



**PROJECT DEVELOPMENT FACILITY  
REQUEST FOR PIPELINE ENTRY AND PDF-B APPROVAL**

**AGENCY'S PROJECT ID:** RS-X1006  
**GEFSEC PROJECT ID:**  
**COUNTRY:** Costa Rica and Panama  
**PROJECT TITLE:** Integrated Ecosystem Management of the Binational Sixaola River Basin  
**GEF AGENCY:** IDB  
**OTHER EXECUTING AGENCY(IES):**  
**DURATION:** 8 months  
**GEF FOCAL AREA:** Biodiversity  
**GEF OPERATIONAL PROGRAM:** OP12  
**GEF STRATEGIC PRIORITY:** BD-1, BD-2, IW-1, IW-3, EM-1  
**ESTIMATED STARTING DATE:** January 2005  
**ESTIMATED WP ENTRY DATE:** January 2006  
**PIPELINE ENTRY DATE:** November 2004

<b>FINANCING PLAN (US\$)</b>	
<b>GEF ALLOCATION</b>	
Project ( <i>estimated</i> )	3,000,000
Project Co-financing ( <i>estimated</i> )	8,500,000
PDF A*	
PDF B** ( <i>estimated</i> )	500,000
PDF C	
<i>Sub-Total GEF PDF</i>	500,000
<b>PDF CO-FINANCING (<i>estimated</i>)</b>	
IDB	400,000
National Contribution	60,000
Others	
<i>Sub-Total PDF Co-financing:</i>	960,000
<i>Total PDF Project Financing:</i>	960,000

\* Indicate approval date of PDF A  
 \*\* If supplemental, indicate amount and date of originally approved PDF

**RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT:**  
 Ricardo Ulate, GEF Operational Focal Point, 02/27/04  
 Ministry of Environment and Energy (MINAE),  
 Costa Rica  
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This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for approval.

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### A - SUMMARY

The bi-national Sixaola river basin has an area of 2,843.3 km<sup>2</sup>, 19% of which are in Panama and 81% in Costa Rica. From a geomorphological point of view, the basin has been divided into three areas: a larger (2,038.0 km<sup>2</sup>) sparsely populated (0.42 inhabitants/km<sup>2</sup>) upper watershed; a middle basin (512.4 km<sup>2</sup>, 16.36 inhabitants/km<sup>2</sup>) and a smaller but more developed and populated lower basin (336.8 km<sup>2</sup>, 72.49 inhabitants/km<sup>2</sup>). The total population of the river basin is approximately 33,650. In the upper and middle basin, the indigenous Bri Bri, Cabécar and Teribe represent more than 95% of the population, whilst in the lower basin only 28% of the population is indigenous.

More than 80% of the Sixaola bi-national river basin is either a natural protected area or an indigenous reserve, and about 75% of the basin surface is covered by natural vegetation (primary and secondary forests, humid and very humid tropical forests with basal transitions existing throughout the whole basin). The areas up to 400 meters above sea level (masl), however, have been degraded mostly due to development and agricultural activity. Above 400 masl and especially above 600 masl the tropical rainforest is more intact. The richest biodiversity occurs in the coastal area and in the upper watershed.

A significant effort has been made to protect these natural resources and biodiversity through six Natural Protected Areas (three of which have global importance), two Biological Corridors that are part of the Meso-American Biological Corridor, and six indigenous territories established in both countries. The biological corridors intersect at the mouth of the Sixaola River, linking two important wetlands. The Bri Bri de Keköldi indigenous reserve is an important biological link between the mountain and litoral ecosystems. All the natural protected areas, especially the PILA, and indigenous reserves have a high level of biodiversity and an important degree of endemism, hosting various endangered species.

This system, however, faces several threats originating mainly from the lack of bi-national coordination in establishing the management plans for the bi-national areas, lack of operability of such plans, non-point source pollution from agricultural activities in both countries, and lack of coordination in the environmental protection plans of both national environmental authorities. Frequent floods in the bi-national reach of the river also cause property damage and put in jeopardy the population of the middle and lower basins in the adjacent areas of both countries.

As part of a Framework Agreement for the development of the Costa Rica-Panama border, ratified by both countries' legislative assemblies, a permanent Bi-national Commission was created and an agreement was reached to go forward with an all-embracing Bi-National Basin Sustainable Management Program that materialized in

2003-2004 with the formulation of the *Regional Strategy for the Sustainable Development of the Bi-National Sixaola River Basin* (RSDS), financed by an IDB grant.

The RSDS is conceived as a long-term integrated strategy, which envisions interventions along four strategic lines (Environmental Management, Sustainable Management of Natural Resources and Reduction of Vulnerabilities; Productive Activities and Diversification; Public Services and Basic Infrastructure; and Institutional Strengthening), to be implemented in a decentralized manner and with strong civil society participation.

The RSDS calls for the use of funds from two separate loans, one for each country, already approved by IDB: Loan 1439/OC-PN “Sustainable Development of the Bocas del Toro Province” in Panama for US\$15,200,000; and Loan 1556/OC-CR “Sustainable Development Program of the Bi-national Sixaola River Basin” in Costa Rica for US\$11,000,000. The RSDS also calls for joint bi-national activities, many of which are aimed at addressing threats to the integrity of the basin and its biodiversity but which cannot be financed by either loan.

The project put forward for consideration of the GEF: “*Integrated Ecosystem Management of the Binational Sixaola River Basin*” covers these binational activities, and complements the Environmental Management, Sustainable Management of Natural Resources, and Reduction of Vulnerabilities strategic lines of action and activities under execution in both countries financed by the IDB loans.

The overall **objectives** of this GEF project are to protect biodiversity of linked upstream and downstream ecosystems of global significance, including RAMSAR sites, and to promote binational collaboration for the management and protection of the water resources in the Sixaola river basin between Costa Rica and Panama. Specific objectives are:

- a) Creation of an enabling environment through economic valuation of the function and services of the major bi-national ecosystems of the basin, and harmonization of Costa Rica-Panama environmental management plans of the international La Amistad reserve (PILA) and in the adjacent lower basin neighboring areas of the Gandoca-Manzanillo and San San Pond Sak wildlife reserve and wetland.
- b) Strengthening of the bi-national institutional framework for the application of integrated ecosystem and water quality management in bi-national areas.
- c) Reduction of existing threats to the ecosystems of bi-national protected areas of global interest, caused from upstream and surrounding productive activities, through, for example, bi-national water quality monitoring, integrated water resources management, innovative riverbank restoration, development of sustainable livelihoods and land management practices in the buffer zones of the protected areas, and mechanisms for the payment of environmental services.

## **B - COUNTRY OWNERSHIP**

### **1. COUNTRY ELIGIBILITY**

Costa Rica signed the Convention on Biological Diversity (CBD) on 13-Jun-1992 and ratified it on 26-Aug-1994. Panama signed CBD on 13-Jun-1992 and ratified it on 17-Jan-1995. The United Nations Framework Convention on Climate Change (UNFCCC) was also signed and ratified by both countries. Costa Rica ratified it on 26-Aug-1994 and Panama on 23-May-1995.

### **2. COUNTRY DRIVENNESS**

The present proposal to GEF is *complementary and consistent* with both countries' national priorities, which have been expressed in a Border Cooperation Agreement ratified in 1994 and 1995 by the legislative branch of both countries. This interest led to a bi-national participatory process which drafted a common strategy for the sustainable development of the Sixaola river basin and a subsequent financing plan, which is the origin of this proposal. As a result of the Costa Rica-Panama Border Cooperation Agreement, a Permanent Bi-national Commission was created to oversee all activities in the area and an Executive Secretariat was created in each country, dependent from the Planning and Economic Policy Ministry (MIDEPLAN) in Costa Rica and from the Ministry of Economics and Finance (MEF) in Panama. These Executive Secretariats coordinate the action of all other national ministries in each country. For the integration of the Sustainable Development Strategy and Program for the Sixaola Bi-national River Basin, including this proposal to GEF, a Technical Bi-national Commission was formed and supported through an IDB non-reimbursable technical cooperation. These coordination mechanisms, however, need to be further strengthened.

This Project has been framed within the Regional Sustainable Development Strategy for the Bi-national Sixaola River Basin (RSDS). The purpose of this Strategy is to promote economic and social development of the region, improving the well-being and livelihoods of the population, and safeguarding the ecosystems and biodiversity unique to the region. A series of interventions are proposed by the RSDS that will: reduce the dependency on one single product (bananas) and one single producer, reduce the vulnerability of the population and the local economy to natural disasters, and conserve and protect the ecosystems and biodiversity. To achieve the first objective, the RSDS promotes the diversification of production and fostering new income generation opportunities. To reduce vulnerabilities the RSDS seeks to reduce the effects of flooding via a comprehensive and coherent plan of actions. These are aimed to involve the communities of both neighboring countries in a wide spectrum of interrelated prevention, mitigation, ecosystem protection and better management of natural resources activities.

The project is consistent with different national and regional plans and programs, all of which have been taken into account in the preparation of this proposal. The National

Biodiversity Strategy of Costa Rica, for example, identifies the “*La Amistad-Caribbean*” area as one of the priority geographic regions in terms of biodiversity conservation, recommending actions related to: (a) capacity building and institutional strengthening, (b) biodiversity knowledge enhancement, (c) promoting participation of the general public in conservation efforts, (d) biodiversity conservation both inside and outside of protected areas, and (e) monitoring biodiversity trends. Costa Rica has also demonstrated a commitment and willingness to develop mechanisms for the payment of environmental services (eg. through the Ecomarkets project funded by the GEF).

The National Biodiversity Strategy of Panama, on its part, makes specific reference to the biodiversity threats in the mountainous forest ecosystems of the Talamanca (Chiriquí and Bocas del Toro), as well as the wetlands and coastal and marine ecosystems in Bocas del Toro. The National Environmental Authority of Panama (ANAM) is currently in the process of developing a strategy for payments for environmental services.

The proposed GEF project is also an integral element of the Mesoamerican Sustainable Development Initiative (IMDS) of the Plan Puebla Panamá (PPP), of which both countries are parties. The IMDS strives to promote sustainable development interventions in transboundary areas as a means to promote regional integration.

## **C – PROGRAM AND POLICY CONFORMITY**

### **1. PROGRAM DESIGNATION AND CONFORMITY**

This project is fully consistent with the provisions of the Operational Program 12 (Multiple Focal Area: Integrated Ecosystem Management). As such it will: (a) foster an integrated ecosystem management approach, involving a variety of habitats in the Sixaola binational watershed and promoting collaborative actions between the two countries (Costa Rica and Panama) both for biodiversity conservation and water resources management; (b) promote the integration of economic and social factors in ecosystem management, through linkages with the national environmental, economic and social goals and supporting actions being financed individually through respective IDB loans in both countries; and (c) provide for flexible management mechanisms that can adapt to changing situations and promote the incorporation of lessons learned through pilot projects.

### **2. PROJECT DESIGN**

***Socio-economic context.*** The bi-national Sixaola River basin is located on the Caribbean slopes of the Central American Isthmus and is shared between the neighboring countries of Panama and Costa Rica. The geographic location coordinates are 9° 15′ and 9° 40′ North and 82° 50′ and 83° 30′ West. The surface of the bi-national basin is 284,830 hectares of which 231,680 hectares are located in Costa Rica (81%) and 53,150 in Panama (19%). The population living in the bi-national Sixaola River basin is approximately 33,650, of which 59% is in Costa Rica and 41% in Panama.

The administrative territories within the basin (Bratsi and Sixaola districts of the Municipality of Talamanca and part of the Cahuita district in Costa Rica, and the Changuinola district in the Bocas de Toro province in Panama) are the poorest in the country (Talamanca), or among the poorest (Bocas de Toro). The Social Development Index (SDI) of the Bratsi and Sixaola Districts in Talamanca are 0.9 and 27 respectively, as compared to that of the Limon Province, which is 33.1. In Panama, the Human Development Index (HDI) in the Changuinola District is 0,608 against a national average of 0.707<sup>1</sup>.

For analysis purposes, taking into account both the geomorphology characteristics of the basin and the existing physical and socio-economic links with other neighboring zones, the area has been divided into three sub-zones with strong interrelations:

- a) The *upper watershed*. With an extension of 2.038 km<sup>2</sup>, it includes the most elevated zone of the Sixaola River basin, from 700 masl, up to 3.820 masl on the Chirripó Grande Mountain, the highest peak in Costa Rica. This area is scarcely populated by disperse indigenous communities, practically isolated from the rest of the country due to the lack of roads and which, from the socio-economic standpoint presents the worst indicators (in terms of health, infant mortality, life expectancy at birth, education, etc.). The total population in this region is approximately 850 people, mostly Indians of the Bri Bri (30%) and Cabécar (70%) ethnic groups, all living in Costa Rican territory. Therefore, the population density is very low (0.42 inhabitants/km<sup>2</sup>). The main productive activity is subsistence agriculture, centered almost exclusively on the production of maize and beans, although some farms report production of cacao and bananas. Cattle rising, hunting and fishing are also carried out. From the physical point of view, this is an area characterized by the dominance of primary rainforest. Most of the territory is also part of a large bi-national protected area La Amistad International Park (PILA).
- b) The *middle basin*. It extends from 60 masl up to 700 masl, over 512.4 km<sup>2</sup>, distributed between the two countries. It has a population of approximately 8,400 inhabitants (87% in Costa Rica and 13% in Panama), largely indigenous people (95%), who belong to the Bri Bri and Cábecar ethnic groups in Costa Rica, and Bri Bri and Naso Teribe ethnic groups in Panama. The population density is 16,36 inhabitants/ km<sup>2</sup>. The area consists mainly of Indigenous Territories. In Costa Rica, the Indigenous Territories have legal status (Indigenous Law and Executive Decrees), under which the use of this land (main means of support of the population) will be abided by what is written in that legislation. In the Panamanian side of the basin no autonomous indigenous territories are recognized. In both cases, the use of the land has a communal nature and private land ownership is completely non-existent. The main crops produced in these areas are linked to agro-ecological production, basically banana and cacao, which have progressively been displacing annual crops. Due to demographic pressures,

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<sup>1</sup> These indices are built from more than 6 social indicators.

the rate of deforestation in this area is high (during the 1997-2000 period it reached 16% in the three indigenous territories of Talamanca). There is also overexploitation of fisheries resources and of animals used primarily for subsistence. From the physical point of view, this is a transition zone with predominance, in the rain forest, of species such as bay and bitter cedar trees. Some of the forest area has been substituted by crops, mainly cacao, plantain, and banana. The use of agrochemicals in this area has been increasing.

- c) The *lower basin*. This area extends from sea level up to 60 masl with an extension of 336,8 km<sup>2</sup>. The majority of the basin population is concentrated in this area (approximately 24,400 inhabitants: 47% in Costa Rica and 53% in Panama). The population density is substantially higher, 72.49 inhabitants/ km<sup>2</sup> and the population growth rates are extremely high: 11.5% per annum between 1984 and 2000 on the Costa Rican side, primarily due to the resettling of the banana company. Only 28% of the population is indigenous and another 6% is of Afro-Caribbean descent. The region is located in the strategic Limón-Almirante axis, and accommodates one of the existing border crossings between the two countries: the bridge that communicates the municipalities of Sixaola and Guabito.

One unique characteristic of this area is that its economy revolves around the production of bananas controlled, directly or indirectly, by multinational companies. This highly marked dependence on one product and one large producer, generating most of the employment, most of the income to the municipality, and having developed most of the infrastructure, creates a highly vulnerable social system. From the physical point of view the area is characterized by the presence of large human settlements (urban nucleus at Sixaola and Guabito) and large areas dedicated to the production of bananas. The area is characterized by constant flooding that causes significant losses in terms of agricultural productivity and physical infrastructure. Two distinct areas can be distinguished in the coast. The first one is the Puerto Viejo Manzanillo corridor in Costa Rica and the second one is Changuinola in Panama, both of these with their associated *hinterlands*.

***Ecological and biodiversity values.*** In the Sixaola basin, there are six natural protected areas and six indigenous territories, some of which overlap. *At least three of the natural protected areas have global importance: the La Amistad International Park (PILA), is a bi-national park created in 1988 by both Costa Rica and Panama and in 1990 was declared a Biosphere Reserve and Human Heritage Site. Two others, the Gandoca-Manzanillo Wildlife Reserve and the San San Pond Sak Wetland are included in the Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR).*

There are also two biological corridors that are part of the Mesoamerican Biological Corridor (MBC)<sup>2</sup>: the Talamanca-Caribbean Biological Corridor in Costa Rica with an extension of 48,400 hectares (36,581 of which are continental and 11,819 marine); and the Atlantic Biological Corridor in Panama with 52,731 hectares. Both corridors provide an interconnection between the forested mountainous sector of the Talamanca (Costa Rica) and Central (Panama) ranges and the Caribbean Sea, thus allowing for the interconnection of forested areas in low, middle and high mountains with the alluvial plains of the Sixaola river and the coastal-seashore-surface waters and adjacent Caribbean marine ecosystems, allowing for the genetic exchange, colonization processes and migration of flora and fauna species.

*It is important to note that the two corridors interconnect at the mouth of the Sixaola River in the Caribbean Sea, with the riverine system thus providing a vital link between two of the natural protected areas of global importance: the Gandoca-Manzanillo Wildlife Refuge and the San San Pond Sak Wetland.*

<b>TABLE 1. EXTENSION WITHIN THE SIXAOLA RIVER BASIN OF NATURAL PROTECTED AREAS AND INDIGENOUS TERRITORIES</b>	
<b>NATURAL PROTECTED AREAS</b>	<b>Extension (ha)</b>
Chirripó National Park	12,448.37
La Amistad International Park	138,481.26
Hitoy Cerere Biological Reserve	1,267.71
Palo Seco Protection Forest	762.84
Gandoca-Manzanillo Wildlife Refuge	2,387.68
San San Pond Sak Wetland	500.53
<b>TOTAL</b>	<b>155,848.39</b>
<b>INDIGENOUS TERRITORIES</b>	<b>Extension (ha)</b>
Brí Brí de Keköldi Indigenous Reserve	1,157.57
Brí Brí de Salamanca Indigenous Reserve	45,355.72
Brí Brí Indigenous Reserve (Panamanian Side)	25,755.80
Cábecar de Salamanca Indigenous Reserve	22,947.61
Cábecar de Telire Indigenous Reserve	17,237.73
Naso Indigenous Reserve	335.12
<b>TOTAL</b>	<b>112,789.55</b>
Source: EPYPSA-INCLAM, IDB Technical Cooperation ATN/SI 8060-RS.	

Almost all of the protected areas are located in the center-western sector of the basin, with two in the lower-eastern zone, bordering the Caribbean Sea (Gandoca-Manzanillo Wildlife Refuge in Costa Rica and San San Pond Sak Wetland in Panama). One is in the northern limit (Bríbrí Keköldi Indigenous Reserve) and one in the southern limit (Naso Indigenous Reserve) of the eastern zone. In some instances, the indigenous territories

<sup>2</sup> The MBC is an initiative of cooperation of the seven Central American countries and the Southern Mexican States for the conservation of biological diversity in their territories.

(Cábecar, Brí Brí y Naso) and natural protected areas (PILA and Palo Seco Protected Forest) have common areas.

<b>Table 2. NATURAL PROTECTED AREAS AND INDIGENOUS TERRITORIES THAT BELONG IN THE BIOLOGICAL CORRIDORS</b>
<b>TALAMANCA-CARIBE BIOLOGICAL CORRIDOR (COSTA RICA)</b>
Gandoca-Manzanillo Wetland Refuge
Brí Brí de Keköldi Indigenous Reserve
Brí Brí de Talamanca Indigenous Reserve
Cábecar de Talamanca Indigenous Reserve
<b>ATLÁNTICO PANAMEÑO BIOLOGICAL CORRIDOR (BOCAS DEL TORO)</b>
La Amistad International Park (PILA)
Palo Seco Protective Forest
San San Pond Sak Wetland
Brí Brí Indigenous Reserve (Panamanian sector)
Naso Indigenous Reserve

Some of the characteristics of these areas are summarized in the following paragraphs:

The *Chirripó National Park* in the Talamanca Sierra has 100% natural vegetation cover. The Talamanca Sierra, where the Park is located, is one of the five endemism regions of Costa Rica and hosts 3 endemic salamander and one endemic small lizard species. This park hosts some 250 plant species, and of the 134 fern species reported, at least 30 (22%) are endemic.

Seventy one percent of the *La Amistad International Park (PILA)* is within the Sixaola bi-national river basin, 83% of which is in Costa Rica, with 100% natural vegetation cover. The different altitude, climate and humidity levels of the Park provides the conditions for diverse ecosystems ranging from the most simple and fragile at higher altitudes, to the most complex and diverse in the middle altitudes. This includes the “*Páramo*” and “*Ciénaga Fría*” ecosystem, which is a very fragile, rare and unique ecosystem, with some 20 vegetation communities. It is believed that this territory hosts 2/3 of the vertebrates reported for Costa Rica and about 10,000 species of superior plants (90% of those existing in Costa Rica). Depending on the plant group, the endemism level reaches 30% to 40%. It also hosts more than 4,000 species of lower and non-vascular species, 80% of moss species, most of the 900 known species of lichens, 1,000 species of ferns (of the 1,300 identified for Costa Rica), and 1,000 species of orchids (out of 1,500 reported for Costa Rica). Of the 830 species of birds existing in Costa Rica, at least 275 are endemic to the PILA.

Likewise, 100% of the *Hito Cerere* biological reserve is covered by natural vegetation. Deciduous evergreen forest dominates and biodiversity is reported to be high. The Reserve contains 15 species that are endemic to Costa Rica and 33 species which are endemic to both Costa Rica and Panama. Furthermore, the Reserve represents the northern and southern distribution limits for 34 and 11 species respectively. .

The *Gandoca-Manzanillo Wildlife Refuge*, includes some of the most important coastal ecosystems in the region, such as: 200 ha of sea grass beds; 250 ha of mangroves; 1,050 ha of flooded forest and small palm trees; 800 ha of herbaceous marshes and approximately 600 ha of cativera. Most of the herbaceous marshes are formed by weed species such as *Mimosa Pigra*, *Darbergia brownei* and floating vegetation. The surrounding mountain ranges host a high diversity of endemic species, many of which are endangered species. There are five species of hard corals and several species of plants and animals that have not been found in other parts of the Caribbean coast of Costa Rica and Central America (11 species of sponges, 37 of algae, one coral species that is unique in Central America, and 34 species of mollusks). The beaches in the area serve as nesting grounds for several endangered sea turtle species (*Dermochelys coriacea*, *Caretta caretta*, *Eretmochelys imbricata* and *Chelonia midas*). Several endangered land species are also present, such as the crocodile (*Crocodylus acutus*), alligator (*Caiman crocodilus*), and puma (*Felis concolor*). This wildlife reserve is very important to the north-south migration of birds and it is highly dependent upon the hydrological regime of the Sixaola river and its water and sediment inflow.

Indigenous reserves such as the *Talamanca Bri Bri*, *Talamanca Cábecar*, *Telire Cábecar* and *Keköldi Bri Bri Indigenous Reserves* have natural cover ranging from 80% to 30% of their territory. All share the characteristics of the mountainous natural reserves previously mentioned, especially the PILA. The last one presents a clear biological connection that facilitates the movements of the local fauna from the mountains to the coastal zone and viceversa and its flora and fauna is diverse.

The vegetation of the RAMSAR site of *San San Pond Sak Wetland* includes flooded forests, shrubs and grass communities that are not very common in Panama. It also has a peat marsh and several endangered plant and animal species, some of them found only in Panama (such as the plant species *Thelypteris cumingiana* and *Tectaria rivalis*). There are also some bi-national endemic species for Panama and Costa Rica, such as the freshwater palm *Raphia taedigera* and the *Encyclia alata* orchid. Several species of endangered mammal species are also present, including the manatee (*Trichechus manatus*), the tapir (*Tapirus bairdii*), jaguar (*Panthera onca*) and puma (*Puma concolor*). Some 160 species of birds have been observed, of which 120 are local, 32 are migrant and 9 are both local and migrant. It is a zone of rich biodiversity where many terrestrial, fish, insect, mollusk and crustacean species can be found, some of them in the endangered species list.

The *Palo Seco Protective Forest* is one of the more diverse and extensive protected areas of Panama, covering 244,000 ha of which 762.84 ha fall within the bi-national Sixaola river basin. This zone is rich in tropical rainforests and biodiversity, with many species of rare ferns (such as *Tectaria nicotianifolia* and *Trichomanes pinnatum*) and 16 plants in the CITES list, mainly orchids (*Maxillaria*, *Scaphyglottis*, *Malaxis*, *Lockartia* y *Epidendrum*). Rodents represent the most diverse group of terrestrial mammals with 5 families, 7 genus and 7 species. There are also several bi-national endemic species for Costa Rica and Panama, such as the *Chlorostilbon assimilis* humming bird and seven

fauna species protected by the Panamanian law. The area is also rich in reptile and amphibious species, some of them endangered.

***Problem statement.*** The analysis of the main problems pertaining to the bi-national river basin can be organized according to the sub-zones previously described and the main environmental threats are as follows:

- a) *Upper watershed.* Illegal logging occurring in the protected areas threatens the rain forest's biodiversity. The extreme poverty of the indigenous population living in this area and its subsistence practices are causing a reduction of the biodiversity resources. The loss of forest and vegetation may increase the instability of a geomorphological phenomenon known as "Mass Movement" which is located between the Sacabico and Dagabri Rivers. This formation is 17 km long and 2.5 km wide. It is very unstable and the loss of vegetation is causing erosion and excessive transportation of sediments to the Telire and Sixaola Rivers, increasing the river bed elevation in the lower reaches and thus, the risk of flooding.
- b) *Middle watershed.* This is considered a vulnerable transition zone, where the indigenous communities and small producers are progressively substituting the primary forest for subsistence agriculture. The expansion of the agricultural frontier is impacting the existing ecosystems. Deforestation is increasing erosion rates and sedimentation, which also affects the frequency and severity of floods. The expansion of the agricultural frontier is causing an increase in the use of agrochemicals. This increases non-point source water pollution whose effects are felt not only in the middle basin, but also in the environmentally fragile natural downstream reserves of Gandoca-Manzanillo and San San Pond Sak. On the other hand, the lack of adequate domestic and municipal wastewater conveyance and treatment systems increases point source pollution, with its subsequent health impacts. Fishing methods are destructive (dynamite, chemical products) and there is also illegal hunting in natural protected areas as well as capture of protected animal species, to be sold as pets.
- c) *Lower watershed.* This area is characterized by a high level of human intervention, concentrated along the Sixaola River, between Uatsi and Sixaola-Guabito, where the largest human settlements of Bribri, Sixaola and Guabito are. The Sixaola floodplain has plantain and banana plantations and a wide network of main and rural roads. The main active vectors of environmental and water degradation are those that originate from the intensive use of agrochemicals in the upstream reaches of the river as well as in the banana plantations in the lower basin, which is polluting the river and contributing streams and impacting the health of the local population. The intense application of pesticides and fertilizers is impacting the coral reefs in Gandoca-Manzanillo and the wetlands in San San Pond Sak. The disposal of untreated sewage and solid waste from the urbanized centers in the coastal zone in both countries also has a negative effect on these ecosystems. The excessive use of agrochemicals is also affecting the quality of the coastal aquifer. This aquifer is used as a domestic water supply source by a

large proportion of the population of Bocas del Toro in Panama. The deforestation of the river banks (mainly along the bi-national Sixaola River) caused by farming and human settlements, increases the vulnerability of the area to natural hazards. Short-root crops such as banana and plantain are not capable of stabilizing the river margins, therefore increasing their erosion and the instability of the river banks. Development of the tourism industry continues in the coastal zone, with its subsequent pressure for infrastructure and basic services.

The protected areas throughout the watershed, especially those of global significance (PILA, San San Pond Sak and Gandoca-Manzanillo), are threatened and have the following shortcomings: inoperative management plans in some areas, such as the San San Pond Sak Wetland and the PILA section of Panama; a lack of coordination when drafting the management plans for shared natural areas (PILA) or adjacent areas at the border (San San Pond Sak and Gandoca-Manzanillo); and lack of information and studies about the effect of non point source agricultural pollution. Coordination between the environmental authorities of Panama and Costa Rica is also weak in terms of joint efforts to guard and protect the shared natural areas such as PILA.

***Sustainable baseline scenario.*** To face the above mentioned problems, both governments seek to accomplish an integrated management of the natural resources and biodiversity of the basin, taking the Sustainable Development Strategy and an Indicative Functional Land Use Plan developed with non-reimbursable IDB Spanish trust funds as a starting point. This sustainable baseline scenario is being financed through the Bocas del Toro loan in Panama (1439/OC-PN) approved in December 2002 and the Sixaola loan in Costa Rica (1556/OC-CR) approved in July 2004. The Bocas del Toro Program includes institutional strengthening at the local, provincial and national level, as well as natural resources management and natural risk mitigation and prevention. A strong component on productive diversification, including forestry and agriculture, artisanal fisheries development and sustainable tourism is also included, as well as small demand-driven water and sanitation, transportation and energy infrastructure projects. Likewise, the Sixaola loan for Costa Rica includes funding for environmental management, natural risk vulnerability reduction, productive diversification and small demand-driven water supply and sanitation, energy and transportation projects.

These actions are focused at the national and local levels in Costa Rica and Panama respectively. The effectiveness of the governments' individual response is reduced because of the lack of resources to finance joint bi-national actions that are fundamental to preserve the biodiversity and the quality of the shared water resources, as well as the strengthening of the bi-national institutions (Bi-national Commission). A complementary GEF operation was therefore conceived during the design of the two loans, as a means to attend the priority actions required to strengthen binational collaboration for integrated ecosystem management. Key issues of binational concern that remain under the sustainable baseline scenario include: (a) unharmonized management plans and the lack of collaborative actions between the two countries for the management of binational protected areas (eg. PILA and Gandoca-Manzanillo), (b) lack of economic valuation of the functions and services of the important binational ecosystems, (c) inexistence of a bi-

national program for water quality diagnosis, monitoring and control, and (d) lack of a coordinated and comprehensive riverbank restoration and stabilization program for the Sixaola River.

***GEF Alternative scenario.*** The GEF project will build upon the substantial baseline of actions at the national level in both countries, as previously described. The rationale of the present GEF project within the general framework of the RSDS responds to the need for bi-national ecosystem management to protect biodiversity of linked upstream and downstream ecosystems of global significance, including RAMSAR sites, and to enhance binational collaboration for the management of the water resources in the Sixaola river basin. It will contribute to the attainment of the objectives sought by the environmental management, natural resources management and reduction of the vulnerability strategic guidelines of the RSDS, given the bi-national nature of some of the more important needed actions and interventions. This is crucial for the attainment of the economic and social development of the region and improvement of the well-being and livelihood of the population and will also contribute to the accomplishment of the *global benefits* derived from the preservation of unique ecosystems existing in the region, such as the PILA and the Gandoca-Manzanillo and San San Pond Sak RAMSAR sites.

The GEF project will allow the implementation of some key strategic bi-national actions identified in the RSDS that will enable joint (both countries) ecosystem and biodiversity conservation activities which, by its bi-national nature, would hardly be adopted in the absence of this program. Examples of such actions include, among others: (a) harmonization of the management plans of bi-national protected areas and strengthening binational collaboration in protected area management, (b) joint planning for the restoration and stabilization of the Sixaola River riverbanks, and (c) bi-national water quality monitoring program.

Given the bi-national characteristic of the river basin, the need for conservation and protection of important bi-national ecosystems and biodiversity, and the need to jointly reduce the vulnerability at both margins of the Sixaola River, the GEF operation represents value added to what each country can do by itself with the IDB loans. The concept of incremental cost is reflected in two main aspects in the proposed project: (a) the complementary financing to ensure that the proposed activities under the Sixaola and Bocas del Toro investment programs have a positive bi-national environmental impact; and (b) the financing of specific bi-national environmental measures that provide joint benefits to both countries, in addition to those activities to be undertaken individually financed by the loans at the national level.

***Activities of the proposed GEF project.*** A US\$3,5 Million GEF Project (incl. US\$500,000 PDF Block B) is proposed to promote integrated ecosystem management in the Sixaola River Basin. The activities outlined below are complementary to other initiatives of the RSDS financed through IDB's 1468/OC-PN Sustainable Development of Bocas del Toro and 1556/OC-CR Sustainable Development of the Bi-national Sixaola River Basin loans, as well as other GEF activities and interventions by other donors in the

area. The proposed GEF project will cover the incremental cost of the bi-national environmental management actions in the Sixaola River Basin, including:

- a. **Harmonization of binational protected area management.** Technical assistance will be provided for the harmonization of the Costa Rican and Panamanian management plans of the international La Amistad reserve (PILA) and in the adjacent neighboring areas of the Gandoca-Manzanillo and San San Pond Sak wildlife reserve and wetland, including related policies, regulations and procedures (eg. enforcement, monitoring, management schemes). Strengthening of binational collaboration in these protected areas will be further enhanced through joint binational planning efforts, training activities, applied research, monitoring and selected pilot projects. This would provide experience in this type of bi-national activity to replicate it in other areas such as Hitoy Cerere and Barbilla biological reserves and the Talamanca/Caribe and Atlántico Panameño biological corridors.
- b. **Protected area buffer area management.** Pilot and demand-driven projects for the development of sustainable livelihoods, as well as the preparation of land-use plans, in the buffer zones of the binational protected areas will be supported (through the co-financing from the two IDB loans)
- c. **Valuation and payment for ecosystem services.** The application of economic instruments for environmental management will be promoted. A comprehensive study on the economic valuation of the functions and services of the major binational ecosystems of the basin will be carried out, as a basis for designing and implementing community-accepted and economically sound payment for environmental services mechanisms and pilot projects that can be replicated throughout the watershed and the region. These pilot projects would focus on key issues identified in the threat and root cause analysis financed by the PDF Block B. Possible areas of intervention, could include, among others: (a) wetland protection and restoration to provide habitats and to mitigate the effects of pollutants before they reach the ocean, (b) upstream forest protection and sustainable land management practices to reduce erosion that affect the quality of downstream water bodies and ecosystems etc.
- d. **Institutional strengthening.** The bi-national institutional framework, including the Bi-national Technical Commission, will be enhanced through training, capacity building and institutional strengthening for the application of integrated ecosystem and water quality management in bi-national areas, including its financial sustainability and the establishment of a binational monitoring program for the watershed and the coastal zone. This component will also include efforts to strengthen the collaboration and exchange with other transboundary water basins in the region (eg. San Juan River Basin).
- e. **Binational riverine ecosystem management.** Selected priority pilot actions of the binational action programme for riverine ecosystem management prepared with PDF Block B resources will be financed, including, for example: (a) bi-national

water quality monitoring and control pilot project to gain bi-national experience in this type of joint activity to be replicated in other common areas, (b) comprehensive bio-restoration of the stability of both river banks (in Costa Rica and Panama) in critical areas, (c) pilot projects and feasibility studies to address key sources of point and non-point sources of pollution in the river basin (eg. erosion, agrochemicals etc), as well as issues related to water use efficiency and the link between water and land use, and (d) binational harmonization of water pollution prevention policies, regulations and standards.

### 3. SUSTAINABILITY (INCL. FINANCIAL SUSTAINABILITY)

The project concept is based on the RSDS, which was formulated with broad stakeholder involvement, including national ministries, municipal and local authorities, community groups and other user groups. The strengthening of the Bi-national Commission and the participatory processes to be contemplated in the design (PDF Block B) and implementation of the GEF program will help ensure this sustainability. The financial sustainability of the binational institutional framework will be assessed and strengthened through the GEF project.

Furthermore, some of the national as well as bi-national activities related to biodiversity protection and natural resource management will include some productive activities that will allow the development of financially sustainable schemes. Thus, the bi-national GEF project and the two national IDB programs together, will strive to improve the livelihood and well-being of the population helping to ensure the sustainability of the project as well as the sustainable use and conservation of the biological diversity and the natural resource base. The valuation of ecosystem functions and services and the subsequent promotion of schemes for the payment of environmental services will also contribute to the long-term financial sustainability of environmental protection in the river basin.

This request is also supported by the Central American Commission for Environment and Development (CCAD), which promotes a multi-national focus in the context of the Mesoamerican Sustainable Development Initiative (IMDS) of the Plan Puebla Panamá. The activities proposed in the project all aim at enhancing the involvement of relevant stakeholders and user groups. The project will also enable the capacity building of local project management capacity.

### 4. REPLICABILITY

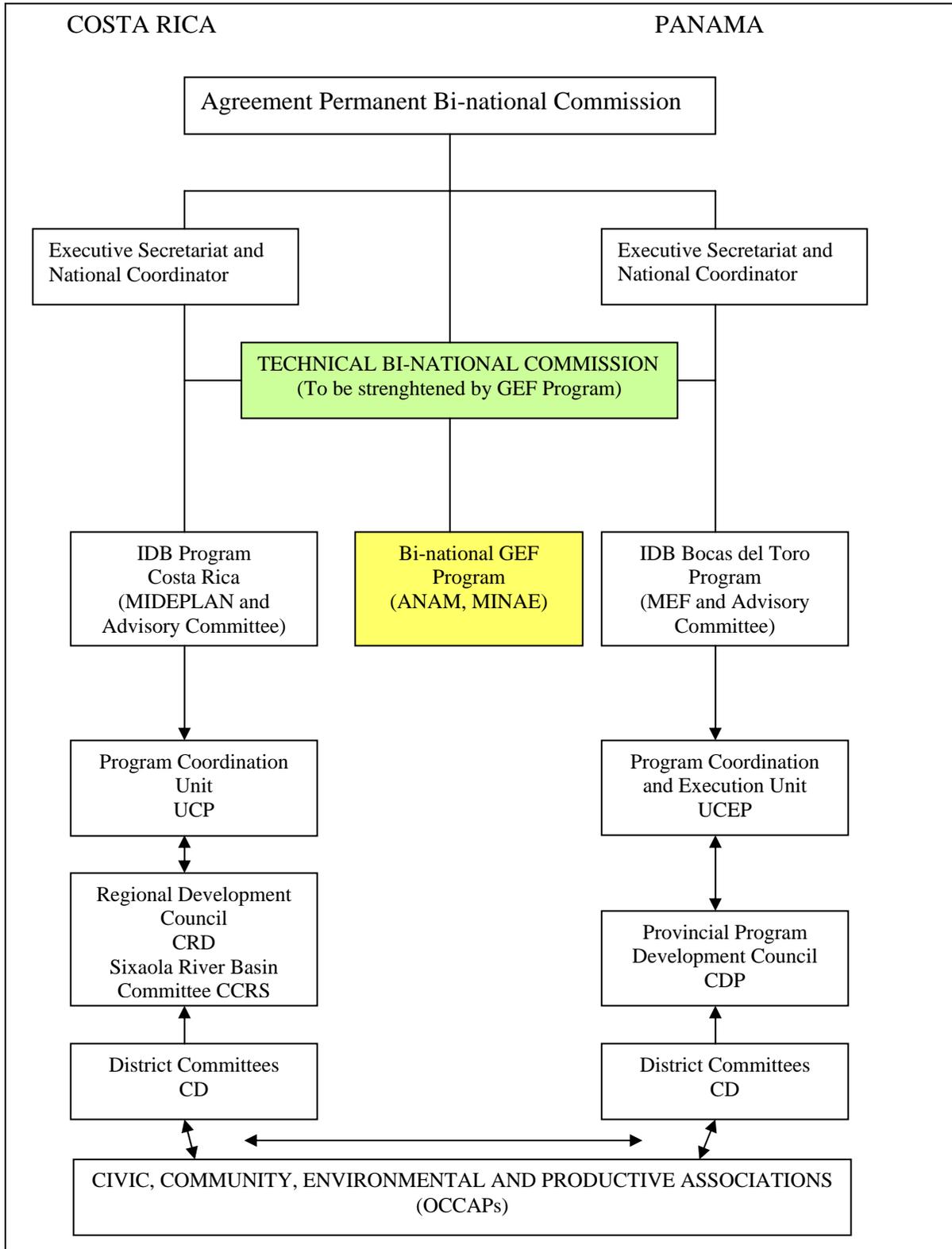
The project will finance pilot projects that, if successful, will then be replicated to the rest of the bi-national river basin sharing similar attributes. Replicability will thus be one of the selection criteria for pilot projects. These initiatives could also be replicated in other regions and other countries sharing similar characteristics. This is also true for the activities related to the strengthening of binational protected area management, as many areas in Central America share similar issues and problems.

## 5. STAKEHOLDER INVOLVEMENT/INTENDED BENEFICIARIES

The GEF project will be executed within the existing framework for bi-national cooperation established under the Costa Rica- Panama Border Cooperation Agreement. Under this framework, the RSDP was designed using a broad consultation process that was lead by the Executive Secretariats of the two countries and in which the members of the Technical Bi-national Commission and other stakeholders played a key role. The Technical bi-national commission includes, in Costa Rica, representatives of MIDEPLAN, MAG, MINAE, Ministry of Foreign Affairs, MOPT, MINSA, National Emergency Commission, the Talamanca Municipality, Water and Sewerage Institute (AyA), Costa Rican Electricity Institute (ICE), Costa Rican Institute of Tourism (ICT). In Panama, it includes MEF, MIDA, ANAM, IPAT, SINAPROC, MOP and MINSA, among others. This model, which covers the local, regional and national levels has been strengthened by the IDB loans, thus creating a consultation network that will benefit the GEF Program, as shown in Figure 1.

For the GEF project, it is expected that the Technical Bi-national commission will play a key role and will thus be strengthened in order to coordinate efforts related to the integrated ecosystem management in the Sixaola basin and the execution of the GEF project. During the execution of the project, it is proposed a space will be created that will allow for the participation of technical experts from universities of both countries. These experts will advise about the scientific soundness and relevance of the activities proposed for the basin.

**FIGURE 1. SIXAOLA RIVER BASIN PARTICIPATIVE ORGANIZATIONAL SCHEME**



## **D – Financing**

### **1) FINANCING PLAN**

The estimated total cost of the project is US\$12,460,000. The total GEF contribution is estimated at US\$3,500,000, including the PDF-B Block B of US\$500,000 (the precise budget for the GEF Full Sized Project will be defined during the PDF-B phase).

### **2) CO-FINANCING**

The Government of Panama is executing a project for US\$16,900,000 for the Sustainable Development of Bocas del Toro in Panama, which is financed by an IDB loan of US\$15,200,000 and a local counterpart contribution of US\$1,700,000. From this project, an estimated US\$6,000,000 (both IDB and counterpart funding) corresponding to activities related to natural resources management, development of sustainable livelihoods and strengthening of local capacities is counted as co-financing for the GEF project. In addition, the IDB is also funding technical assistance activities in the Sixaola watershed for US\$400,000 with an additional US\$60,000 in counterpart funding, which are considered as co-financing for the PDF-B. In addition, the Bank has recently approved the loan for a Sustainable Development of the Bi-national Sixaola River Basin in Costa Rica for US\$12,220,000, of which US\$11,000,000 is financed by an IDB loan and US\$1,220,000 is counterpart funding, corresponding to activities related to natural resources management, development of sustainable livelihoods and strengthening of local capacities is considered as co-financing for the GEF project.

## **E – INSTITUTIONAL COORDINATION AND SUPPORT**

Execution arrangements for the IDB loans for Costa Rica and Panama have been agreed with the Governments (see Figure 1). In order to avoid creating additional parallel institutional arrangement, the GEF Project Team will strive to develop an execution arrangement for the GEF project taking into account the existing institutional mechanisms. Specifically, the GEF will strengthen the Technical Binational Commission, to ensure that it adequately can promote and coordinate binational efforts for integrated ecosystem management.

***Core commitments and Linkages.*** There are several country and regional programs, which are relevant for the Sixaola River Basin, all of which were taken into account for the preparation of this proposal. During the PDF Block B, additional efforts will be made to coordinate effectively with these initiatives. These include:

- (1) *Joint initiatives* within the framework of the Central American integration process (SICA; Meso-American Sustainable Development Initiative under the Puebla-Panama Plan);

- (2) *Nationwide Plans and Programs, as well as Sectoral plans* promoted by the Governments of Costa Rica and Panama. (Biodiversity Strategy, Poverty Reduction Strategy, Development and Sectoral Plans, etc.).
- (3) *Intervention strategies, proposed at regional levels, and specially:*
- *Sustainable Development Strategy for Bocas de Toro-Panama* (IDB-under execution)
  - *Sustainable Development Program for the Huetar Atlantic Watershed Region – Costa Rica-* (IDB; Formulation)
  - *Strengthening of Local Governments* (GTZ)
  - *Rural roads* (Kfw)
  - *Spain and The Netherlands Cooperation initiatives and USAID's Central America's Regional Environmental Project (PROARCA/Costas)*
- (4) *GEF Projects under execution, and particularly those including the territorial scope of the Sixaola Basin:*
- **Costa Rica**
    - *Conservation of Biodiversity in the Talamanca – Caribbean Biological Corridor (1999)*
    - *Conservation of Biodiversity in Cacao agro-forest systems (2001)*
    - *Ecomarkets – Payment for Environmental Services (1999)*, from which lessons will be taken in the design of schemes for the payment for environmental services.
    - *Gandoca-Manzanillo Wildlife Refuge Management Plan (GEF/IBRD)*
  - **Panama**
    - *Project of the Atlantic Mesoamerican Biological Corridor (GEF/IBRD 1997)*
  - **Regional**
    - *Conservation of Biodiversity and integration of traditional information on medicinal plants within the primary national health systems (2001)*
    - *Integrated Ecosystem Management in Indigenous Communities (GEF/IDB-IBRD)*
    - *Reduction of pesticide run-off to the Caribbean Sea (2002)*. Particular coordination will be ensured during the preparation of the threat and root cause analysis.
    - *National adjustment plans on climatic changes.*

***Consultation, coordination and collaboration between IAs and ExAs.*** During the preparation (PDF Block B) and execution of the GEF Project, a coordination arrangement with other IAs will be established. In particular, coordination will be established with the *Integrated Ecosystem Management in Indigenous Communities (GEF/IDB-IBRD)*, the *Gandoca-Manzanillo Wildlife Refuge Management Plan (GEF/IBRD)*, and the *Project of the Atlantic Mesoamerican Biological Corridor (GEF/IBRD)* initiatives. Particular efforts will be made to ensure coordination with the pilot project to be financed through the Indigenous Ecosystem Management program. The Gandoca-Manzanillo Wildlife Refuge Management Plan (GEF/IBRD), will provide an important basis for the binational harmonization of management plans in the coastal area (adjacent areas of Gandoca-Manzanillo and San San Pond Sak) to be financed by the proposed GEF/IDB project.

**Implementation and execution arrangements.** It is envisioned that the Technical Binational Commission will have a role in the execution of the proposed program, but the detailed execution mechanisms will be designed during the PDF Block B phase (including administration responsibilities). The fact that two related IDB loans, one for each country, are to be executed simultaneously, guarantees a high quality technical and financial implementation. This will be done through highly qualified staff of IDB Costa Rica and Panama country offices. IDB headquarters staff will also carry out administration missions as required during project execution.

## PART II - PROJECT DEVELOPMENT PREPARATION

### A - DESCRIPTION OF PROPOSED PDF ACTIVITIES

A PDF-B of US\$500,000 would be used to define and prepare the above-mentioned FSP activities, studies and pilot projects. The execution of the bi-national pilot projects and other bi-national activities defined by the studies and pilot projects would later be financed by a GEF grant of US\$3.0 million, complementary to the actions to be financed individually by each country through loans 1468/OC-PN Sustainable Development of Bocas del Toro and 1556/OC-CR Sustainable Development of the Bi-national Sixaola River Basin.

The activities of the PDF-B are the following:

1. **Transboundary threat and root cause analysis.** The major threats to the biodiversity and environmental quality of the upstream and linked downstream ecosystems of global significance will be determined, and their causes of social, political and economic nature, with particular focus on transboundary issues. A baseline will be established for water quality, including identification and characterization of the principal point and non-point pollution sources (incl. for example, large-scale agroindustry, untreated sewage etc) along the bi-national reach of the river, affecting the integrity of the lower basin ecosystems, as well as a baseline on biodiversity and ecosystem health. This analysis will also analyze issues related to water use efficiency and the link between water and land use. An assessment will also be carried out to identify which ecosystems are being preserved and determine their importance in terms of global biodiversity conservation, as well as analyze the effectiveness of the current design of the protected area system in the area (considering aspects such as size, connectivity, fragmentation etc).
2. **Institutional strengthening.** An assessment will be carried out to identify the training, capacity building and strengthening needs of the Bi-National Commission for the management of the Sixaola River Basin System, in particular its technical committee to ensure that it meets its requirements in terms of promoting binational integrated ecosystem management. This will include, among others, the design of a sustainable financing mechanism for the long-term and continuous operation of the Bi-National Commission. This component will also finance the design of the

project execution framework (institutional framework, project operating regulations, monitoring and evaluation framework, etc.), ensuring long-term sustainability and strengthening of the existing institutional frameworks for binational cooperation. Overall experiences and lessons learned from other transboundary environmental projects will be analyzed for best practices and potential replication in this proposed project.

3. **Stakeholder participation and consultation.** Based on a stakeholder analysis, appropriate methodologies for bi-national local participation will be designed and established both for the preparation and implementation of the project, including stakeholder workshops and working groups on specific topics as required.
4. **Information management.** This component will design a binational environmental quality monitoring program to measure the performance on agreed environmental indicators (biodiversity, water quality) as well as a system to monitor and evaluate the GEF project (including process, stress reduction and environmental status indicators).
5. **Economic valuation of function and services of bi-national ecosystems.** The detailed terms of reference for the economic valuation study on the function and services of bi-national ecosystems would be prepared, as well as the conceptualization of pilot projects on payments for environmental services linked to critical environmental problems in the watershed (identified in the threat and root cause analysis).
6. **Harmonization of binational protected area management plans.** An indicative assessment would be carried out on the status of binational collaboration in the selected protected areas and draft the detailed terms of reference for the harmonization of binational protected area management plans and related enabling activities (eg. training, joint planning etc) to be implemented by the FSP. This activity would also analyze the existing land tenure in conservation areas and indigenous territories, as well as the strategies to achieve the collaboration of indigenous groups in the preservation of globally important biodiversity resources, with the view of promoting harmonized approaches between the two countries (this aspect of the work will be fully coordinated with the GEF/IBRD/IDB Indigenous Ecosystem Management Project).
7. **Protected Area Buffer Zone Management.** A framework for supporting pilot project aimed at developing sustainable productive activities in the buffer zones of the protected areas will be designed (in collaboration with the IDB loan programs).
8. **Riverine Ecosystem Management Action Programme.** Based on the transboundary threat and root cause analysis, a Bi-national Riverine Ecosystem Management Action Programme will be formulated. This Plan would include coordinated pilot actions on both sides of the Costa Rica-Panama border that contribute to solve critical transboundary issues related to the quality of the riverine

ecosystems in the river basin, such as: control of point and non-point sources of pollution; protection of margins, bank restoration, co-management of restored areas, slope stabilization in upland areas, harmonization of water pollution control policies, regulations and standards. The detailed terms of reference for these activities would be prepared, as well as the framework for the financing of pilot projects.

9. **Incremental cost analysis.** An incremental cost analysis will be carried out to determine the balance between the baseline scenario and the GEF alternative scenario.
10. **Design and formulation of the Full Sized GEF Project.** A consultant will be hired to assist in the preparation of the project document and related annexes for the FSP. For activities that may relate to climate change, opportunities will be explored, as appropriate, to draw resources from the CC FA, SP Adaptation.

The Inter-American Development Bank will execute the PDF Block B, with the technical and administrative responsibility in the Environment and Natural Resources Management Division Region II (RE2/EN2), in close collaboration with the Country Offices in Costa Rica and Panama.

## **B - PDF BLOCK B OUTPUTS (ANTICIPATED)**

- Transboundary threat and root cause analysis
- Institutional strengthening plan for integrated ecosystem management (Bi-national Technical Commission) and project execution
- Analysis of lessons learned from other transboundary environmental projects
- Sustainable financing mechanisms for the continuous operation of bi-national institutional arrangements
- Stakeholder analysis and participation methodologies and actions
- Environmental baseline established (both water quality and biodiversity)
- Bi-national Riverine Ecosystem Management Action Programme, including Terms of Reference and operating framework
- System for monitoring and evaluation designed and implemented, including performance and impact indicators (both for GEF project and watershed as a whole)
- Incremental cost analysis between the baseline scenario and the alternative scenario performed
- Terms of reference for the economic valuation of function and services of bi-national ecosystems and formulation of pilot projects
- Indicative assessment of binational collaboration in selected protected areas and strengthening plan
- GEF FSP Project Document

## C - JUSTIFICATION

The PDF Block B funding is needed to prepare the Full GEF Program. The PDF Block B activities will design specific responses aimed at promoting binational integrated ecosystem management approaches in the Sixaola River Basin that focus and incremental activities to be funded by the GEF Project that will complement the IDB investments in the two countries. Resources are particularly required for activities related to the design of the interventions related to the institutional strengthening of the binational institutional framework and the transboundary threat and root cause analysis required for the sound technical design of the GEF full sized project.

## D – BUDGET

### *PDF Block B*

Activity	GEF (US\$)	IDB (TC0112040) (US\$)	Local contribution (TC0112040) (US\$)
Transboundary threat and root cause analysis	100,000	100,000	30,000
Institutional strengthening (incl. financial sustainability)	80,000	20,000	--
Stakeholder participation	50,000	80,000	--
Information management	50,000	--	--
Economic valuation	50,000	--	--
Harmonization of binational protected area management plans and collaboration	60,000	--	--
Buffer zone management	30,000	100,000	--
Riverine Ecosystem Management Action Programme	50,000	100,000	30,000
Design of FSP and incremental cost analysis	30,000	--	--
Sub-total PDF-B	500,000	400,000	60,000

## PART IV – RESPONSE TO REVIEWS

A - CONVENTION SECRETARIAT

B – OTHER IAS AND RELEVANT EXAS