



# PROJECT IDENTIFICATION FORM (PIF)

**PROJECT TYPE: Full-sized Project**

**TYPE OF TRUST FUND: GEF Trust Fund**

## PART I: PROJECT IDENTIFICATION

Project Title:	Conservation and sustainable use of biodiversity in dry ecosystems to guarantee the flow of ecosystem services and to mitigate the processes of deforestation and desertification.		
Country(ies):	Colombia	GEF Project ID:	4772
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4720
Other Executing Partner(s):	Ministry of the Environment and Sustainable Development (MADS); Institute of Hydrology, Meteorology, and Environmental Studies (IDEAM); Alexander von Humboldt Research Institute of Biological Resources (IAvH); United Nations Development Programme (UNDP); Regional Autonomous Corporation of Tolima (Cortolima); Regional Autonomous Corporation of Alto Magdalena (CAM); Regional Autonomous Corporation of Atlántico (CRA); Regional Autonomous Corporation of Sur de Bolívar (CSB); Regional Autonomous Corporation of Valle del Sinú (CVS); Regional Autonomous Corporation of La Guajira (CORPOGUAJIRA).	Submission Date:	December 23, 2011
GEF Focal Area (s):	MULTI FOCAL AREA	Project Duration (Months):	60
Name of parent program (if applicable): ➤ For SFM/REDD+ <input checked="" type="checkbox"/>		Agency Fee (\$):	878,781

### A. FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative grant amount (\$)	Indicative co-financing (\$)
BD-1.	Outcome 1.1	Output 1. Output 2. Output 3.	GEFTF	4,352,609	12,150,000
LD-3.	Outcome 3.1. Outcome 3.2.	Output 3.1. Output 3.2. Output 3.4	GEFTF	962,596 962,595	2,758,341 2,758,341
SFM/REDD-2.	Outcome 2.1. Outcome 2.2.	Output 2.1. Output 2.2. Output 2.3. Output 2.4.	GEFTF	1,464,820 627,780	4,328,589 1,855,109
Sub-Total				8,370,401	23,850,380
Project Management Cost			GEFTF	417,418	2,609,820
<b>Total Project Cost</b>				<b>8,787,819</b>	<b>26,460,200</b>

### B. PROJECT FRAMEWORK:

<b>Project Objective:</b> To reduce the current trend of dry forest deforestation and desertification processes and ensure the flow of multiple global ecosystem services through biodiversity conservation, sustainable land management, and carbon storage.						
Project Component	Grant type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
1. A strengthened regulatory and land use planning framework facilitates the reduction of dry forest deforestation and desertification processes.	TA	<b>Outcome 1.1.</b> Regional and municipal territorial planning incorporates principles of biodiversity (BD) conservation, sustainable land management (SLM), and Reduced Emissions from Deforestation and Forest Degradation (REDD+) derived from the application of policy instruments (e.g., National Biodiversity Policy ),	<b>Output 1.1.1</b> Seventeen (17) Land Use Zoning Plans (POT, in Spanish) effectively contribute to the reduction of dry forest deforestation and desertification processes. <b>Output 1.1.2</b> At least 6 Watershed Management Plans (POMCA, in Spanish), as well as other local and regional land planning instruments (e.g., Municipal Development Plans [MDP]) effectively contribute to the reduction of dry forest deforestation and desertification	GEFTF	Total: 2,511,120 BD: 1,305,783 LD: 577,557 SFM/REDD: 627,780	7,227,514

		<p>and contributes to the reduction of dry forest deforestation and desertification processes.</p> <p><b>Outcome 1.2.</b> Effective deployment of human resources addresses threats that cause dry forest deforestation and desertification processes in the Caribbean region (Departments of Atlántico, Bolívar, Sucre, and La Guajira) and the Inter-Andean Valley of the Magdalena River.</p>	<p>processes.</p> <p><b>Output 1.2.1.</b> Strengthened capacity of 80 national and regional technical government officials (60 CARs + 10 IDEAM, + 10 MADS), and 340 community members in BD conservation (i.e., management of protected areas [PAs], tools to increase landscape connectivity among dry forest fragments); SLM (i.e., methodologies to estimate soil degradation and loss); and REDD+ (i.e., opportunity costs, reference levels, estimation, and implementation of environmental safeguards).</p> <p><b>Output 1.2.2.</b> Municipal-level geographic information system (GIS) mapping tool for sustainable forest management (SFM)/SLM and BD benefits guide national and regional decision-makers in the development and implementation of municipal and regional territorial planning instruments (e.g., POT, POMCA, MDP, Forest Management Plans [POF, in Spanish], etc.).</p> <p><b>Output 1.2.3.</b> Measurement, Reporting, and Verification (MRV) protocols for monitoring deforestation in dry forests are applied, and articulated with municipal and regional territorial planning instruments (e.g., POT, POMCA, MDP, POF, etc.) to assess REDD+ and BD benefits.</p>			
<p>2. Delivery of multiple global environmental benefits through the declaration of PAs, REDD+ practices, and SLM activities that strengthen the conservation and sustainable use of dry ecosystems.</p>	TA	<p><b>Outcome 2.1.</b> 72,000 hectares (ha) of dry forest (50,000 ha in the Caribbean region and 22,000 ha in the Magdalena River Valley) are protected by 17 new regional or local PAs (11 in the Caribbean region and 6 in the Magdalena River Valley), maintaining a stable population of indicator species (baselines to be established during the PPG phase).</p> <p><b>Outcome 2.2.</b> Avoided emissions due to dry forest deforestation approximately to 1,797,287 tCO<sub>2</sub> over a 5-year (yr) period (baseline: 123,596 ha of dry forest in both areas of the country: 78,689 ha in the Caribbean region, and 44,898 ha in the Magdalena River Valley aboveground biomass).</p> <p><b>Outcome 2.3.</b> Improved SLM through the ecological rehabilitation of 1,600 ha<sup>1</sup> of dry ecosystems (800 ha in the Caribbean region and 800 ha in the Magdalena River Valley) delivers sustained water flows in 5 watersheds and increases landscape connectivity (structural and</p>	<p><b>Output 2.1.1</b> At least 11 local and regional PAs in the Caribbean region and 6 in the Inter-Andean Valley of the Magdalena River have been declared and are operationalised to ensure the flow of multiple global ecosystem services.</p> <p><b>Output 2.1.2</b> Monitoring, surveillance, and enforcement mechanisms in place for 17 PAs and supported by management plans and financial resources derived from government funds (i.e., CARs), REDD+ incentives, and other sources.</p> <p><b>Output 2.2.1.</b> REDD+ pilot project protects 123,596 ha of dry forest in private lands (78,689 ha in the Caribbean region and 44,898 ha in the Magdalena River Valley) and contributes to regional sustainability through maintenance of ecosystem services.</p> <p><b>Output 2.2.2.</b> Methodology for the REDD+ pilot project in dry forest ecosystems is developed (methodology elements are outlined in the text).</p> <p><b>Output 2.2.3</b> Monitoring system at the local level (municipalities) tracks global environmental benefits from BD conservation, REDD+, and SLM.</p> <p><b>Output 2.3.1.</b> Landscape Management Tools (e.g., silvopastoral systems, hedgerows, biological corridors, etc) sustain water flows and reduce land degradation/desertification processes for 6 watersheds (3 in the Caribbean region and 3 in the Magdalena River Valley) are in place and defined by SLM plans.</p> <p><b>Output 2.3.2.</b> Ecological rehabilitation pilot</p>	GEFTF	<p>Total: 5,859,281 BD: 3,046,826 LD: 1,347,635 SFM/REDD 1,464,820</p>	16,622,866

<sup>1</sup> Data were extrapolated from the results of the 8th call BID-SINA II for ecological rehabilitation projects (landscape management tools) developed by the CARs of the Caribbean region (200 ha developed by CSB) and Tolima (600 ha developed by CORTOLIMA).

	functional) among dry forest patches (baseline stream flow will be determined during the PPG phase).	projects (using native species) for dry forests (methodology outlined in the text) are in place. <b>Output 2.3.3.</b> Private landowners' agreements used for establishing landscape management tools (i.e., biological corridors, live fences, wind breakers, etc.), that maintain the forest cover (1,600 ha) in agricultural/cattle ranching production landscapes. <b>Output 2.3.4.</b> At least 5 community-operated plant nurseries (3 in the Caribbean region and 2 in the Magdalena River Valley) are used to grow and manage native tree species for ecological rehabilitation purposes.		
Sub-Total			8,370,401	23,850,380
Project Management Cost (BD: 215,805; LD: 95,171; SFM/REDD+: 106,442)			GEFTF 417,418	2,609,820
<b>Total Project Costs</b>			<b>8,787,819</b>	<b>26,460,200</b>

### C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	Ministry of the Environment and Sustainable Development (MADS)	In-kind	1,250,000
		Grant	750,000
National Government	Institute of Hydrology, Meteorology, and Environmental Studies (IDEAM)	In-kind	2,825,000
		Grant	537,000
National Government	Alexander von Humboldt Research Institute of Biological Resources (IAvH)	In-kind	2,500,000
		Grant	500,000
Regional Government	Regional Autonomous Corporation of Tolima (Cortolima)	In-kind	1,484,820
		Grant	989,880
Regional Government	Regional Autonomous Corporation of Alto Magdalena (CAM)	In-kind	1,484,820
		Grant	989,880
Regional Government	Regional Autonomous Corporation of Atlántico (CRA)	In-kind	1,484,820
		Grant	989,880
Regional Government	Regional Autonomous Corporation of La Guajira (CORPOGUAJIRA)	In-kind	989,880
		Grant	1,487,249
Regional Government	Regional Autonomous Corporation of Sur de Bolívar (CSB)	In-kind	1,484,820
		Grant	989,880
Regional Government	Regional Autonomous Corporation of Valle del Sinú (CVS)	In-kind	1,484,820
		Grant	989,880
NGOs	TNC / CI-C, other.	In-kind	1,500,000
		Grant	732,571
GEF Agency	UNDP	Grant	1,015,000
<b>Total Co-financing</b>			<b>26,460,200</b>

### D. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (a)	Agency Fee (b)	Total c=a+b
PNUD	GEF TF	BD	Colombia	4,569,666	456,966	5,026,632
PNUD	GEF TF	LD	Colombia	2,021,198	202,120	2,223,318
PNUD	GEF TF	SFM/REDD	Colombia	2,196,955	219,695	2,416,650
<b>Total Grant Resources</b>				<b>8,787,819</b>	<b>878,781</b>	<b>9,666,600</b>

## PART II: PROJECT JUSTIFICATION

### A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

#### A.1. THE GEF FOCAL AREA STRATEGIES:

This project will contribute to reducing the processes of deforestation and desertification in the Colombian dry forest ecosystem, and will promote the flow of multiple global ecosystem services. The dry forest ecosystem is considered a high conservation priority for the country, and through this project activities will be implemented that will drive the establishment of protected areas

(PAs), the implementation of Reduced Emissions from Deforestation and Forest Degradation (REDD+) pilot projects, and sustainable land management (SLM). These and other activities will contribute to the removal of critical political/legal, capacity, and financial barriers that have prevented the effective conservation and sustainable use of this globally important ecosystem.

The objective of the project is framed within the GEF-5 Biodiversity (BD) and Land Degradation (LD) focal areas. The project components address the second objective of the Sustainable Forest Management SFM/REDD+ strategy, which seeks to “*Strengthen the enabling environment to reduce GHG emissions from deforestation and forest degradation and enhance carbon sinks from LULUCF activities.*” As such, the project has been designed in accordance with the GEF lines of investment for the aforementioned focal areas to ensure multiple environmental benefits from the conservation of BD and ecosystem services, and to reduce the process of desertification in the Colombian dry forest ecosystem. To achieve this, the project will strengthen the land use planning framework—so to better govern the allocation of land to conservation uses—and strengthen institutional capacities within the regional authorities to enforce the framework. In support of this, the project will develop a geographic information system (GIS) at the municipal level and will strengthen the capacity of municipal authorities to utilize mapping tools in planning. Moreover, the project will implement practical measures for the conservation of BD in the dry forest ecosystems, the development of SLM/REDD+ projects, and sustainable land management (SLM) in two critical areas, which are located in two of the regions of the country that have been the most affected and transformed by the processes of land degradation, due principally to the expansion of agricultural activities in these landscapes and the unsustainable use of dry forest ecosystems: the Caribbean region and the Inter-Andean Valley of the Magdalena River. These measures will be implemented through activities related to Objective 1 of the GEF-5 BD focal area, which is to: “*Improve Sustainability of Protected Area Systems,*” since the declaration of PAs is considered a measure to preserve tropical dry forest patches that remain present in the areas of study. On the other hand, the implementation of the REDD+ pilot projects, in accordance with Objective 2 of the SFM/REDD+ strategy in both target landscapes will help to reduce over a 5-year period total GHG emissions equivalent to 1,797,287 tCO<sub>2</sub>; 1,144,266 tCO<sub>2</sub> of which correspond to the Caribbean region and 652,890 tCO<sub>2</sub> to the Inter-Andean Valley of the Magdalena River.

With respect to the GEF-5 LD focal area, the project will focus on achieving the LD-3 objective, which is to: “*Reduce pressures on natural resources from competing land uses in the wider landscape.*” This objective is addressed by the project through institutional strengthening in SLM and activities in the two priority landscapes for the maintenance and improvement of the forest cover through ecological rehabilitation, through the implementation of landscape management tools (biological corridors, live fences, wind breaks, etc.) on private lands, which are very important for increasing functional connectivity at the landscape level, and at the same time to promote the conservation of important ecosystem services such as water provisioning. For the conservation of the latter, activities will be implemented in five watersheds (two in the Caribbean region and three in the Magdalena River Valley).

**A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS:** The project is consistent with the policy guidelines provided in the current National Biodiversity Policy (PNB) (1996) to promote the declaration of PAs in areas with sub optimal PA coverage and to reduce the processes and activities causing the loss of BD. The project is also consistent with the current proposal by the National Policy for Integrated Management of Biodiversity and Ecosystem Services (PNGIBSE) (2011), which drives actions for the conservation and the *in situ* management of BD through (Project Component 2). Moreover, institutional strengthening and capacity-building for officials and community members, which is proposed herein for the conservation of BD (Component 1), is also addressed by the PNGIBSE – which highlights the need to strengthen the management capacity of public institutions for the conservation of BD and derivative ecosystem services. In addition, the Policy emphasizes the need to integrate BD conservation objectives into regional planning activities governing the allocation and management of cross sectoral land uses, including the placement of infrastructure. Project interventions aimed at strengthening the planning and regulatory framework for land use are underscribed by Law 388 of 1997, and Law 1450 of 2011, which require that all Municipalities develop land use plans, which makes provision for land use zoning taking into account environmental management objectives. These needs are also underscored in other policy instruments such as the National Forest Policy (1996) and the National Forestry Development Plan (2000), which promote Sustainable Forest Management; and the National Action Plan for the Fight Against Desertification and Drought (PAN) (2004), which promotes actions for prevention, rehabilitation, and sustainable management of dry land ecosystems affected by land degradation. (Art. 10). The National Water Resource Policy (2010) provides the management framework for the conservation of water resources through effective municipal land use planning and regulation (per Decree 1729 of 2002). In addition, the national REDD+ strategy, which seeks to promote the implementation of REDD+ pilot projects in the country, is driven by CONPES Document 3700, which presents the “*Institutional strategy for the articulation of policies and actions regarding climate change in Colombia*” (2011) (Component 2). Finally, the sustainable management of dry land ecosystems is in accordance with Structural Program I, Goal 3 of the PAN, which is to “*Foster the appropriate management of ecosystems, especially in dry zones, and efficient and effective environmental management to guarantee the permanent supply of ecosystem goods and services to the surrounding populations and to achieve the sustainable ecological, economic, and sociocultural development of said areas;*” as well as the National Water Resource Policy (2010) in regards to “*Conserving the natural systems and hydrological processes upon which the water supply of the country depends*” (Objective 1, Strategy 1.3).

## PROJECT OVERVIEW

**B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:** Colombia is located in the northern corner of the South American continent, and is characterized by a wide variety of climates, soil types, and ecosystems, which is related to its enormous geomorphologic complexity and its position as a stepping stone for species dispersion between North America and South America. The country covers an area of 1,141,748 square kilometers (km<sup>2</sup>) and comprises 311 continental and coastal ecosystems (IDEAM and Institutes, 2007). The country is composed of three large continental biomes: tropical desert covering 758,536 ha (0.7%), tropical dry forest covering 7,658,131 ha (6.7%), and tropical humid forest covering 105,632,472 ha (92.5%). Each of these biomes supports different habitat types. Natural forests, for example, cover 61.2 million ha, which correspond to 53.5% of the country's land territory. Among the most representative types of native forest are: (i) tropical humid (50,873,638 ha); (ii) Andean and other montane systems (9,861,097 ha); and (iii) tropical dry forests (203,242 ha). In general terms, dry ecosystems cover an area of 8,146,597 ha, which are distributed throughout the Atlantic coast (including islands), the Orinoco, the Inter-Andean Valleys of Magdalena and Cauca, and within some Andean and high-Andean enclaves (in areas of "rain shadow"). The coastal plain of the Caribbean is the most extensive area of tropical dry forest (6,046,376 ha), followed by the Magdalena Valley (1,033,000 ha). In the rest of the country, the dry forest is relegated to small remnants that are located on production lands (grasses and crops). This is the case in the valley of the Cauca River, where only 3% of the original coverage remains in fewer than 15 patches, the largest of which barely covers an 18-ha area.

With regard to BD, the tropical dry forests are less biologically rich overall than humid forests. In Colombia, these forests are characterized by high endemism. Close to 73% (in 41 genera) of the woody plants in the Caribbean are restricted to one location, while for birds it is 46% and for dung beetles it is 50%. In the case of the Magdalena Valley, 43% of the woody plants are restricted to one location. In terms of ecosystem services, tropical dry forests harbor species used by local communities for timber, medicines, fruit, foraging, and ornamental purposes, such as the "Matarraton" (*Gliciridia sepium*), "Carbonero" (*Leucaena leucocephala*), "Guayacanes" (*Tabebuia* spp), "Cactus" (*Opuntia* spp, *Cereus* spp), "Samanes" (*Samanea saman*), "Chiminangos" (*Pithecellobium* spp), "Pitaya" (*Acanthocereus pitahaya*), "Mamoncillo" (*Melicococcus bijugatus*), and Jobo (*Spondias mombin*, *S. purpurea*). In addition, relicts of dry forest constitute genuine, yet largely unknown, *in situ* genetic banks. They also provide regulatory functions such as erosion control, mesoclimatic and microclimatic regulation, water provisioning services, and carbon storage. IDEAM (2010) calculates that the areal biomass in tropical dry forests stores approximately 35,494,992 tC, while pre-montane dry forests store close to 186,625 tC.

Historically, the areas throughout which the dry ecosystems are distributed are some of the most highly transformed in the country. The Caribbean region is the most transformed with 82.3% of its area altered by human-induced processes, followed by the Andean region at 61.8% (including the Inter-Andean dry valleys). Etter et al. (2009) demonstrated that the area of tropical dry forest had dramatically shrunk to 10% of its original extant area by 2000. Thus, the tropical dry forest is considered today among the three most degraded and fragmented ecosystems in Colombia. It is also poorly inventoried in biological terms. The two main direct threats to the tropical dry forest and its biodiversity are: 1) cattle ranching particularly in the Colombian Caribbean and Inter-Andean valleys and 2) desertification. According to the map of continental, marine, and coastal ecosystems of Colombia, the dry biomes correspond to 2.9% of the natural forest cover. Given their small area and anthropogenic threat, they constitute a top conservation priority for Colombia. Desertification processes have also been calculated as affecting 78.9% of the dry land areas in the country. According to the 2<sup>nd</sup> Communication from Colombia to the United Nations Framework Convention on Climate Change, the total area at risk of human-induced desertification processes in the country is estimated at 16,422,066 ha (or 14.30% of the country) The Caribbean region, the Inter-Andean valleys, and the Orinoco are the regions considered most vulnerable to increased desertification.

The Caribbean region of Colombia covers an area of 132,288 km<sup>2</sup> and is dominated by undulating plains and the great tropical dry forest biome of the Caribbean. The predominant climate is hot-dry (91%) and hot-very dry (9%). The region is dominated by grasslands (61%), secondary vegetation (13%), heterogenous agricultural areas (9%), and shrublands (7%). The current vegetative cover of the dry ecosystems in the Departments of Atlántico, Bolívar, and Sucre is 335,117 ha; 87,104 ha of which are tropical dry forest in a relatively good state. The municipalities and departments with the largest areas of dry forest are: Luruaco (1,351 ha) and Repelón (917 ha) in Atlántico; El Carmen de Bolívar (20,197 ha), San Juan Nepomuceno (9,368 ha), and San Jacinto (6,559 ha) in Bolívar; San Onofre (10,012 ha), Colosó (4,000 ha), Chalán (3,488 ha), and Ovejas (3,341 ha) in Sucre; and Dibulla (15,803 ha) and Rioacha (3,654 ha) in La Guajira. The Departments of Tolima and Huila are located in the Andean region of Colombia in the upper watershed of the Magdalena River and within the alternating hygric and/or tropical subxerophytic zonobiome of the upper Magdalena, which is characterized by hot-dry (76%) and temperate-dry (19%) climates. Land cover comprises grasses (46%), annual or transient crops (19%), secondary vegetation (17%), and heterogeneous agricultural areas. Dryland ecosystems cover 335,117 ha; of which only 87,104 ha are tropical dry forest and in a relatively good conservation state. The municipalities in Huila with the largest amount of dry forest are Tello (7,340 ha), Villavieja (13,582 ha), Neiva (9,294 ha), and Aipe (9,224 ha), while in Tolima, the largest remaining dry forest patches lie in the municipalities of Natagaima (3,123 ha) and Chaparral (2,335 ha). These departments and municipalities are all highly vulnerable to desertification. In the Department of Atlántico, Luruaco shows a desertification percentage of 87.6% of its total area, with Repelón following at 64%. In Bolívar, El Carmen de Bolívar shows a desertification percentage of 64%, San Jacinto shows 63%, and San Juan Nepomuceno shows 58.2%. In Sucre, San Onofre and

Ovejas show 82.7% and 80.7%, respectively. Also in Sucre, Colosó shows a desertification percentage of 73% of its total area, and Chalán shows 34.9%. In La Guajira, the municipality of Rioacha shows a desertification percentage of 86.1% and Dibulla 27.6%. For Dibulla, only 37% of its total area is composed of dryland ecosystems; however, 75% of the dry area is undergoing processes of desertification. In addition, the municipalities in the region of the Magdalena Valley in the Department of Huila show the following percentages of desertification: Villavieja (99.3%), Aipe (67.8%), Tello (52.7%), and Neiva (39.4%). In Tolima, the municipality of Natagaima shows a desertification percentage of 83.3% and Chaparral shows 2.5%. In the case of Chaparral, the low percentage of desertification arises because the majority of the municipality is located in the humid forests biome; however, of the area covered by dry ecosystems, (86.4%) are classified as at elevated risk of desertification.

**The following baseline was identified for each of the three focal areas addressed by this project:**

1) **Biodiversity:** Protected areas constitute a key instrument for biodiversity conservation in Colombia. Unfortunately, Colombia's protected area estate is not representative of the country's bio-geography; in particular, dryland ecosystems, and dryland forests in particular, are under-represented in the National System of Protected Areas (SINAP). Colombia currently has 486 PAs classified within different management categories (at the national, regional, and local levels). Of these, 110 PAs are managed at the national level, with a total area of approximately 18,282,628 ha. At the regional level there are 257 areas covering 4,000,012 ha, while at the local level, there are 119 areas covering approximately 156,450 ha. The System of National Natural Parks of Colombia (SPNN) currently has 55 declared PAs, which cover approximately 12,602,320 ha. These areas are classified within the following categories: 41 National Natural Parks; 11 Wildlife and Plant Sanctuaries; 2 National Natural Reserves; 1 Unique Natural Area; and 1 "Vía Parque" These categories are currently being reviewed, with a view to simplification, and harmonizing them with international norms. Since 1996 the SPNN has been expanded by 2,224,839 ha (close to 20%). In the Caribbean region, a Regional System of Protected Areas (SIRAP) was established 3 years ago. The region currently has 32 PAs, which comprise 11 national parks, 5 regional areas, 4 national forest reserves, and 12 civil society reserves. The total 4 year budget plan for UAESPNN has increased by over 50% (from US \$9.7 m to US \$22.7 m). In addition, investments increased from US \$4.5 million to US \$14.7 million (MAVDT, 2010). Nevertheless, the country faces a financing gap amounting to US \$16.3 m, between current funding and that needed for effective management.

2) **Land Degradation:** The problem that the baseline activities seek to address is the acceleration of desertification due to unsuitable use of soils, and the deforestation and degradation of the dry ecosystems, especially the dry forests. The implementation of the National Action Plan for the Fight Against Desertification and Drought (PAN) (2004), as well as other national initiatives framed within the PAN, will serve to increase the capacity to define the methods and protocols for identifying and evaluating the current and potential future processes of soil and land degradation through erosion, salinization, and desertification at the national, regional, and local levels; to restore the dry ecosystems (including soils); and to raise awareness among the communities and institutions about the problem of desertification. The investment that the country has made to implement PAN through the land use zoning plans (POT) in its dry ecosystems shows that on average US \$1,134,000 m are spent every year on management measures to mitigate current land degradation trends in the 17 municipalities targeted by the project.

3) **SFM/REDD+:** The problem that the baseline activities seek to address is the reduction and control of deforestation and the degradation of dry forests, which is a product of their unsustainable use. As a consequence of unsustainable land use, the country has been losing its capacity to capture and store carbon in natural sinks and is experiencing an increase in GHG emissions. The areal biomass in the tropical dry forests has been calculated as storing approximately 35,494,002 tC, while the pre-montane dry forests store approximately 186,625 tC (IDEAM, 2010). The principal actions taken in the country to counteract these deforestation and degradation processes are based on efforts at reforestation, and more recently, ecological rehabilitation. To this end, the country has invested close to US \$14,048,000 in forest management, fire management and reforestation efforts between 2004 and 2007, establishing close to 20,000 ha of reforested areas (MAVDT-GBM, 2009). Despite this, the dry forests have not been a high management priority thus far, and management efforts have been limited to only a few projects. In general terms, the change in land use and silviculture, during the period of 1990 to 2004, added 13,954 Gg of CO<sub>2</sub> eq, which reflected an increase of 116% from the beginning to the end of this time period. An increase of 9.32% in emissions related to the conversion of forests and grasslands was shown in 1990 and an increase of 14.45% was registered in 2010 (IDEAM, 2010). The current project was developed within the framework of the National REDD+ Strategy, currently formulated by the Ministry of Environment and Sustainable Development. The National REDD+ Strategy will facilitate the economic development of communities and ethnic groups by having access to the global voluntary carbon market (DNP, 2011). The Forest Carbon Partnership Facility (FCPF) will provide a grant of US \$3.4 million to finance the REDD+ Readiness through the implementation of the R-PP between the 2012-2015 period. The R-PP includes the following REDD+ readiness activities: 1) consultation with local communities; 2) development of a REDD+ strategy that is the result of a nationwide participatory process; 3) development of a reference scenario; 4) design of a monitoring system that tracks emissions and multiple benefits; and 5) design of a monitoring and evaluation program. The development of MRV systems has been included in the component 4(a) on monitoring systems in the Colombia R-PP. This component has a budget of US \$4,600,000 for the 4 years of implementation, and it includes developing (i) guidelines for identifying deforestation, degradation and carbon contents of forests; (ii) reporting guidelines; (iii) verification strategy; (iv) national and sub-national information systems; (v) monitoring system regulations and (vi) a LULUCF inventory, among others. In addition, the component

4(b) of the Colombia R-PP includes the development of guidelines for the evaluation of social and environmental co-benefits for US \$330,000. The component 3 of R-PP has a budget of US \$4,177,000 for the development of reference level scenarios in relation to projections and tendencies of deforestation and carbon stocks. Information resulting from the project will contribute to adjusting these calculations on a regional and local level. Finally, the component 2 of R-PP, which is related to seeking options for a REDD+ strategy, has a 4-year-budget of US \$1,200,000 for the exploration of options for controlling the various causes of deforestation and the analysis of cost-efficiency of these options. Outputs 2.2.2 and 2.2.3 of the current project are based on, and aim at contributing to, components 3 and 4 of the Colombia R-PP on reference levels and monitoring systems. The outputs will provide information at a local level, supporting the development of R-PP guidelines and models. In addition, during its implementation the project will benefit of the advances and developments of the R-PP, projected to start its implementation phase in June 2012.

Projected investment for conservation activities in dry forests for the 2012-2015 period is only around 20 million USD, showing a great necessity for investment to support activities for dry ecosystems conservation, which are one of the most endangered ecosystems by landscape transformation, deforestation and desertification processes. Those activities that the Government of Colombia is going to carry out are closely related to the project activities, i.e. the conservation of biodiversity in dry ecosystems (declaration of PAs), sustainable land management and REDD+ activities.

Furthermore, it is estimated that the regional environmental authorities – the Regional Autonomous Corporations (Corporaciones Autónomas Regionales) – involved in the project will maintain their budget, which in 2011 was US \$5.8 million for the following actions in all ecosystems of their jurisdiction:

- Environmental conservation;
- Restoration of dry forests.

Regarding enforcement, the Ministry of Environment and Sustainable Development (MADS), the Regional Autonomous Corporations (CAR), and the municipalities are the institutions responsible for creating and implementing all policy and normative instruments related to biodiversity conservation, sustainable land management and carbon storage, at national, regional and local levels, respectively. This enforcement contributes to creating sound frameworks and guidelines for local communities and other stakeholders to carry out activities which help to improve the flow of multiple global ecosystem services.

The baseline projects are not sufficient to achieve the long-term solution of implementing an integrated landscape approach that promotes the conservation of the dry forest ecosystem and a reduction in desertification/land degradation processes in order to secure the flow of multiple ecosystem services. Currently, there are two barriers that prevent this objective from being reached:

Limited implementation of national environmental policies and weak land use planning framework	While Colombia has approved important national environmental policies in the last few years, these policies have not been implemented yet at a regional level. Examples of these policies include: a) the National Policy for the Management of Biodiversity which strengthens the National System of Protected Areas (SINAP) and defines environmental criteria for territorial planning; b) the Policy for the Integrated Management of Water Resources which promotes regional and local processes for protecting, conserving, and restoring key ecosystems for water supply regulation and (3) the National Action Plan for the Fight Against Desertification and Drought (PAN) which promotes measures that prevent or mitigate land degradation, with priority placed on the dry regions of the Caribbean, Andes, and Orinoco regions. These policies have not been mainstreamed into current land use planning approaches that dictate rural and urban development nationwide. Unfortunately, past and present territorial land management instruments such as the land use management plans (POT) and water management plans have failed to prioritize biodiversity conservation principles, sound land management approaches and emerging key REDD+ concepts and approaches. This has led to an increase in the deforestation rate and degradation of the country's ecosystems. The situation is especially critical in the dry ecosystem areas where unsustainable cattle ranching activities have severely impacted the delicate balance of this ecosystem and facilitated land degradation and desertification processes.
Limited capacity of the regional and municipal authorities and local communities with respect to REDD+, SLM, and BD conservation.	The staff of municipalities and regional environmental agencies in charge of implementing these national policies and regional planning instruments remains unaware of the scope and potential impact of these policies on rural and urban development as mechanisms to ensure the sustainable use of Colombia's ecosystems. For example, they have limited knowledge on the potential of landscape management tools such as environmentally friendly silvopastoral systems, biological corridors and hedgerows to ensure the sustainable management of dry forest ecosystems. Furthermore, there is lack of capacity regarding emerging REDD+ concepts and methodologies and strategies to integrate these new approaches into territorial planning processes. The inclusion of themes that are important for sustainable development, such as SLM, BD conservation, and REDD+ within public policy is a priority for the country. It is urgent and necessary to strengthen the capacities within the institutions that are charged with national, regional, and local environmental management so that they may be equipped to develop and replicate the actions necessary to turn these tools into real and concrete options for improving the state of the land and its inhabitants, and not just appealing topics.

**B. 2. INCREMENTAL COST REASONING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS:** The objective of the project is to reduce the loss of biodiversity, deforestation and land degradation in the dry forest biome. The GEF investment will help to counteract the loss of dry forests that are present in productive landscapes through the declaration of PAs, undertaking REDD+

projects, and pursuing SLM in the Caribbean region of the Inter-Andean Valley of the Magdalena River. Two components are planned.

**Component 1** will facilitate the implementation of (1) the National Policy for the Management of Biodiversity and its Ecosystem Services (PNGIBSE), particularly with regard to strengthening the National System of Protected Areas (SINAP) and mainstreaming key environmental criteria into territorial planning; (2) the Policy for the Integrated Management of Water Resources, with regard to the promotion of regional and local processes for protecting, conserving, and restoring key ecosystems for water supply regulation; and (3) the National Action Plan for the Fight Against Desertification and Drought (PAN), with regard to identifying and adopting measures that prevent or mitigate land degradation, with priority placed on the dry regions of the Caribbean, Andes, and Orinoco. Implementing these policies means that regional and local land planning tools will incorporate practices related to: a) BD conservation (i.e., PA management and tools to increase landscape-scale connectivity), b) SLM (i.e., silvopastoral systems and methodologies to estimate the degradation and loss of land); and c) reduced deforestation through REDD+ (i.e., opportunity costs, reference levels, and the implementation of environmental safeguards)

These regional land planning tools include: a) the Watershed Conservation and Management Plans (POMCA); b) the 4-Year Action Plans (PAC) of the Regional Autonomous Corporations, and c) the Forest Management Plans (POF). Similarly, the project will facilitate incorporating the above practices into municipal-level planning instruments (territorial management plans) for at least 17 municipalities found in dry ecosystems. The project will also serve to strengthen capacities in the aforementioned areas of the municipal, regional, and national environmental authorities and local communities: 10 officials from the Ministry of the Environment and Sustainable Development (MADS), IDEAM, and each of the CARs from the Departments of Atlántico, Bolívar, Sucre, Tolima, and Huila will be trained. In addition, a minimum of 340 members from the local communities of Luruaco and Repelón in Atlántico; El Carmen de Bolívar, San Juan Nepomuceno, and San Jacinto in Bolívar; San Onofre, Colosó, Chalán, and Ovejas in Sucre; Dibulla and Rioacha in La Guajira; Tello, Villavieja, Neiva, and Aipe in Huila; and Natagima and Chaparral in Tolima (minimum of 20 from each municipality) will also be trained in these issues, so that they may also become innovative trainers and replicators of their knowledge and experience. GEF resources will also help to put a GIS mapping tool into place at the municipal level, based on primary data and which will be available for national consultation, to support decisions related to territorial planning in terms of BD conservation, reduction of desertification processes, and reduction of deforestation through the incorporation of data from activities related to the REDD+, SLM, and the declaration of regional and local PAs. In addition, protocols for the Measurement, Reporting, and Verification (MRV) of deforestation in dry forests will be implemented and articulated into the 15 POT for the aforementioned municipalities, as well as in the environmental components of the 17 MDPs. These MRV protocols will serve to guide similar actions in other dry areas of the country. It must be underscored that POTs, POMCAs and MDPs must be adopted by legal decree at a municipal level and are enforced by municipalities and the regional environmental agencies (CARs).

**Component 2** will allow the development of field activities, adjusted according to the results of Component 1, which contribute to territorial management in a way that ensures the maintenance of globally important ecosystem services (e.g., carbon storage and water resource regulation) in dry ecosystems, and lays the foundations to guide productive sector planning and future development trajectories. To achieve this, GEF resources will support the following three strategies:

(i) The declaration of 17 local and regional PAs and the development/implementation of their respective management plans, to preserve an approximate total of 72,000 ha of tropical dry forest in 17 municipalities of the Caribbean region (50,000 ha) and the Inter -Andean Valley of the Magdalena River (22,000 ha). This includes the establishment of surveillance, monitoring, and management mechanisms in the private areas supported by government funding (i.e., CARs), REDD+ incentives, and other sources that are identified by the financial strategies developed for the PAs. It should be noted that the dry ecosystems, especially the tropical dry forests, are among the least represented ecosystems in the SINAP. These areas will be protected as regional and municipal PAs to be managed either by CARs or municipalities;

(ii) SLM activities focused on the implementation of 1,600 ha of landscape management tools (e.g., silvopastoral systems, hedgerows, biological corridors, etc) on private lands of six watersheds in the two project areas (3 in the Caribbean and 3 in the Magdalena Valley) will facilitate improved landscape-level structural and functional connectivity between dry forest patches within the private lands. Since cattle ranching is one of the main threats to the conservation of dry forest, the project will help to ensure that production and other activities on cattle farms are located appropriately within the farm and the landscape, in order to maximize compatibility with land use potential and to promote ecosystem connectivity and biodiversity conservation. This will be achieved, for example, by building capacities among farmers to develop farm spatial plans, and developing objective and technically-sound criteria for silvopastoral systems that take into account issues of biological connectivity and biodiversity conservation. The implementation of sound silvopastoral systems through the introduction of agroforestry arrangements and improved herd and pasture management practices, can generate attractive economic and environmental benefits for farmers by maximizing their return on land and other inputs. Data from CIPAV, for example show that such systems can lead to improvements in forage production/ha, carrying capacity/ha, average daily weight gain/animal and annual meat production/ha of more than 100%, 190%, 120% and 500% respectively, while milk production can increase by around 500%, with similar levels of improvement in



milk quality. Currently, the project sites are dominated by introduced pasture. This pasture consists of resistant and competitive species which inhibit the growth of native species, holding back the natural succession and regeneration. Due to the high levels of transformation and ecosystem degradation of dry tropical forests, ecological rehabilitation based on secondary succession is needed. Artificial restocking through the sowing of plant species helps accelerate the rehabilitation process and removes the barriers (e.g., species that slow down succession, the shortages of seeds and problems of spreading the seeds), that prevent the natural course of the succession. The project will work with local partners to ensure that farmers receive the technical, organizational and marketing support required to allow them to realize these benefits, and to develop institutional capacities to ensure the continued provision of such support in the long term.

Participatory planning techniques will facilitate reaching agreements with the private landowners and thereby implementing the proposed Landscape Management Tools. These Tools will be complemented by ecological rehabilitation pilot projects that will also favor the conservation of water bodies and watercourses as well as areas of aquifer recharge and infiltration (i.e., water resources). The methodology for implementing the ecological rehabilitation pilot projects will consist of the following 12 steps: 1) establish the ecosystem of reference; 2) evaluate the current status of the ecosystem; 3) define the scales and organizational levels, and define the rehabilitation objectives (e.g., connectivity, improved habitat, expanded areas of patches, etc.); 4) establish the scales and hierarchies of disturbances; 5) establish the strategies for community participation that will ensure the sustainability of the processes once the project has ended; 6) evaluate the potential for regenerating plant species to be used; 7) define the barriers to rehabilitation; 8) select the appropriate species for rehabilitation; 9) propagate in nurseries and manage species; 10) select the connectivity routes and intervention sites; 11) negotiate with private landowners to define the types of Landscape Management Tools (i.e., biological corridors and hedgerows) to be used and the connecting pathways between the dry forest fragments; and 12) monitor and consolidate the rehabilitation process. These activities will be supported through the implementation of community nurseries for native species (at least 5 nurseries, 3 in the Caribbean and 2 in the Magdalena Valley), which may be converted into storehouses of plant material to help advance the ecological rehabilitation processes that are the basis of the Landscape Management Tools and which after the project ends can be converted into a source of additional income for the local communities through the sale of plant material for ecological rehabilitation processes in other dry areas of the country. The knowledge and experience generated in the nurseries will help to create reproduction standards for the native species and an ecological rehabilitation plan for the tropical dry forest.

(iii) REDD+ activities that help reduce dry forest deforestation in 5 watersheds (2 in the Caribbean and 3 in the Magdalena Valley), avoiding total GHG emissions of close to 1,797,287 tCO<sub>2</sub> (1,141,266 tCO<sub>2</sub> in the Caribbean region and 652,890 tCO<sub>2</sub> in the Magdalena Valley, both during a 5-year period). The REDD+ activities will employ the following methodology: 1) define the limits of the proposed REDD+ project (spatial, temporal, field measurements of the carbon and other GHG emissions sources); 2) analyze the multi-temporal change in land use and vegetative cover in the region of reference during the past 10 to 15 years and project the regeneration potential of the forest; 3) analyze the underlying agents, drivers, and causes of deforestation; 4) project the amount of future deforestation; 5) determine the future deforestation fronts by analyzing the spatial correlation between historical land use and change in coverage and the biophysical and socioeconomic factors (e.g., proximity to highways, slope, population density, among other variables); 6) project future activity in the baseline (i.e., land use and change in land cover baselines), using the results compiled from steps 2, 4, and 5; 7) calculate the transaction, implementation, and opportunity costs associated with land uses in the project area; 8) interpret remote sensing and perform precise and exact estimations based on fieldwork of the expected baseline of carbon reserves and avoided CO<sub>2</sub> emissions; 9) interpret remote sensing and perform precise and exact estimations based on fieldwork of the changes in current carbon stocks and avoided CO<sub>2</sub> emissions; 10) estimate the expected leakages due to changes in the carbon stocks and avoided CO<sub>2</sub> emissions; 11) calculate *ex ante* the expected net reductions of GHG emissions of anthropogenic origin; 12) monitor the project; 13) calculate *ex post* the expected net reductions of GHG emissions of anthropogenic origin; and 14) adjust the baseline for the future period of credits. The REDD+ pilot projects will also include a proposal for performance-based payment schemes (i.e., voluntary market or International Fund) that include precise forest measurements as outlined in the 14-step methodology. The proposal for performance-based payment schemes will be implemented during the life of the project. According to Cancun's COP decision 4/CP.15 the scope of a REDD+ project includes reducing emission from deforestation and forest degradation, conserving and enhancing forest C stocks, and ensuring the sustainable management of forests.

The methodologies for the REDD+ and SLM activities will be adjusted according to regional and local conditions. Synergies should be established between the REDD+ and SLM activities based on ecological rehabilitation, which will be developed through Component 2. Although the pilot areas in the Caribbean region and the Inter-Andean Valley of the Magdalena River include different groups of stakeholders from two distinct geographical regions, the national stakeholders common to both areas and with greater relevance to the project are the MADS and IDEAM. These two organizations, jointly with the project team, will provide technical support to the project and will coordinate in the field with the local and regional stakeholders for the implementation of the REDD+ and SLM activities based on ecological rehabilitation. In addition, the training and capacity-building activities planned for the 17 municipalities through Output 1.2.1 will provide local and regional stakeholders with the opportunity to share knowledge and experience and lessons learned between regions, with respect to the application of REDD+ and SLM activities based on ecological rehabilitation, with the necessary adjustments in each of the regions and pilot areas, in accordance with their biophysical

and socioeconomic characteristics. The application of the MRV protocols to monitor deforestation of the dry forest (applicable to the REDD+ activities) and the SLM activities based on ecological rehabilitation, which will be adjusted to each of the pilot areas, will have an additional synergetic effect in terms of the lessons learned that are derived from the application/adjustment of the steps in a pilot area that may be useful for application in the second pilot area. The specific benefits to be delivered through the pilot areas where the pilot projects of Component 2 will be developed are the following:

Current practice (baseline)	Alternative to be put in place by the project	Benefits
<p>Caribbean region:</p> <ul style="list-style-type: none"> <li>- Highly fragmented dry forest that is underrepresented in the SINAP.</li> <li>- Unsustainable agricultural practices and the expansion of agricultural frontier.</li> <li>- Overexploitation of dry forests: illegal logging, source of firewood.</li> <li>- Forest fires related to agricultural production.</li> </ul>	<p>BD conservation (declaration of PAs); REDD+; SLM:</p> <ul style="list-style-type: none"> <li>- 50,000 ha preserved through 11 regional and local PAs.</li> <li>- Reduced deforestation through REDD+ activities, including: a) zonification and definition of emission evaluation limits for the project; b) verification of the baseline for avoided emissions; c) monitoring and verification and reduced emissions; and d) definition of mechanisms and instruments for the equitable and just distribution of benefits.</li> <li>- SLM based on silvopastoral systems, biological corridors and other landscape management tools that facilitate the ecological rehabilitation of 800 ha of dry forest in three (3) watersheds. These efforts will be supported by the planting and propagation of native species from community nurseries and native regeneration in such a way that contributes to increasing landscape-level connectivity, to conserve water resources, and reduce desertification processes.</li> </ul>	<ol style="list-style-type: none"> <li>1. Carbon storage (Avoided GHG emissions): Reduction of emissions from deforestation (average deforestation rate of 1.27%/year)<sup>2</sup> of 78,689 ha: 1,144,266 tCO<sub>2</sub> during a 5-year period (# of ha x annual deforestation rate ha/year x 60.0 tC ha/year<sup>[3]</sup> x 3.67 CO<sub>2</sub> conversion factor).</li> <li>2. Water flow in two watersheds (to be defined during the PPG phase).</li> <li>3. 29,489 ha of dry forest connected, forming conservation nuclei (i.e., groups of areas resulting from the connection of dry forest patches and the HMP used to connect them).</li> <li>4. Improved habitat for BD: Number of species of biological groups (birds, plants, and ground ants) remains stable in the mosaic of landscapes among dry forests and agricultural areas. Demographic structure and recruitment rates of individuals of species of biological groups (birds, plants, and ground ants) remain stable in the dry forest patches.</li> </ol>
<p>Inter-Andean Valley of the Magdalena River:</p> <ul style="list-style-type: none"> <li>- Unsustainable agricultural practices.</li> <li>- Overexploitation of dry forests: illegal logging, source of firewood.</li> <li>- Forest fires related to agricultural production.</li> </ul>	<p>SFM/REDD+, SLM, and BD conservation:</p> <ul style="list-style-type: none"> <li>- 22,000 ha preserved through 6 regional and local PAs.</li> <li>- Reduced deforestation through REDD+ activities, including: a) zonification and definition of emission evaluation limits for the project; b) verification of the baseline for avoided emissions; c) monitoring and verification and reduced emissions; and d) definition of mechanisms and instruments for the equitable and just distribution of benefits.</li> <li>- SLM based on silvopastoral systems and ecological rehabilitation of 800 ha of dry forest in three (3) watersheds, using the planting and propagation of native species from community nurseries and native regeneration in such a way that contributes to increasing landscape-level connectivity to conserve water resources and reduce desertification processes.</li> </ul>	<ol style="list-style-type: none"> <li>1. Carbon storage (Avoided GHG emissions): Reduction of emissions from deforestation (average deforestation rate of 1.27%/year)<sup>4</sup> of 44,898 ha: 652,890 tCO<sub>2</sub> during a 5-year period (# of ha x annual deforestation rate ha/year x 60.0 tC ha/year<sup>[5]</sup> x 3.67 CO<sub>2</sub> conversion factor).</li> <li>2. Water flow in three watersheds (to be defined during the PPG phase).</li> <li>3. 23,698 ha of dry forest connected, forming conservation nuclei (i.e., groups of areas resulting from the connection of dry forest patches and the HMP used to connect them).</li> <li>4. Improved habitat for BD: Number of species of biological groups (birds, plants, and ground ants) remains stable in the mosaic of landscapes among dry forests and agricultural areas. Demographic structure and recruitment rates of individuals of species of biological groups (birds, plants, and ground ants) remain stable in the dry forest patches.</li> </ol>

In the short term, the global benefits of the project are: a) 72,000 ha of dry forest preserved through 17 regional and local PAs; b) the ecological rehabilitation of 1,600 ha of dry forest that contribute to increasing landscape-level connectivity and conserve water resources, and which form conservation nuclei of 123,596 ha with the vulnerable areas that will be used in REDD+ projects; and c) avoided GHG emissions from dry forests of close to 1,144,266 tCO<sub>2</sub> in the Caribbean region and 652,890 tCO<sub>2</sub> in the Inter-Andean Valley, during a 5-year period.

<sup>2</sup> Average deforestation rate for Caribbean Region of Colombia (Source: IDEAM, 2011. Cartilla de la tasa de deforestación para Colombia. 23 p.). It was assumed the rate of deforestation for year 1 will remain equal to the baseline (1.9%) and that it will decrease by 0.02% each year for the remaining 4 years (average deforestation rate = 1.86 %). Soon IDEAM will publish a new deforestation rate for each life zones according with Holdridge's classification system. However, deforestation rates will be re-estimated and validated through the project.

<sup>3</sup> Based on Kanninen, M. 2002. *Op. cit.*

<sup>4</sup> Average deforestation rate for Caribbean Region of Colombia (Source: IDEAM, 2011. Cartilla de la tasa de deforestación para Colombia. 23 p.). It was assumed the rate of deforestation for year 1 will remain equal to the baseline (1.9%) and that it will decrease by 0.02% each year for the remaining 4 years (average deforestation rate = 1.86 %). Soon IDEAM will publish a new deforestation rate for each life zones according with Holdridge's classification system. However, deforestation rates will be re-estimated and validated through the project.

<sup>5</sup> Based on Kanninen, M. 2002. *Op. cit.*

**B.3. SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT INCLUDING GENDER DIMENSIONS:** The local communities living within the dry ecosystems of the Caribbean region and the Inter-Andean Valley of the Magdalena River are mostly peasants with few economic resources. In general terms, they use the forest to collect firewood and to a lesser extent to extract timber, many times illegally. Regarding the socioeconomic conditions, the dry areas of Colombia present high levels of poverty; the Index of Unsatisfied Basic Needs (NBI) shows a rating above 39% for the departments in the Inter-Andean Valley Region (Tolima and Huila), while for the Caribbean region the NBI fluctuates from 31% in Atlántico to 65% in La Guajira, Sucre, and Córdoba (Guardela and Barrios, 2006). The project will benefit these communities through: a) the equitable distribution of benefits from earnings generated from the sale of forest credits in carbon markets (international or the Fundación Natura fund) or international funds, potentially increasing the net earnings by US \$4 to 5 per tCO<sub>2</sub> eq/year); b) improving the skills of local community members (including women) by training them in the principles and practices of REDD+, SLM based on ecological rehabilitation, and BD conservation; c) ecological rehabilitation activities (implementation of HMP in private lands), as they may improve characteristics of production systems (e.g., cattle ranching); and d) the implementation of five community plant nurseries, from which peasant women can draw an important source of work and income. To ensure that the issues of gender are fully incorporated into the different project components, a gender specialist will be contracted during the PPG phase to develop these themes. By protecting and improving forest cover and promoting more suitable land use practices to reduce erosion, the project will help to reduce the vulnerability of the local communities to natural disasters that are associated with the occurrence of extreme climatic events in deforested areas and degraded ecosystems.

The project's focus on local and regional PAs allows more flexibility in defining protection categories for the declared areas, which will help avoiding conflicts related to local communities' use of and access to natural resources. Furthermore, type V and VI PAs according to IUCN classifications or civil society reservations have been chosen as options for the project, since these PA types support the sustainable use of resources and the protection of related cultural values. These PA type choices will permit to reduce the risk for potential conflicts with local communities. These categories of PAs are recognized by the National System of Protected Areas of Colombia (SINAP). Furthermore, the project aims at strengthening the capacities of local communities in terms of generating co-management agreements, so that many, if not all, (depending on the specific conditions in each project region) of the projected regions will be directly administered by local communities, with support by local or regional authorities also strengthened by the project. This could improve the local communities' appropriation of the territories, but it might even have a positive impact on the income levels of these communities, as a result of activities such as ecotourism, which indirectly might be enhanced as a result of activities carried out by the project.

**B.4. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS AND MEASURES THAT ADDRESS THESE RISKS:**

Risk		Risk Mitigation Strategy
Uncertainty regarding future support of the project by government officials (national, regional, and local).	L	In Colombia the turnover of technical and operational staff in government institutions is low, and as such this type of career administrative officials will remain active members of the project (in the national, regional, and local institutions), despite the potential changes at the directional or top levels of the institutions. They will be duly informed of the processes that are put into place and the project will not experience major risk in terms of institutional support. However, it should be recognized that Colombia has presidential elections every 4 years, the next elections being held in 2014, and the election of new mayors and new directors of CARs in 2015; in this regard, and to reinforce the internal dynamic of the government institutions, the UNDP country office will systematize and inform the new officials about the project's objectives and benefits. To maintain the interest of the new officials in the project, the UNDP country office will keep them informed about progress, results, and products through the use of different resources (e.g., steering committees, processes for transferring knowledge and learning, field visits, etc.).
Limited capacity in the government (national, regional, and local) for SFM/REDD+.	M/L	The project will mitigate the risk associated with strengthening forest governance, especially at the municipal (local) level, including the development of appropriate regulatory frameworks and capacities for command and control. In addition, the project will provide training in REDD+, SLM, and BD conservation, while at the same time generating incentives to facilitate the adoption of these activities. Moreover, in Colombia the strengthening of forest governance processes has made important progress; thus, the incorporation of this theme as a fundamental part of the forest management activities to be developed in Colombia will be considered when updating the National Forestry Development Plan (2011). In addition, the effort to control illegal logging has been strengthened and made significant progress; as such, the country has a national forest platform and a pact for legal timber. Pilot projects have been initiated to establish online permits for the transportation of timber, so that the authorities can quickly identify illegal cargoes of timber and follow the appropriate legal procedures.
Uncertainty related to land ownership rights and the use of forest resources.	M/H	To reduce the risk related to a lack of clarity in terms of land ownership rights (an aspect that is particularly important for the REDD+ pilot projects and the establishment of HMP) and the use of forest resources, the project will clarify land ownership at the beginning of the project and target REDD+ activities only in dry forests where land tenure can be demonstrated with title deeds. The Caribbean region has experienced more problems related to uncertainty of land ownership than the Inter-Andean Valley of the Magdalena River.
Degradation and damage of the dry ecosystems as a result of the occurrence of extreme climatic events.	M	The risks related to the variability of climate change may include floods, landslides, and prolonged droughts. This situation may cause changes to the biotic communities, loss of soil, and increased risk to the local communities. The project's activities with regard to REDD+, SLM, and BD conservation include the maintenance and improvement of forest coverage, which will facilitate the maintenance and rehabilitation of the native forest cover, and thereby increase its resilience to the potential impacts of climate change and variability.

## B.5. KEY STAKEHOLDERS INVOLVED IN THE PROJECT:

Stakeholders	Project Implementation Role
MADS	MADS is the GEF focal point. The agency is principally charged with developing national policy related to the environment and renewable natural resources, and establishing the rules and criteria for environmental planning for land use to ensure the sustainable use of renewable natural resources and the environment. MADS will be charged with guiding activities related to BD conservation, reduced deforestation of the dry forests, and reduction of the desertification process through the implementation of national plans and policies related to conservation of BD and water resources, as well as the fight against desertification and drought.
IDEAM	IDEAM is the institute charged with gathering, analyzing, studying, processing, and dissemination basic information about the hydrology, hydrogeology, and basic geography of biophysical characteristics, geomorphology, soils, and plant and tree cover for the management and use of the country's biophysical resources. IDEAM will be charged with the establishment and operation of national meteorological and hydrological infrastructure to provide information, predictions, warning, and support services to the community. In addition, IDEAM will monitor the country's biophysical resources, particularly with regard to contamination and degradation of these resources, which are necessary for decision-making by environmental authorities. The institute will be charged with developing and facilitating access to technical support, methodology, and services for the REDD+ and SLM activities.
IAvH	The IAvH is the institute charged with scientific and applied research of biotic and hydrobiological resources in the country's continental territory. The institute will be in charge of developing and facilitating access to technical support, methodology, and services for the BD conservation and SLM activities.
Regional Autonomous Corporations (CARs)	CORTOLIMA, CAM, COROQUAJIRA, CSB, CVS, CORALINA, and CRA. These CARs are the regional environmental authorities with the following characteristics: 1) they are public corporate entities created by law; 2) composed of territorial entities that due to their characteristics constitute geographically the same ecosystem or form a geopolitical, biogeographic, or hydrogeographic unit; 3) endowed with administrative and financial autonomy, its own resources, and legal status; 4) charged by law to administrate within their area of jurisdiction the environment and renewable natural resources and aim towards achieving sustainable development according the legal and policy terms of the MADS. The CARs are charged with the regional implementation of national instruments of public policy. In addition, they are charged with advancing the project's field activities (jointly with the community) and for technology transfer (with support from IDEAM and the MADS) to the municipalities for the incorporation into the POT and MDP of the principles of BD conservation, REDD+, and SLM. They will also be direct beneficiaries of the project in terms of training in REDD+, SLM, and BD conservation themes. They are qualified to declare regional PAs.
Municipalities	The municipalities are qualified to declare defined municipal PAs. They will be direct beneficiaries of the project in terms of training in REDD+, SLM, and BD conservation themes. They are also qualified to declare local PAs.
Local communities	The local communities are charged with field implementation (together with the CARs) of the BD conservation, SFM/REDD+, and SLM pilot projects. In addition, they will be direct beneficiaries of the project in terms of training in SFM/REDD+, SLM, and BD conservation topics.
Private sectors	The private sectors could be represented through their involvement in producers' associations to promote, strengthen, and lend sustainability to the project activities (partner agencies are to be defined).
NGOs	The NGOs will promote the conservation and sustainable use of BD. Many of their mission activities are consistent with the project objectives (partner agencies are to be defined). The following local CSOs have been identified as potential local partners for the planning and implementation of the project: Fundación Ecosistemas Secos de Colombia, Fundación Herencia Ambiental Caribe (Atlántico), Fundación Titi (Atlántico), Fundación CEUDES (Tolima), Fundación Manos Unidas (Tolima), Fundación Vida Natural (Barranquilla), Corporación Ambiental Cuchiyuyo (Huila), Grupo de estudios ecológicos OIKOS (Huila), Fundación El Curibano (Huila), among others. These organizations, apart from their experience of the conservation and sustainable use and recovery of dry ecosystems, have experience of working with vulnerable communities, local governments and environmental authorities, which might help the project reaching its goals.

**B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:** This project will complement the activities that are being developed by the Regional System of Protected Areas of the Colombian Caribbean (SIRAP-Caribe), which is the “set of private and public PAs in their different management categories, which are interrelated with specific conservation objectives that are encountered in a determined region of the country.” The creation of SIRAP-Caribe is an effective strategy to ensure the development of the region, conserving its genetic capability, resources, and ecosystems that offer countless ecosystem services, and guaranteeing the survival of the cultures and the future of the region. This project will be articulated with the initiatives that the SIRAP develops to increase its regional appropriation, incorporating the lessons learned with respect to the work of declaring and managing PAs and in the themes of ecological rehabilitation and sustainable practices. In addition, lessons learned from the Tití Project will be incorporated, which although it is focused on the preservation of the *Saguinus oedipus* species, has been advancing interesting actions for the ecological rehabilitation of the dry ecosystems where it lives. Project Tití activities will contribute to the development of this project through provision of information resulting from scientific research on the structure, composition, functioning and dynamics of dry tropical forests, but also through lessons learned from working with local communities, especially in the Caribbean region, in biodiversity conservation and sustainable land management. In addition, the project for the recuperation of the Guájaro Reservoir, carried out by the Departmental Government of Atlántico with support provided by the French Government, also provides lessons learned about management processes of the areas undergoing desertification. The activities of this project will be articulated with the FAO-UAESPNN project, which seeks to generate ecological connectivity from the Montes de María region in the Department of Sucre to the Corales del Rosario National Natural Park (PNN). This project is currently in the formulation phase. In addition, the development of the agreement between MADS and IDEAM to perform the national assessment of the status of land resource and a proposal for the integrated environmental management of the land resource in Colombia (policy guidelines; national monitoring and monitoring of land degradation in Colombia and zonification of erosion in Colombia), will allow the availability of information to guide the activities of the project in its two components.

Furthermore, this project will support, both on a local and a regional level, the development of REDD+ reference levels and a monitoring system as part of the R-PP, which include monitoring on a regional level developed by the national meteorological authority, IDEAM, and a still unknown number of local projects. Synergy could especially be found with local R-PP projects in the Caribbean and Andean regions (inter-Andean valley of river Magdalena).

Last, this project will articulate its activities with the IADB-TNC projects “Sustainable management and conservation of biodiversity of the Magdalena river basin” and the UNFCCC Adaptation Fund Project “Reducing risk and vulnerability to climate change in the region of La Depresión Momposina in Colombia,” both of which are currently in the formulation phase. The first seeks to contribute to BD conservation and the rehabilitation of ecosystems to support and maintain the ecosystem services through conservation activities in priority habitats, the design of tools and methodologies to improve the management of aquatic BD, improving governance and strengthening local capacity. The second has as its objective to reduce the vulnerability of local communities and wetlands in the La Depresión Momposina region to risks associated with flooding and drought, which are products of variability and climate change. Finally, the project will articulate its activities with the UNDP project Integrated Risk Management, which is being developed in the Caribbean and has as its objective to work in themes of climate change and risk management at the institutional level with the national environmental system and the risk management system in the entire Caribbean region.

**DESCRIBE THE GEF AGENCY’S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:** The comparative advantage of the UNDP for GEF lies in its global network of Country Offices, its experience in the formulation of integral development policies, institutional strengthening, and the participation of the non-governmental sector and communities, as specified in the document Comparative Advantage of the GEF Agencies (GEF/C.31/5rev.1). UNDP currently supports SFM and REDD+ activities in over 25 countries around the world. Under the UN-REDD, UNDP is currently working in 5 countries in LAC (Bolivia, Panama, Ecuador, Paraguay, and Mexico) on SFM and REDD+ readiness projects with a total investment of over US \$30 million. These projects focus on the following activities: a) Developing National REDD+ strategies and pilot projects; b) developing/Strengthening Measuring, Reporting and Verification (MRV) and Evaluation mechanisms; c) promoting the participation of local stakeholders, including Indigenous Peoples in REDD+ readiness activities; d) strengthening governance mechanisms for REDD+; e) ensuring that REDD+ schemes derive SFM and other co-benefits; f) ensuring the equitable distribution of REDD+ benefits; and e) supporting mainstreaming of REDD+ principles into policies and laws of relevant sectors. Furthermore, Colombia is a UN-REDD partner and while no funding is currently available to finance REDD+ readiness activities in this country, the UNDP Country Office has been participating on national discussions regarding the REDD+ readiness process for Colombia.

**C.1. INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT:** UNDP will contribute US \$1,015,000 in cash.

**C.2. HOW DOES THE PROJECT FIT INTO THE GEF AGENCY’S PROGRAM AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:** The project is aligned with the development action framework of the United Nations Development Assistance Framework (UNDAF) for Colombia 2008 - 2012. More specifically, the project is consistent with the UNDAF Outcome 2, which has as a relevant Country Programme outcome: “National capacity consolidated to promote environmental sustainability, management of disaster risks and sustainable planning,” with the related output “Public institutions and organizations strengthen their capacity to formulate and implement environmental management programmes and initiatives that guarantee the supply and maintenance of environmental goods and services (with emphasis on conservation, restoring and sustainable use of strategic ecosystems).” The UNDP in Colombia works to guarantee the integration of energy and environmental and natural resource considerations into the strategies of poverty reduction and sustainable development. Also, it gives attention to all cross-cutting issues such as environmental governance, climate change, gender, and links between sustainable environmental management and poverty reduction. It aims for the inclusion of the local approach in development strategies. In order to do so, UNDP focuses its work on the following strategic areas: i) development of frameworks and strategies for sustainable development; ii) adaptation and mitigation of climate change and effective governance of water; iii) access to sustainable energy; iv) sustainable management of soil and land against desertification and degradation; v) conservation and sustainable use of biodiversity; vi) planning of national policy against the degradation of the ozone layer; and vii) persistent organic pollutants.

This project will be under the supervision of the Regional Technical Advisor for GEF and UN-REDD projects in LAC who has a Ph.D. and M.Sc. in Environmental Policy and Economics with emphasis on the economic valuation of forests. The UNDP country office will assign two core staff members to manage and supervise project implementation. The project will be managed by the Environment and Energy Programme Officer of the Poverty Reduction and Sustainable Development Unit of UNDP Colombia, who has two MSc in Rural Development and Environmental Assessment and Management and ten years of experience in SFM, environmental management, and legal/policy issues and a senior Programme Support Associate. Support will be provided by the Head of Poverty reduction and Sustainable Development Area (25 years of working experience at UNDP), the project will be also supported by the programme officer of integrated risk management with work experience in the Caribbean region; and project monitoring and evaluation will be led by UNDP’s Head of Monitoring and Evaluation Unit. Implementation support on


Procurement and Finance will be provided by 5 staff members: Finance Officer, Procurement Officer, Human Resources Officer and two senior associates.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

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

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Adriana Soto	Vice Minister	Environment	

**B. GEF AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	Date (MM/DD/YYYY)	Project Contact Person	Telephone	Email Address
Yannick Glemarec, UNDP/GEF Executive Coordinator		December 22, 2011	Santiago Carrizosa, Regional Technical Advisor, EBD	+507 302-4510	<a href="mailto:Santiago.carrizosa@undp.org">Santiago.carrizosa@undp.org</a>