sustainable water and soil quality monitoring program; (ii) updating of a baseline of a water and soil quality (to be published within the first year of the Project); (iii) generate a map and databases on sources of contaminating agents and their possible origins to facilitate the development of regulatory, policy and incentive instruments (see paragraph 2.13); and (iv) develop a binational registry of the agrochemicals. These actions will be developed in tandem with the capacity enhancing interventions financed under Component 1, and in concert with public and academic institutions and non-governmental organizations with particular technical expertise in the area.
- 2.16 To ***enhance functional land-use planning in the Basin***, the following activities will be financed: (i) technical assistance to MAG, ANAM and the two Municipalities for the development, implementation and evaluation of specific plans and instruments necessary to regulate and promote sustainable land-use and reduce related conflicts; (ii) accompanying the indigenous groups within protected areas and buffer zones in their efforts to develop and put in place appropriate measures for regulating land use, and (iii) the participatory formulation of a long-term Basin Management Plan.
- 2.17 To ***improve the management of micro-watersheds with community participation***, the Project will collaborate with the aqueduct organizations to carry out the following activities: (i) a comprehensive diagnostic of the micro-watersheds; (ii) participatory development of micro-watershed management plans, including the design of measures to protect perimeters of wells, springs, and sources of superficial waters; and (iii) small-scale demonstration projects.
- 2.18 To ***complement these incremental activities***, the two Bank financed programs, among others, are expected to co-finance the following activities: (i) market research, marketing and feasibility studies to support sustainable production; (ii) agroforestry and sustainable forestry projects; (iii) promotion of environmentally sound production techniques/practices; (iv) preparation and implementation of land use plans; (v) monitoring and control of water quality in and around human settlements in the lower watershed and coastal area; and (vi) basic water and sanitation infrastructure.
- 2.19 The main **results** expected from this component are as follows: (i) incentive mechanisms to promote sustainable production among small and agro-industrial producers; (ii) demonstration projects to facilitate the adoption and replication of sustainable production practices among small-scale producers; (iii) instruments for regulating and promoting sustainable land-use; (iv) integrated water and soil resources monitoring program to inform decision-making and policy development in the Basin; (v) micro-watershed management plans with associated demonstration projects; and (vi) improved basic water and sanitation facilities.

³⁸ Cost-benefit analysis and counterpart inputs requirements will be established in the Project Operating Manual.

3. Conservation and sustainable use of biodiversity (US\$2,105,000)

- 2.20 A series of actions will be supported that will contribute to ensure the long-term health of the Basin's biodiversity, in a way that facilitates conservation of its global value, while simultaneously providing for a low-impact, long-term sustainable use by the local communities. Special emphasis will be made on the Basin's transboundary protected areas³⁹, but certain interventions apply to the entire Basin.
- 2.21 To ***harmonize and implement the management plans of the transboundary protected areas*** the Project will finance the following activities in collaboration with other actors (eg. TNC and CI): (i) develop a binationally harmonized legal, policy and regulatory framework for co-management involving indigenous communities and/or local organizations in transboundary protected areas; (ii) binational harmonization of the internal zoning and management criteria, particularly for the border zone, indigenous lands and in the marine area⁴⁰; and (iii) co-financing of the recurrent costs associated with the implementation of priority actions identified in the binational Action Plans for each of the transboundary protected areas, including joint and participatory biodiversity monitoring and surveillance activities.
- 2.22 To ***establish an integrated monitoring system of terrestrial and aquatic biodiversity***, the Project will finance the development of a permanent and integrated biodiversity monitoring system for the Basin in collaboration with associated partners. Emphasis will be made to integrate all on-going monitoring efforts into an integrated system with common goals, harmonized methodologies and standards for collecting and sharing data in a continuous and permanent manner. The process of developing and agreeing on the structure and requirements of the system will be supported and once adopted, the corresponding training and equipment needs associated to Component 1 will be delivered, promoting synergies and cost-sharing with other actors and financiers.
- 2.23 To ***promote ecosystem connectivity through biological corridors***, the Project will finance a participatory effort to: (i) determine in detail and through field inspections the most critical areas where landscape restoration is needed; (ii) provide recommendations on the most cost-effective measures to be applied on both sides of the border; and (iii) formulate in a participatory manner a binational action plan for the consolidation of biological corridors in the Basin to be disseminated amongst interested parties and potential financiers.
- 2.24 To ***promote alternative livelihoods based on the sustainable use of biodiversity***⁴¹, the Project will finance the following activities: (i) a systematization of the lessons learned from past and on-going alternative livelihood initiatives based on the sustainable use of biodiversity, (ii) participatory preparation of locally adapted interactive guidelines (in

³⁹ As the transboundary protected areas extend beyond the limits of the Basin, certain strategic activities related to the harmonization of management plans will encompass the full extent of the protected areas beyond the limits of the Basin.

⁴⁰ Support will be provided to improve the binational management of the marine areas associated with the coastal transboundary protected areas of Gandoca Manzanillo (CR) and San San-Pond Sak (PN), including development of a harmonized zoning scheme, management criteria and water quality and biodiversity monitoring.

⁴¹ For example: (i) growing and commercialization of native ornamental and medicinal plants; (ii) breeding of native fauna for protein intake and commercialization; and (iii) agro, eco and/or cultural tourism.

both Spanish and indigenous languages) on techniques and approaches for developing alternative livelihoods based on the sustainable use of biodiversity, as well as associated dissemination and training; (iii) facilitate discussions with credit institutions (private and public) on developing innovative credit instruments targeted to the above mentioned alternative livelihoods; and (iv) feasibility studies⁴² for the development of a selection of pilot projects to be financed.

- 2.25 To **complement these incremental activities**, the two Bank financed programs, among others, are expected to co-finance the following activities: (i) implementation of co-management initiatives involving indigenous communities and/or local organizations in critical zones of the transboundary protected areas; (ii) promotion of tourism development in the coastal area, creating production chains, and expanding benefits to the middle and upper areas of the Basin, including the strengthening of a community-based rural ecotourism network and priority infrastructure for tourism visitation in coastal protected areas; and (iii) regeneration and reforestation of riverbanks, critical areas associated with micro-watersheds and biological corridors⁴³.
- 2.26 The main **results** expected from this component are as follows: (i) binational harmonized legal, political and regulatory framework for co-management involving indigenous communities and/or local organizations in transboundary protected areas; (ii) priority elements of transboundary protected area management plans harmonized; (iii) park managers and staff provided with on-the-ground experience in binational collaboration in basic management tasks; (iv) binational biodiversity monitoring system established, delivering accurate information for decision-making and adaptive management; (v) binational action plan for the consolidation of biological corridors prepared and implemented; (vi) an increase in alternative livelihoods based on the sustainable use of biodiversity; (vii) enabling conditions improved for sustainable coastal tourism, with expanding benefits to the middle and upper areas of the basin; and (viii) riverbanks, critical areas associated with micro-watersheds and biological corridors regenerated.

III. COST AND FINANCING

- 3.1 The total cost of the Full Size Project is US\$19,375,000. Of this amount, US\$3,500,000 will be financed by a GEF donation to be administered by the Bank. With the GEF donation, the Bank will make a grant in equal amounts (US\$1,750,000) to Costa Rica and Panama, which will commit to use the resources to finance jointly agreed activities under this binational Project. An additional, US\$14,905,000 will be provided as co-financing from the two IDB-funded Sustainable Development Programs (1439/OC-PN and 1556/OC-CR). Finally, US\$970,000 as incremental co-financing will be provided from the governments of Costa Rica and Panama (mainly in-kind contributions). Table III-1 presents a summary of the distribution of funds by component and source.

⁴² Ecological carrying capacity, environmental impacts/mitigation measures, market analysis, cost-benefit analysis.

⁴³ Taking into consideration the technical inputs provided by studies financed with GEF resources.

Table III-1: Indicative Budget by Source (GEF, IDB and local counterpart) and Investment Item (In US\$ thousands)						
Budget category	GEF-IDB	GOV-CR	GOV-PN	1556/OC-CR*	1439/OC-PN*	TOTAL
1. Direct costs						
1.1 Component 1	925	160	160	160	2,620	4,025
1.2 Component 2	1,290	162	163	8,197	913	10,725
1.3 Component 3	600	90	90	1,182	143	2,105
SUB-TOTAL (Direct cost)	2,815	412	413	9,539	3,676	16,855
2. Project Administration						
2.1 Binational Technical Executing Unit for the Project**	490	73	72	1,150	540	2,325
2.2 Administration of funds (3%)	105	--		--	--	105
2.3 Financial audits	50	--		--	--	50
SUB-TOTAL (Project Administration)	645	73	72	1,150	540	2,480
3. Contingencies	40					40
TOTAL	3,500	485	485	10,689	4,216	19,375
PERCENTAGE	18%	2.5%	2.5%	55%	22%	100%
* Including both IDB loans and local counterpart funding. ** This includes funds for implementation of the Project's replication and monitoring strategy.						

- 3.2 In addition, approximately US\$420,000 and US\$360,000 from complementary projects funded by TNC and CI respectively are considered as associated funding for activities relating to the management of the transboundary protected areas (PILA, *San San-Pond Sak*), consolidation of biological corridors and biodiversity monitoring. Furthermore, it is expected that the European Commission will contribute with an estimated US\$200,000 to strengthen the technical capacities of the municipality of Talamanca.

IV. PROJECT EXECUTION

A. Principles of project execution

- 4.1 Project execution will be guided by five primary principles: (i) ensure the highest degree of integration at the technical and programmatic levels; (ii) build on the existing capacities of local, regional, and national actors to promote decentralized and local execution as a means to maximize the potential for integrated management; (iii) establish effective mechanisms for communication and feedback between stakeholders to promote integration during and beyond execution; (iv) capitalize on previous efforts to promote binational integration by strengthening the institutional framework established under the Costa Rica-Panama Border Development Cooperation Agreement; and (v) grouping of procurement packages to facilitate project implementation and supervision.

B. Binational framework for integrated management

- 4.2 The Project beneficiaries are the Republics of Costa Rica and Panama. In the absence of a binational entity with legal capacity to administer and execute funds for the Basin⁴⁴ the operation will be co-executed by MINAE and ANAM. To ensure the highest degree of integration possible, the Bank will sign a tripartite agreement with both governments, specifying the commitment of each to: (i) execute their respective part of the grant in a joint manner and under a single workplan; (ii) create a Binational Commission for the Sixaola River Basin and a Binational Technical Executing Unit for the Project, both under the umbrella of the Costa Rica-Panama Border Development Cooperation Agreement; and (iii) entrust the financial administration of GEF funds to a specialized financial administration firm ([See Annex 4](#)).
- 4.3 With ample stakeholder participation⁴⁵, the **Binational Commission for the Sixaola River Basin** will provide the strategic policy direction and will be responsible for the overall supervision of Project execution⁴⁶. It will approve the Project's annual work plans and will submit them to the co-executing agencies, MINAE and ANAM, for their formal endorsement. The rules of operation of the Commission will be detailed in the Project's Operating Manual and include specific terms for critical decisions such as the approval of the annual work plan. **Creation of the Commission with the required legal mandate and capacity will be a condition precedent to Project approval.**⁴⁷
- 4.4 The **Binational Technical Executing Unit for the Project** will act as the executive arm of the Commission. It will have a technical coordinator financed by the Project, supported by two specialists on sustainable environmental management of river basins from each country, who will be on detail from MINAE and ANAM on a full-time basis, as well as a representative from the Indigenous Authorities in Costa Rica. The Project will also provide funds to hire short-term technical assistance and administrative support for the Executing Unit. It will be responsible for the technical execution and supervision of Project activities, specifically: (i) prepare the initial work plan, expected completion dates and estimated budget; (ii) prepare subsequent annual work plans; (iii) conduct the selection processes for the procurement of goods and services and instruct the financial management firm to issue the contracts; (iv) supervise execution and approve payments under all consulting services and purchase contracts; (v) coordinate and facilitate the participation of all relevant actors; (vi) monitor and keep records of co-financing; (vii) work with the sub-basin committees to incorporate their input into the planning and execution of Project activities; (viii) present to the Commission the annual work plans for

⁴⁴ The Cooperation Agreement between Costa Rica and Panama for Transfrontier Development, which came into force in 1995, established a Permanent Binational Commission to work on the area covered by the Project, but did not invest it with legal capacity to administer and execute funds.

⁴⁵ Its members would include: government agencies such as MINAE, ANAM, MIDA, MAG, CNE, SINAPROC, Health (regional level); Municipalities of Changuinola, Talamanca; representative from the Huétar Limón Regional Council in representation of MIDEPLAN, JAPDEVA, and the MEF's Provincial Office in Bocas del Toro; one representative from each country in the lower and middle sub-basin committees and one representative from the upper sub-basin (only Costa Rica); Executive Secretariats of the Costa Rica-Panama Border Development Cooperation Agreement in each country.

⁴⁶ The Governments have a shared long-term vision that the Commission gradually be enabled to formally manage the Basin.

⁴⁷ Only the Permanent Binational Commission, the highest level of authority under the Costa Rica-Panama Border Development Cooperation Agreement, has the power to approve work plans. For this operation, the Permanent Binational Commission will delegate this authority to the Binational Commission for the Sixaola Binational River Basin.

their approval and submission to the co-executing agencies for endorsement; (ix) supervise the financial management firm to ensure proper accounting, control and reporting of Project funds; (x) consolidate and prepare all reports to be submitted to the Bank; and (xi) submit requests for disbursement of Project funds with their supporting documentation to the Bank. **Creation of the Binational Technical Executing Unit for the Project with the required personnel and mandate will be a condition precedent to Project approval. Selection of the technical coordinator will be a condition precedent to first disbursement.**

- 4.5 There will be three **sub-basin committees**, one in each of the upper, middle and lower sub-basins⁴⁸. They will include representatives from indigenous communities, development associations, small and medium farmers, environmental organizations and other productive sectors such as tourism. Their main responsibility will be to participate in the definition and prioritization of problems, in the planning of activities and in the social audit of their execution.
- 4.6 The two governments will hire a **financial administration firm** that will be responsible for the administration of the GEF funds. Specifically, the firm will: (i) receive direct disbursements from the Bank to be exclusively used for Project execution; (ii) issue the contracts and payments requested by the Executing Unit following procedures detailed in the Project Operations Manual⁴⁹; (iii) maintain adequate financial and accounting records of all transactions⁵⁰; (iv) prepare, for the submission to the Bank by the Executing Unit, financial reports including a semi-annual report on the status of the revolving fund; (v) maintain specific and separate bank accounts for the Bank's financing and for counterpart funds; and (vi) maintain proper filing systems for documentation supporting disbursements. **The financial administration firm will be hired as a condition precedent to first disbursement.**
- 4.7 The Project Operations Manual will set out the duties and responsibilities of MINAE, ANAM, the Executing Unit and the Binational Commission for the Sixaola Binational River Basin, the financial management firm, and all other relevant actors related to the Project and the rules for its execution. **Prior to Project approval, ANAM and MINAE will approve the Program Operations Manual, previously reviewed by the Binational Commission for the Sixaola River Basin and agreed upon with the Bank.**

C. Project execution

- 4.8 The execution structure for this operation builds upon the coordination and technical execution capacities of the institutions responsible for sustainable management of river basins in each country and is supplemented by a contractual arrangement to provide financial management services to execute Project funds. The Executing Unit brings together the technical expertise of both MINAE and ANAM to work together, under a

⁴⁸ For the IDB Programs these have been established in each country (in the upper sub-basin only in Costa Rica). For the GEF intervention, the middle and lower sub-basin committees in each country will be merged in one for the middle and lower basin respectively.

⁴⁹ The property rights and maintenance responsibilities for all the equipment will clearly be established prior to each purchase.

⁵⁰ The firm will contract an independent financial audit firm, selected by the Binational Technical Executing Unit, to carry out annual audits in accordance with Bank policies and procedures.

common vision, for the integrated management of the Basin. With the presence of the Project Coordinator and with technical assistance financed by the Project, the Executing Unit will ensure that all Project interventions are carried-out efficiently under an integrated approach consistent with both countries' policies and legal frameworks. The execution structure is enhanced by the decision of both countries to hire a specialized financial administration firm to handle Project funds⁵¹ under a unified single mechanism. This firm will be selected competitively by the Executing Unit and hired by each country through MINAE and ANAM. The firm will have, at a minimum: (i) the capacity to operate in both countries; (ii) reliable and safe information and management systems able to track, record, account for and report on all Project transactions; and (iii) previous experience in the financial management of investment projects. Once contracted, the Bank will be able to make direct disbursements to the firm, at the request of the governments.

- 4.9 The Binational Technical Executing Unit will be installed in the Basin (either in Costa Rica or Panama), taking advantage, to the extent possible, of the operational facilities of the IDB Programs. The Bank will assign responsibility for the supervision of Project execution to its Country Offices in Costa Rica and Panama⁵² with the backstop of a specialist from RE2/EN2 at IDB Headquarters in Washington, the latter also serving as contact person with the GEF.

D. Procurement of works, goods and services

- 4.10 The procurement of works, goods and consulting services will be carried out following the Policies and Procedures for Bank Procurement (GN-2349-6 and GN-2350-6) and in accordance with the Procurement Plan currently being prepared for the Project. The GEF grant will be executed through an estimated four administrative service contracts, 11 technical service contracts and three equipment contracts. No exceptions to Bank policies are foreseen. The procurement limits are established in Table IV-1. National Public Bidding and selection will be advertised in the two beneficiary countries. For shopping, to the extent possible, providers from the two countries will be invited. The Bank will apply ex-ante revisions for all purchases.

⁵¹ GEF and local counterpart resources only.

⁵² The final decision on where to install the Executing Unit will be taken by the two Governments before Project appraisal and at that moment the Bank will also determine which Country Office that will have the lead supervision responsibility.

Table IV-1 Procurement Limits (in thousands US\$)			
Type	International Public Bidding	National Public Bidding	Shopping
Goods	≥250	<250 and ≥ 50	< 50
Works	≥1,500	<1,500 and ≥ 250	< 250
Type	International Selection Process	National Selection Process	Selection Based on Consultant Qualifications
Consulting Services	≥ 200	< 200 and ≥100	<100 and ≥10

E. Disbursement period

- 4.11 The disbursement period shall be 48 months from the date the contract goes into effect. The tentative timetable for disbursements is indicated in Table IV-2.

Table IV-2 Indicative Timetable of Project Disbursement (in US\$ thousands)						
Source	Year 1	Year 2	Year 3	Year 4	Total	%
GEF	700	1,050	1,050	700	3,500	18%
Governments	195	290	290	195	970	5%
IDB (1439/OC-PN and 1556/OC-CR)	2,981	4,472	4,471	2,981	14,905	77%
Total	3,876	5,812	5,811	3,876	19,375	100%
Percentage	20%	30%	30%	20%	100%	

F. Special disbursement for Project start-up activities

- 4.12 Upon fulfillment of Article 4.01 (a), (b), (c), (e), and (g) of the General Conditions, ANAM and MINAE may request an initial disbursement of up to US\$100,000 from the Bank to finance project startup activities, including the hiring of the Project Coordinator.

G. Follow-up, evaluation and monitoring

- 4.13 Throughout its lifetime, the impacts of the project intervention will be monitored using the indicators in the logical framework matrix ([Annex 1](#))⁵³. Within the first year of Project execution, the complete baseline of outcome indicators indicated in the log-frame matrix will be consolidated and a detailed monitoring system⁵⁴ will be made operational (see [Appendix F](#))⁵⁵. To the extent possible, efforts will be made to take advantage of the existing monitoring systems and capacities already installed for the Program in Bocas del Toro. Building on existing initiatives promoted by associated partners in localized segments of the Basin, a permanent and integrated monitoring system for the state of the basin’s biodiversity, soil, and water resources will be established (see Components 2, 3) to facilitate decision making-processes and adaptive management by the stakeholders. These systems will be internalized in existing institutions, involving their staff and other local stakeholders, in order to ensure continuity after the life of the project. The project will actively use the GEF BD-1 and BD-2 Tracking Tools to measure the effectiveness of protected area management and the mainstreaming of biodiversity into production landscapes.

⁵³ As per GEF International Waters guidance, these include: (i) regional process indicators; (ii) stress reduction indicators; and (iii) environmental indicators.

⁵⁴ This will include the development of an evaluation methodology and results framework for the pilot projects.

⁵⁵ [Appendix F](#) provides detailed information on the monitoring strategy for the main outcome indicators (incl. monitoring methods, responsibilities and costs).

- 4.14 A mid-term review⁵⁶ will be carried out when 50% of the GEF resources have been disbursed or after 24 months after the Project contract goes into effect, whichever comes first. This review will determine if the Project strategy is performing according to the established objectives, or if adjustments are necessary. When 90% of the GEF resources have been disbursed, a final evaluation will be performed to determine, among others, the extent to which Project objectives have been reached, the level of stakeholder participation in decision-making, positive changes in beneficiary behavior and practices due to the intervention⁵⁷, as well as its sustainability and cost-effectiveness. These evaluations will be guided by the following questions: (i) Is the project successfully contributing to mainstreaming biodiversity considerations in basin planning and development and catalyzing the sustainability of the transboundary protected areas?; (ii) Are producers internalizing sustainable production methods, thereby contributing to reduce land degradation processes and contamination of rivers and streams?; (iii) Is the basin wide governance structure enabling the involved stakeholders (institutions, social, ethnic, and other civil society groups) to function in a effective and coordinated manner to reach the goals outlined in the RSDS?; (iv) Is the Project contributing to enable basic integrated basin management functions to be financially sustainable in the long term?, and (v) Is The Project contributing to enhance the environmental quality of the Basin?

V. BENEFITS, FEASIBILITY AND RISKS

A. Project benefits

- 5.1 The Project will consolidate an integrated ecosystem management model in Basin, in which local and national institutions will be strengthened in order to improve governance of the basin with participation of local stakeholder groups and productive sectors. The proposed approach will deliver a series of benefits for the global environment, for the two involved countries, as well as for the local population in the area.
- 5.2 The intervention will result in **global environmental benefits** within three of the GEF's focal areas. Specific benefits in **biodiversity** include, among others: enhanced conservation and sustainable use of species, protection of habitats, maintenance of ecological functions (such as gene flow), and protection of buffer zones and biological corridors. In terms of **reducing land degradation**, the benefits will include eliminating harmful practices thereby enhancing resilience and integrity of this ecosystem of global importance (promoting appropriate land use and reduction of soil erosion) and capitalization of traditional indigenous knowledge for sustainable land management. Specific benefits in **international waters** include reduction of contamination of the binational water body (sedimentation, liquid and solid wastes, and agrochemicals) and maintenance of hydrological functions. In accordance with the objectives of OP 12, the project will generate global benefits through an integrated approach to basin-wide

⁵⁶ The Mid-term and final evaluations will be performed by a team of consultants contracted by the IDB, using the fee resources provided by the GEF.

⁵⁷ As compared to initial estimates established at the beginning of the Project through surveys and participatory methods.

management, thus securing long-term, cross-cutting, synergic, holistic and sustainable protection of the region's resources.

- 5.3 **National and regional benefits** include, among others: (i) improved technical and operational capacities of institutions, civil society organizations, local governments and indigenous authorities for integrated management; (ii) improved general environmental awareness among the stakeholders; (iii) improved environmental monitoring and enhanced access to environmental information systems to facilitate public and private investment decisions and planning; (iv) enhanced transboundary protected area management effectiveness; and (v) alternative sources of funding for environmental management identified and leveraged. The project will also contribute to achieve regional objectives, related, for example to the consolidation of the Mesoamerican Biological Corridor and the implementation of the Mesoamerican Sustainable Development Initiative of the Plan Puebla Panama.
- 5.4 **Local benefits** include, among others: (i) improved alternative livelihood options and protein sources based on the sustainable use of biodiversity, land and water resources; (ii) improved local socio-economic conditions through reduced water pollution and land degradation, as well as increased access to water and sanitation facilitation, including reduced occurrence of gastrointestinal diseases in the population; (iii) reduced vulnerability to natural hazards through the regeneration of river banks and critical areas; (iv) improved prospects for sustainable nature-based tourism; and (v) increased capacity of national institutions to protect public goods against free riders will enhance the long-term carrying capacity of the Basin. The achievement of benefits at local and national levels will be largely financed by non-GEF co-financing.

B. Feasibility and sustainability

1. Institutional

- 5.5 The institutional feasibility of this operation is based on: (i) utilizing the existing technical capacity of both governments' institutions and providing reinforcement where needed; (ii) promoting the active participation of a wide range of relevant actors under clear guidelines to ensure efficient execution of Project activities; and (iii) supporting both governments' efforts to strengthen the institutional framework provided by the Costa Rica-Panama Border Development Cooperation Agreement. The Executing Unit will draw on the technical expertise of the specialists assigned by MINAE, ANAM and the Indigenous Authorities in Costa Rica, under the guidance of a technical coordinator who will have project management experience related to the sustainable management of river basins. The Executing Unit will work closely with the Binational Commission for the Sixaola River Basin, which, given its wide stakeholder representation, is expected to result in targeted interventions. In addition, the three sub-basin committees will feed directly into the Executing Unit's actions, fostering appropriation of the Project. Finally, the commitment of both countries to implement this Project is strong, as evidenced by their active participation during the design of the intervention. In addition, throughout this process, multiple non-government actors have been also actively involved in developing a joint vision for integrated management of the Basin.

2. Financial

5.6 The fact that the two governments are willing, not only to agree on a common vision for the integrated development of RSDS, but also to increasingly commit public resources in favor of its implementation is a strong sign in favor of financial sustainability. Nevertheless, the Project strategy recognizes that limited public resources need to be complemented by alternative sources. In this context, the Project will develop and put in place a strategy for the sustainable financing of the recurrent costs associated with management of the Basin. In particular, the Project will seek to accompany the relevant institutions in developing appropriate instruments to leverage resources, including, among others: entrance fees, concession rights, resource use fees, payments for environmental services, charges to activities with a high environmental impact, and voluntary payments from private donors. This effort will build upon existing experience from the two countries⁵⁸, capitalize on the initiatives being sought by the local stakeholders⁵⁹, collaborate with associated projects⁶⁰ and will take advantage of ongoing studies⁶¹ currently being developed. Furthermore, the Project will analyze the feasibility for establishing a Binational Trust Fund, including the development of an associated funding strategy. To further promote the binational integration of the transboundary protected areas, the Project will support the initial implementation of priority joint actions (eg. monitoring, surveillance). However, in order to encourage sustainability, the Project approach will consistently limit its contribution to cover the recurrent operational costs, with the expectation that the participating stakeholders gradually internalize these costs.

3. Environmental and social

5.7 Overall, the operation will have a positive environmental impact associated with measurable results in terms of: (i) increased binational capacities for integrated and participatory water basin management, including water pollution and land degradation control and biodiversity conservation and sustainable use; (ii) mainstreaming ecological considerations in the development of the Basin; (iii) an increase in economic activities involving sustainable practices and technologies; and (iv) protection of globally significant terrestrial and aquatic ecosystems. Positive social impact is expected in terms of enhanced participation of stakeholders not traditionally included in decision-making processes pertaining to the development of the Basin, in particular the indigenous groups⁶², women and civil society. Local residents will also benefit from improved environmental conditions and enhanced opportunities for sustainable livelihoods. The project will not result in significant or foreseeable adverse environmental or social impacts due to the nature, scale and location of the activities to be financed by the GEF grant and the co-financing. Nevertheless, its Project Operating Manual will include environmental and social sustainability selection criteria for the pilot projects⁶³, as well as

⁵⁸ For example the GEF/WB funded Ecomarkets Project (2000–2006) and the fund-raising effort for the Osa Peninsula.

⁵⁹ For example, efforts being made by the indigenous groups to develop mechanisms for payment for environmental services.

⁶⁰ For example proposed GEF/WB project on mainstreaming market-based instruments for environmental management.

⁶¹ For example, the Bocas del Toro Program is financing a study on payment for environmental services in the Basin.

⁶² The operational policy on indigenous communities (GN-2386-8) has been considered during the design of the Project.

⁶³ Based on the manuals of the IDB-financed programs, ensuring the application of specific measures to limit beneficiaries of activities in indigenous territories to indigenous groups and guaranteeing that Project support for the breeding of flora and fauna be limited to native species.

appropriate environmental and social monitoring and supervision measures⁶⁴. Furthermore, all the technical studies financed by the Project will internalize environmental considerations.

C. Replicability

5.8 The Project will provide lessons learned and experiences that could be replicated as follows: (i) integrated management of transboundary protected areas and river basins⁶⁵, of particular interest at the *global* and *regional* levels; (ii) market-based instruments to promote sustainable production, sustainable financing schemes and co-management of protected areas involving indigenous communities and civil society, of particular interest at the *national* level; and (iii) sustainable livelihoods, ecosystem restoration and water source protection and management, of particular interest at the *local* level. The Project's replication strategy⁶⁶ will respond to the above intentions as follows: (i) establish working relationships with other transboundary protected area and river basin projects in the Region⁶⁷; participate in international and regional working groups and fora⁶⁸; maintain an updated website; and produce working papers, publications and periodic project newsletters to be disseminated in the Region; (ii) organize field visits and study tours for public and private decision and policy makers to the Basin; promote exchanges between co-management initiatives within and outside the Basin; proactively engage in dialogue with legislation and policy makers, public and private financial institutions and productive sector associations; and establish linkages with academic and research institutions⁶⁹; and (iii) facilitate horizontal learning exchanges within the Basin; establish linkages with training institutions; socialization in local and indigenous community events and formal meetings and ensure effective communication with other projects in the Basin.

D. Consultation with and participation of the stakeholders and beneficiaries

5.9 A wide array of stakeholders have been actively involved in the development of this proposal. This process started during the formulation of the RSDS in 2003-2004 and the design of the two corresponding IDB-funded programs. A comprehensive consultation process was performed involving approximately 50 workshops and meetings at the community, basin and national levels, to identify the main social actors, the most relevant production and service organizations, the most representative agencies, and their respective agendas and development priorities. This process was continued in 2005-2006 during the PDF-B phase under the guidance of an Advisory Group composed of the main

⁶⁴ The infrastructure investments to be funded by the IDB-financed programs will be governed by their respective Manuals, which include regulations regarding environmental impact assessment (EIA) and supervision.

⁶⁵ Including headwater protection.

⁶⁶ The funding for the majority of the activities mentioned in this paragraph have been internalized in the components. However, the budget for the Executing Unit includes resources for the implementation of the replication strategy.

⁶⁷ In particular Montecristo Trinational Protected Area, El Corazón Binational Protected Area, both GEF projects, as well as the transboundary Lempa (Guatemala, El Salvador, Honduras) and San Juan River (Nicaragua, Costa Rica) basins.

⁶⁸ In particular those promoted by GEF, CCAD, IUCN, CATHALAC, such as IW/LEARN, the IMDS/PPP, Global Transboundary Protected Areas Network of World Commission Protected Areas/IUCN, the GWP and IWRN-OAS.

⁶⁹ Including inviting researchers, students to work on topics related to the Project, encourage participation of stakeholders as trainers in their activities, involve them in the implementation of Project monitoring and dissemination of results.

stakeholder representatives⁷⁰, in order to agree on the specific activities to be included in the Project and the responsibilities and roles of the actors. As described in Section IV, the Project design includes measures at two levels to ensure strong stakeholder participation in Project execution. At the Basin level, the Binational Commission will provide an opportunity for public, private and civil society actors to agree on matter regarding the development of the Project. At the sub-basin levels, committees will enable local stakeholder participation in the definition and prioritization of problems, in the planning of activities and in the social monitoring of its execution.

E. Risks

- 5.10 The success of the Project in achieving its global objectives faces four main risks: (i) the Project execution arrangements, involving a multiplicity of actors in the two countries, are not put in place in a timely manner and do not function efficiently; (ii) the coordination with the co-financing programs does not materialize in a timely and systematic manner; (iii) the possibility that the stakeholders at different levels reduce their interest and commitment to stay involved in the management of the Basin due, among others, to a perception of limited benefits and opportunities for influencing decision-making processes, and changes in the priority given by the authorities towards the sustainable development of the Basin; and (iv) the harmonization of legal, policy and regulatory frameworks are not achieved because the required agreements are not reached among the pertinent parties and/or the decision making process is unexpectedly extensive. To mitigate these risks, the following actions will be taken: (i) the creation of the Binational Commission for the Basin and the Executing Unit, as well as approval of the Project Operating Regulations, will be conditions prior to Project approval, and the Bank will ensure close supervision during execution; (ii) effective coordination mechanisms with the co-financing programs will be put in place (including, among others, joint planning meetings, sharing of reports, promoting the harmonization of methods); (iii) adaptive management procedures will be put in place and applied throughout the lifetime of the Project, including, among others, effective feed-back mechanisms, continuous interaction with the beneficiaries, public disclosure of project performance and results, ensuring sufficient resources for stakeholder empowerment; and (iv) technical support will be provided for accompanying the referred harmonization processes.

⁷⁰ MEF, MIDEPLAN, ANAM, MINAE, other national- regional- and local authorities, Indigenous Governments and communities, productive sector associations, women's organizations, civil society, and representatives of other projects.