



**United Nations Development Programme
Country: Nicaragua
PROJECT DOCUMENT**

Strengthening the resilience of multiple-use protected areas to deliver multiple global environmental benefits

UNDAF Outcome(s):	Outcome 3: Environmental protection and risk management for sustainable human development.
UNDP Strategic Plan Outcome:	Outcome 1: Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded.
UNDP Strategic Plan Output:	Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals, and waste.
Expected CP Outcome(s):	Capacity development for sustainable human development.
Expected CPAP Output(s):	Articulation mechanisms of territorial and national sustainable human development are designed in the areas of territorial, environmental, risk management, mitigation and adaptation to climate change, human settlements, and productive alternatives system.
Executing Entity/Implementing Partner:	Ministry of Environment and Natural Resources (MARENA)
Implementing Entity/Responsible Partners:	United Nations Development Program (UNDP)

Brief Description

The project is aligned with the implementation of the Christian, Socialist, and Solidarity model of the Government of Reconciliation and National Unity of Nicaragua, as it contributes to the implementation of the National Human Development Plan 2012-2016 and its principle for the defense and environmental protection of natural resources, in order to promote the conservation of biodiversity and coexistence, and monitoring and sustainable use of natural resources focusing on protected areas and their surrounding communities. This project will strengthen the Model of Governance of the President/Commander Daniel Ortega S. regarding the Preservation of the Mother Land and its Flora and Fauna; all of the Biodiversity in the Protected Areas of the Pacific Region of Nicaragua, Central Region, with a direct focus on 12 protected areas covering 178,441 hectares of biological corridors of dry tropical, humid, semi-humid, and cloud forest. In all of the protected areas the Roles of Families, Youth, Women, Producers, Family Councils of 15 Municipalities located in the following five departments will be strengthened: Chinandega, Boaco, Chontales, Jinotega, and Rivas. The project serves to strengthen the Alliances for Prosperity and the Model of Direct Presence in the Communities with 15 Mayoral Offices and National Institutions such as the National Forestry Institute (INAFOR), National Tourism Institute (INTUR), Ministry of Families, Community, Co-operatives, and the Associative Economy (MEFCCA), and Ministry of Environment and Natural Resources (MARENA). This will be achieved through a 5-year multifocal strategy that includes: a) improved management effectiveness of twelve (12) existing MUPAs; b) reduced threats in 12 MUPAs (non-sustainable agriculture and cattle-ranching, illegal logging, trade of vulnerable and endangered species, and forest fires) across an area of 178,441.93 hectares (ha); c) reduced vulnerability of threatened biodiversity, including 104,233 ha of dry forest habitat and 21,436 ha of humid forest habitat secured and stable numbers of key species of biological groups (mammals, birds, and plants) in the prioritized project sites; d) improved ecosystem structure and functionality of tropical dry and humid forests strengthened through the consolidation of four biological corridors, including enhanced connectivity between remnants of endangered tropical forest habitat outside of MUPAs, stable populations of indicator species, restored carbon stocks of threatened tropical dry forest (83,421 tCO₂-eq sequestered) and tropical humid forest (110,789 tCO₂-eq sequestered), and sustained water flows in 10 watersheds; e) reduction in humid forest deforestation (137,127 tCO₂-eq avoided emissions over a 5-year period); and f) an increase in the management and technical capacity of 270 municipal officials and local communities for sustainable forest and land management in dry and humid forest landscapes.

Programme Period:	2013-2017
Atlas Award ID:	00083775
Project ID:	00092085
PIMS #	5125
Start date:	March 2015
End date:	March 2020
Management Arrangements	NIM
PAC Meeting Date	_____

Total resources required	26,112,230
<i>Total allocated resources:</i>	
– GEF	6,192,512
– UNDP	285,000
– MARENA	2,287,359
– MEFCCA	655,000
<i>In-kind contributions:</i>	
– INAFOR	2,500,000
– INTUR	11,200,000
– MEFCCA	655,000
– MARENA	2,287,359
– UNDP	50,000

Agreed by (Government): _____

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner): _____

Date/Month/Year

Agreed by (UNDP): _____

Date/Month/Year

LIST OF ACRONYMS

AFOLU	Agriculture, Forestry, and Other Land Use
ANA	National Water Authority
APR	Annual Project Report
AUD	Avoided Unplanned Deforestation
AWP	Annual Work Plan
BCGA	Biodiversity Conservation Gap Analysis
BMPs	Best management practices
CATHALAC	Water Center for the Humid Tropics of Latin America and the Caribbean
CATIE	Center for Tropical Agricultural Research and Higher Education
CBD	Convention on Biological Diversity
CCM	Climate Change Mitigation
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CO ₂	Carbon dioxide
CPAP	Country Programme Action Plan
CSO	Civil Society Organizations
ENDE	National Strategy for Avoided Deforestation
ENSO	El Niño Southern Oscillation
ERPA	Emission Reduction Purchase Agreement
ERSP	Environmental Rehabilitation Systems Program
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FONADEFO	National Fund for Forest Development
FPIC	Free, Prior, and Informed Consent
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIS	Geographic Information System
GIZ	German Agency for Technical Cooperation
GMS	General Management Support
GoN	Government of Nicaragua
GPC	General Project Coordinator
GRAAN	Autonomous Regional Government of the North Atlantic
GRAAS	Autonomous Regional Government of the South Atlantic
ha	Hectares
HDI	Human Development Index
IADB	Inter-American Development Bank
INAFOR	National Forestry Institute
INETER	Nicaraguan Institute of Territorial Studies
INTA	Nicaraguan Institute for Farming Technology
INTUR	National Tourism Institute
IR	Inception Report
IUCN	International Union for the Conservation of Nature
IW	Inception Workshop
JNR	Jurisdictional and Nested REDD+
km ²	Square Kilometers
LD	Land Degradation
LU/LC	Land Use/Land Cover
LULUCF	Land and Use, Land-Use Change and Forestry
M&E	Monitoring and Evaluation
MAGFOR	Farming and Forestry Ministry
MARENA	Ministry of Environment and Natural Resources
masl	Meters above sea level

MASRENACE	Program for the sustainable management of natural resources and promotion of entrepreneurial capacities
MEFCCA	Ministry of Families, Community, Co-operatives, and the Associative Economy
MRV	Monitoring, Reporting, and Verification
MUPA	Multiple-use Protected Area
NAPCDD	National Action Plan to Combat Desertification and Drought
NBS	National Biodiversity Strategy
NDF	Nordic Development Fund
NGO	Non-Governmental Organization
NHDP	National Human Development Plan
NIM	National Implementation Modality
NR	Natural Reserve
NSPA	National System of Protected Areas
PA	Protected Area
PANCC	National Climate Change Action Plan
PDD	Project Design Document
PES	Payments for Environmental Services
PIF	Project Identification Form
PIMCHAS	Integrated management of watersheds, water and sanitation project
PIR	Project Implementation Review
PIU	Project Implementation Unit
PMU	Project Management Unit
PPG	Project Preparation Grant
PSC	Project Steering Committee
RBLAC	UNDP Regional Bureau
RCU	Regional Coordination Unit
REDD	Reducing Emissions from Deforestation and Forest Degradation
R-PP	Readiness Preparation Proposal
ROAR	Results-Oriented Annual Report
SBAA	Standard Basic Assistance Agreement
SCCF	Special Climate Change Fund
SFM	Sustainable Forest Management
SINIA	National Environmental Information System
SLM	Sustainable Land Management
STAR	System for Transparent Allocation of Resources
TC	Tripartite Committee
ToR	Terms of Reference
TPC	Technical Project Coordinator
UCA	Universidad Centroamericana of Nicaragua
UNA	National Agrarian University
UNAN	National Autonomous University of Nicaragua
UNCCD	United Nations Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNDP CO	United Nations Development Programme Country Office
UNFCCC	United Nations Framework Convention on Climate Change
USD	U.S. Dollars
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit
VER	Verified emissions reductions

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. SITUATION ANALYSIS.....	6
1.1. Context and global significance.....	6
1.2. Deforestation, land degradation, and biodiversity threats, impacts, and root causes.....	14
1.3. Long-term solution.....	20
1.4. Barriers analysis.....	21
1.5. Stakeholder analysis.....	22
1.6. Baseline analysis.....	24
2. STRATEGY.....	25
2.1. Project rationale and policy conformity.....	26
2.2. Country ownership: Country eligibility and country drivenness.....	27
2.3. Design principles and strategic considerations.....	28
2.4. Project objective, outcomes, and outputs/activities.....	31
2.5. Key indicators, risks, and assumptions.....	48
2.6. Financial modality.....	52
2.7. Cost-effectiveness.....	53
2.8. Sustainability.....	54
2.9. Replicability.....	56
3. STRATEGIC RESULTS FRAMEWORK AND GEF INCREMENT.....	57
3.1. Incremental Cost Analysis.....	57
3.2. Project Results Framework.....	62
4. TOTAL BUDGET AND WORKPLAN.....	69
5. MANAGEMENT ARRANGEMENTS.....	76
5.1. UNDP Support Services.....	76
5.2. Collaborative arrangements with related projects.....	77
5.3. Inputs to be provided by all partners.....	77
5.4. Audit arrangements.....	77
5.5. Agreement on intellectual property rights and use of logo on the project's deliverables.....	77
5.6. Roles and responsibilities of the parties involved in project management.....	78
6. MONITORING FRAMEWORK AND EVALUATION.....	79
7. LEGAL CONTEXT.....	85
8. ANNEXES.....	87
8.1. Risk Analysis.....	87
8.2. Terms of Reference for Key Project Staff.....	90
8.3. Capacity Assessment.....	93
8.4. Stakeholder Involvement Plan.....	95
8.5. Tracking Tool.....	98
8.6. Prioritized Biological Corridors.....	99
8.7. VCS methodology VM0015.....	101
8.8. Stakeholder Capacity Development Assessment.....	103

1. SITUATION ANALYSIS

1.1. Context and global significance

Environmental context

1. Nicaragua is the largest country in Central America, with an area of 130,370 square kilometers (km²). Home to most of the Central American Volcanic Arc, the geographical variation in the country, from the Pacific Lowlands to the Amerrique Mountains and the Mosquito Coast along the Atlantic Lowlands, has contributed to Nicaragua's status as a hotspot for biodiversity. Nicaragua has 68 types of ecosystems and plant forms, which is equivalent to 60% of the ecosystems in the Central American region. Nicaragua has more than 6,014 identified plant species, 105 (1.75%) of which are endemic; and 14,471 species of wildlife (mollusks, arthropods, fish, reptiles, amphibians, and mammals), 102 (1.75%) of which are endemic. In addition, the country provides habitat to 704 resident and migratory bird species.¹

2. Protected areas (PAs) are an essential component of the strategies for biodiversity conservation in Nicaragua. A total of 74 areas comprise the National System of Protected Areas (NSPA), which is administered by the Ministry of the Environment and Natural Resources (MARENA) and encompasses an area of 2,340,617.23 hectares (ha). Sixty-six (66) of these areas (comprising 2,103,626.61 ha) are terrestrial and eight are marine-coastal (comprising 236,990.62 ha). The PAs are classified into nine management categories and cover 18% of the country's territory. In addition, Nicaragua has four reserves that are recognized by the UNESCO Man and the Biosphere Programme (MAB), including the Bosawás Biosphere Reserve, as well as nine wetlands that are of global importance for aquatic and migratory birds and are recognized and named by the RAMSAR Convention; seven of these wetlands are found within the boundaries of legally declared PAs. Sixty-three (63) private natural reserves (comprising 9,879.23 ha) and 23 municipal ecological parks (comprising 50,711.20 ha) are also part of NSPA² and make an important contribution towards the conservation of biodiversity. In 2013, MARENA established six Water Reserve Zones encompassing an area of 6,927.51 ha; these zones are centers of biological and cultural wealth for the country and are also important resources for the production of water fit for human consumption. The PAs and forested areas play a fundamental role hydrometeorologically in risk reduction by providing increased stability for natural cycles and processes (mainly hydrological), as most of the country's upper watersheds are included in PAs as recognized by Decree 42-91, which declares all mountains, volcanoes, and river headwaters as PAs. Governance of the PAs is administered through the MARENA's Local Territorial Delegations.

3. There are 28 documented forest types in Nicaragua. Among these, Nicaragua's tropical dry forests and tropical humid forests are critical for the delivery of multiple environmental benefits to the country. Nicaragua's tropical dry forests are home to globally important plant species such as the oak (*Quercus oleoides*), the gourd (*Crescentia alata*), the boxwood (*Phyllostylon brasiliensis*), Holywood Lignum-vita (*Guaiacum sanctum*), and the Brazilwood (*Haematoxylum brasiletto*). Wildlife species include endangered species such as the spider monkey (*Ateles geoffroyi*); various cats including *Felis onca*, *F. concolor*, *F. pardalis*, *F. wiedi*, and *F. yaguaroundi*; the Baird's tapir (*Tapirus bairdii*); and the Mexican anteater (*Tamandua mexicana*). Notable bird species are the White-throated Magpie-Jay (*Calocitta formosa*) and the Turquoise-browed Motmot (*Eumomota superciliosa*), species that are limited to the tropical dry forest, as well as a wide variety of migratory birds such as *Chlidonias niger*, *Tyrannus tyrannus*, *Petrochelidon pyrrhonota*, *Hylocichla mustelina*, and *Vireo olivaceu*. Tropical dry forests

¹ MARENA. 2010. IV Informe Nacional al Convenio sobre la Diversidad Biológica.

² MARENA. 2010. Available at <http://congresomesoamericano.conanp.gob.mx/assets/files/INFORME%20DEL%20SINAP%20-%20NICARAGUA.pdf>. Accessed 00/2014.

provide multiple environment services such as maintaining soil fertility and the recycling of nutrients; providing habitat for biodiversity that are adapted to low and seasonal water availability; water regulation and storage critical for agriculture, firewood, timber; and flood control during the rainy season. The tropical dry forest ecosystem is one of the least represented in the NSPA. According to the Biodiversity Conservation Gap Analysis (BCGA) of Nicaragua³, only 123,280 ha are contained within PAs and the protection of an additional 124,105 ha of tropical dry forest is required to comply with national conservation goals.

4. The tropical humid forests of north-central Nicaragua are globally important since they are present within the area where the flora and fauna of North and South America mix; these forests are valued as one of 11 priority conservation areas in Central America due to their high level of biodiversity (370 species of trees and shrubs; 278 species of birds, 36 of which are migratory; 85 species of mammals; and 15 species of poisonous snakes). These forests are dominated by *Dialium guianensis*, *Ampelocera hottlei*, and *Pseudolmedia oxyphyllaria*; pre-montane tropical very humid forest, which includes species such as *Dialium guianensis*, *Pouroma bicolor*, and *Ocotea paulli*; and low montane very humid forest.⁴ Among the bird species present is the harpy eagle (*Harpia harpyja*) and the scarlet macaw (*Ara macao*). Mammals include the cougar (*Felis concolor*), the jaguar (*Felis onca*), the two-toed sloth (*Choloepus hoffmanni*), and the tapir (*Tapirus bairdii*), the latter being an endangered species. In addition to providing habitat for biodiversity, these forests also play a central role as a climate regulator for the region, are important reservoirs of carbon, and provide multiple goods and services to the people who inhabit them, including food, timber, control of erosion and maintenance of soil productivity, and water regulation.

Areas prioritized by the Project

5. The project will deliver multiple global environmental benefits through sustainable forest and land management within multiple-use PAs (MUPAs) and will serve to consolidate four biological corridors (Chinandenga–Rivas Dry Forest Corridor, Cerro Cumaica Cerro Alegre–Mombachito Cerro La Vieja–Sierra Amerrisque Biological Corridor, Lake Nicaragua Islands Corridor, and Peñas Blancas–Kilambé Corridor) (see Tables 1 and 2 and Figure 1).

Table 1 – Biological corridors of the Project.

Corridor Name	Ecosystems	Location	Ecosystems status	Protected areas
Dry Forest Corridor	<ul style="list-style-type: none"> ▪ Tropical dry forest ▪ Transitional humid forest ▪ Mangroves, coastal lagoons, and beaches (coastal areas) 	Chinandega and Rivas departments (Pacific region)	<ul style="list-style-type: none"> ▪ Large areas of degradation ▪ Some areas with natural regeneration ▪ Some areas in need of restoration 	<ul style="list-style-type: none"> ▪ Volcán Cosigüina Natural Reserve (NR) ▪ Estero Padre Ramos NR ▪ Estero Real NR ▪ Apacunca Genetic Reserve
Lake Nicaragua Island Corridor	<ul style="list-style-type: none"> ▪ Humid and cloud forest landscapes ▪ Gallery and dry forests ▪ Wetland ecosystems 	Ometepe Island Biosphere Reserve, Lake Nicaragua	<ul style="list-style-type: none"> ▪ Dry forests and wetlands threatened by agricultural expansion and habitat fragmentation and degradation ▪ Water pollution ▪ Poaching of wildlife and timber extraction ▪ Uncontrolled tourism and the development of coastal properties 	<ul style="list-style-type: none"> ▪ Volcán Concepción NR ▪ Volcán Maderas NR ▪ Istiam Peña Inculca Wetland Wildlife Refuge
Cerro Cumaica	<ul style="list-style-type: none"> ▪ Tropical dry forest 	Boaco and	<ul style="list-style-type: none"> ▪ PAs have low ecosystem 	<ul style="list-style-type: none"> ▪ Cerro Cumaica–

³ MARENA. 2010. Estudio de Ecosistemas y Biodiversidad de Nicaragua y su representatividad en el SINAP. Primera Edición. Managua, Nicaragua.

⁴ Source: MARENA, <http://www.marena.gob.ni>, accessed 07/14.

Cerro Alegre– Mombachito Cerro La Vieja– Sierra Amerrisque Biological Corridor	<ul style="list-style-type: none"> Sub-humid forest 	Chontales departments (central region)	coverage and are fragmented <ul style="list-style-type: none"> Some areas in need of restoration Unstable/steep slope areas vulnerable to landslides 	Cerro Alegre NR <ul style="list-style-type: none"> Cerro Mombachito– La Vieja NR Sierra Amerrisque NR
Peñas Blancas– Kilambé Corridor	<ul style="list-style-type: none"> Tropical humid forest Sub-tropical humid forest Tropical montane forest 	Jinotega department (north- central region)	<ul style="list-style-type: none"> Deforestation Agriculture and cattle ranching 	<ul style="list-style-type: none"> Macizos de Peñas Blancas NR Cerro Kilambé NR

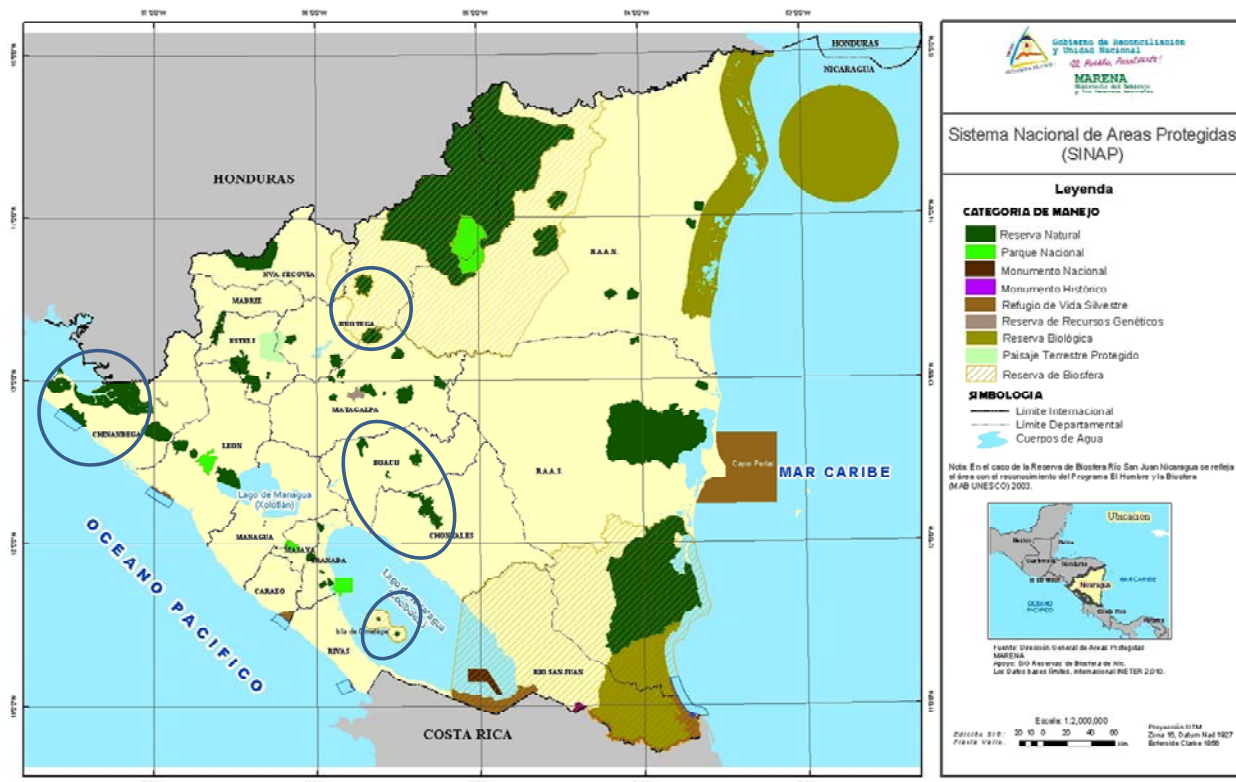


Figure 1 – Location of project sites.

Table 2 – Protected areas prioritized for this project.

Protected Area	Department	Municipality	Gazzeted	Area (ha)
<i>Dry Forest Corridor</i>				
1. Volcán Cosigüina NR	Chinandega	El Viejo	13-20	12,420.00
2. Estero Padre Ramos NR	Chinandega	El Viejo	13-20	22,125.25
3. Estero Real NR	Chinandega	Chinandega, El Viejo, Somotillo, and Puerto Morazán	13-20	84,759.82
4. Apacunca Genetic Reserve	Chinandega	Villa Nueva and Somotillo	Law 217	1,572.86

<i>Cerro Cumaica Cerro Alegre–Mombachito Cerro La Vieja–Sierra Amerrisque Biological Corridor</i>				
5. Cerro Cumaica– Cerro Alegre NR	Boaco and Chontales	Boaco	42-91	5,000.00
6. Cerro Mombachito– La Vieja NR	Boaco and Chontales	Chontales	42-91	940.00
7. Sierra Amerrisque NR	Boaco and Chontales	Chontales	42-91	12,073.00
<i>Peñas Blancas–Kilambé Corridor</i>				
8. Macizos de Peñas Blancas NR	Jinotega and Matagalpa	Jinotega	Decree 42-91 and Law 407	11,308.00
9. Cerro Kilambé NR	Jinotega and Matagalpa	Jinotega	Decre 42-91 and Law 407	10,128.00
<i>Lake Nicaragua Island Corridor</i>				
10. Volcán Concepción NR	Rivas	Moyogalpa	02-13 /Law 833	10,168.00
11. Volcán Maderas NR	Rivas	Altagracia	02-13 /Law 833	6,180.00
12. Istiam Peña Inculta Wetland Wildlife Refuge	Rivas	Altagracia	02-13 /Law 833	1,767.00
Total				178,441.93

Socioeconomic context

6. Nicaragua has an estimated population of 5,483,447; in 2010 it was listed as 124th on the Human Development Index (HDI), with a per capita gross domestic product (GDP) of \$1,126 U.S. dollars (USD), which is considered one of the lowest in Latin America with an extreme poverty index of 18.5%. Although in recent years poverty has decreased somewhat, the number of poor people remains very high. The Gini coefficient showed improvement when it fell from 0.532 (2005) to 0.46 (2009), making it third among the countries with the best results in Latin America.

7. In Nicaragua, 40% of the economically active population is dedicated to agriculture, fishing, and livestock; therefore, income for this population is dependent on the endogenous and exogenous changes in these sectors. The agricultural system generates over 60% of exports and is the source of 32.2% of the country's employment. The farming sector contributes 19% of the GDP with a growth rate of 20.8%. The contribution of the forestry sector to the GDP during the last 6 years has decreased to a sum equal or less than 1%. Close to 32% of producers are dependent on farming for their subsistence.

8. There are three main types of property rights over land in Nicaragua: a) public lands belonging to the state and municipalities (*ejidos*); b) communal lands belonging to indigenous communities and ethnic groups; and c) private land. As indicated in the National Forest Inventory, the distribution of land ownership is: a) private possession – 55%; b) indigenous lands – 25%; c) lands belonging to the state – 13%; d) lands belonging to the municipalities – 1%; and e) land where the property status could not be determined – 4% (there were no data available for the remaining 2%). The following percentages pertain to the land that was reported as private property (or privately owned): only 10% of owners have land titles registered the Land Registry, 35% have some kind of documentation but are not registered in the Land

Registry (referred to as private/occupant), and 55% are regarded as occupants who cannot provide a property record. Most of the land of the PAs in Nicaragua is considered private property.

9. Dry lands in Nicaragua encompass an extension of 40,000 km², which is about a third of the national territory. Dry lands in this country are densely populated, hosting 80% of the country's population. The dominant ecosystems of the dry lands in Nicaragua are the tropical dry broadleaf, tropical semi-deciduous forests and scrublands, pine forests, and pine savannahs. The region's native communities depend on the services and functions of the tropical dry forest ecosystem as soil and water resources for economic development and daily subsistence. The dry region's agricultural production supports the entire country as it comprises more than 60% of the country's jobs and 55.8% of the total exports. This region produces 49% of the bean crop, 33% of corn, 100% of the nation's sorghum, and 80% of the beef production. Despite the fertility of the volcanic soils in the region, this area's severe degradation during the last decades has led to a 30 to 50% reduction in national agricultural production. Fifty-three percent (53%) of Nicaragua's municipalities are considered to be extremely poor, most of which are located in the dry lands region.

10. The forest ecosystems are considered an important resource for the rural and indigenous communities dependent on those ecosystems because of the multiple benefits (goods and services) that they generate and for their ecological functions (hydrological cycles, micro climate, water production, soil conservation, erosion control, among others); all of which are key for the tourism, agro-ecotourism, industry, transportation, energy, farming, and forest sectors. Therefore, the forests and the ecosystems they comprise are vitally important to the entire country's population.

Policy and legislative context

11. The legal framework within which the project is developed is governed by specific environmental laws and regulations and other more general and/or sectoral regulations that have an impact on the environment. Articles 60 and 102 of the Political Constitution of Nicaragua are the legal basis governing principles of law and the country's environmental policy. Article 60 states that "Nicaraguans have the right to live in a healthy environment," and that "it is the duty of the State to preserve, conserve, and save the environment and natural resources." Article 102 states "natural resources are national assets. Preservation of the environment and conservation, development, and rational exploitation of natural resources are the responsibility of the government." These Articles of the Constitution are the basis for other laws that regulate in more detail the protection and use of natural resources, including the creation of protected areas and the development of management plans. Additionally, the Constitution states in Article 177 the obligation of the State to "request and take into account the views of the municipal governments before authorizing contracts for the exploitation of natural resources located in the respective municipality."

12. The General Law of the Environment and Natural Resources (Law No. 217), which was approved in 1996 (and reforms approved by Law No. 647, 2008), establishes the rules for the conservation, protection, enhancement, and restoration of the environment and natural resources, ensuring their rational and sustainable use, according to that which is stated in the Constitution. Specific objectives of Law No. 217 include: a) prevention, regulation, and control of the causes or activities that create environmental degradation and pollution of ecosystems; b) establishing the means, methods, and opportunities for the rational use of natural resources within a National Planning Framework based on sustainable development with equity and social justice and taking into account the country's cultural diversity and respecting the rights of the autonomous regions the Atlantic Coast and Municipal Governments; c) the correct use of the physical space through land use planning considering the protection of the environment and natural resources as the basis for the development of human activities; d) strengthening the NSPA for biodiversity and other resources; and e) the rational use and management of watersheds and water systems to ensure their sustainability.

13. Following the guidelines set forth in the Constitution and Law No. 217, Nicaragua's National Environmental Policy (Decree 25-2001) is established “for the purpose of guiding the coherent actions of the public administration, at a central, regional and municipal level, as well as involve civil organizations and the Nicaraguan people in general, in order to preserve, improve and recover an environmental quality favorable to life, guaranteeing harmony between environmental management and economic growth, social equality, quality of life improvement and the sustainable preservation of the environment.”

14. Nicaragua was the first country to sign the Universal Declaration on the Common Good of Mother Earth and of Humanity (2010), which is based on the principles of protection and restoration of ecosystems, with a special focus on biodiversity. Nicaragua’s Socialist, Solidarity, and Christian model implements these principles as human well-being is dependent upon the wealth and good management of biodiversity, since it provides the basis for the functioning of ecosystems and the environmental services that provide food security to all communities in the country.

15. Nicaragua also has a National Human Development Plan 2012-2016 (NHDP), which defines the priorities in the fight against hunger and poverty. The NHDP defines as one of its principles the “sustainable development for the defense, protection, and restoration of the environment” for improving the well-being of the people, to overcome poverty, and preserve the natural patrimony. It provides the framework for the development of national policies for the sustainable development of the country and for addressing the existing environmental problems, including the mismanagement of watersheds, contamination of the soil, non-sustainable forest management, forest degradation, deforestation, climate change, and the loss of biodiversity, among others. Among its guidelines, the NHDP defines: a) the defense and environmental protection of natural resources, in order to “strengthen the mechanisms for the protection of existing protected areas” and “restoring and conserving the corridors of life” as steps toward a “comprehensive restoration of ecosystems in the country;” and b) sustainable land management (SLM), for the “proper planning of land use and space in rural and urban areas, in harmony with nature, ensuring its preservation” and promoting better agricultural practices for improving land management in agricultural areas. The NHDP also outlines the Adaptation and Mitigation Policy against Climate Change, with the objective of preparing people to reduce their vulnerability and adapt to climate change, with a priority on adapting human systems to the objective of reducing the poverty gap, as well as reducing land use change in the agricultural sector (cattle-ranching), and contributing to the energy matrix through renewable energy.

Protected areas and biodiversity

16. The Regulation of Protected Areas of Nicaragua (Decree No. 01-2007) regulates the legal guidelines related to PAs that are contained in the General Law of the Environment and Natural Resources and its amendments. It establishes the general and specific rules for the management of PAs, including nature reserves; specifies the mechanisms for the declaration of new PAs; and includes guidelines for public and private administration depending on the management categories, management objectives, land tenure, monitoring and control, incentives, and sanctions for violations.

17. The Law of Conservation and Sustainable Use of Biodiversity (Law No. 807, 2012) regulates the conservation and sustainable use of existing biodiversity in the country, ensuring fair and equitable participation and sharing of benefits arising from its use, with particular attention to indigenous and Afro-descendant communities, and respect for and recognition of intellectual property rights, traditional and customary ways of local communities. More specifically the Law aims to: a) establish mechanisms for the sustainable use of components of biodiversity; b) establish procedures for access and use of genetic resources; c) encourage and prioritize research programs on ecosystems, species, races, and local varieties; d) promote the fair and equitable sharing of benefits arising from the use of biodiversity; and regulate the conservation, preservation, recovery, and regeneration of wild and domesticated biodiversity.

18. Nicaragua developed the National Biodiversity Strategy (NBS) in 2001, which is based on six objectives and strategic lines: a) improve biodiversity conservation, with consideration given to its

integral role in the country's development; b) promote the economic viability of biodiversity, taking into account its richness and economic value as well as the cost of its degradation; c) improve the country's capacity in the fields of scientific research, monitoring and technical assistance for conservation and sustainable use of biodiversity; d) develop mechanisms and institutional tools to improve the country's coordinated response capacity to address biodiversity degradation; e) develop and implement legal tools to improve the country's response capacity to address biodiversity degradation and loss; and f) improve the country's capacity to address the issues of education and citizen participation through actions that directly or indirectly encourage respect for environmental conservation in Nicaraguan society, and that encourage changes in the attitudes of men and women regarding the sustainable management of the country's biodiversity. The defined strategic lines are: a) biodiversity conservation; b) economic viability of sustainable use of biodiversity; c) strengthening the information and monitoring system for biodiversity; d) institutional management and inter-institutional coordination; e) harmonization of regulatory policies and the legal framework; and f) education and citizen participation. Nicaragua is currently in the process of updating the NBS and will mainstream the mandates specified in the NHDP (2012-2016) in the updated version.

Sustainable forest management

19. The country's forests legal framework includes the National Sustainable Development Policy of the Forest Sector of Nicaragua (Decree 69-2008), which states in Article 3 as its objective to "contribute, with a high level of citizen participation, to improving the quality of life of the current and future generations of Nicaraguan people, giving priority to the families of small and medium forest and agricultural producers, peasants, field hands, indigenous peoples, afro-descendants and ethnic communities; promoting sustainable development of the forest sector with a focus on the replenishment of the forest resources, avoided deforestation, rationed forest management and community foresting with an entrepreneurial vision." This policy also defines specific key objectives, including: a) to promote forest governance mechanisms and coordination, encourage intra-sectoral associative processes and territorial management; b) to strengthen and modernize the National Forest Management System's capabilities; and c) to encourage the coordination of the agricultural, cattle raising, and forest value chains with the promotion of financing and development mechanisms for value chains that use and manage the country's forest ecosystems in a sustainable manner.

20. The National Strategy for Avoided Deforestation (ENDE, according to its acronym in Spanish) is a national policy platform to carry out activities that will help Reduce Emissions from Deforestation and Forest Degradation (REDD+). The ENDE-REDD+ is conceived as the political and strategic framework of the Nicaraguan government to integrate activities at the national, state, and local levels that are focused on reversing the leading causes of deforestation and forest degradation, taking into consideration the restitution of the rights of native peoples and the people of Nicaragua in general to enjoy natural resources in a rationed and sustainable way.

21. ENDE-REDD+ is also conceived as a tool in the strategic and programmatic framework with regard to mitigation and climate change adaptation. It is aimed at reducing emissions due to deforestation and forest degradation, as well as preventing and reducing the negative impact of climate change through increasing resilience and coping capabilities of the forest and farming ecosystems and of the communities that depend on them in order to reduce social, ecological, and economic vulnerability, and to create the capabilities to contribute to the mitigation of greenhouse gas (GHG) emissions, mainly carbon dioxide (CO₂). ENDE-REDD+ is committed to attaining sustainable management of forests, to biodiversity conservation, to increasing carbon reservoirs, and to generate the co-benefits of conservation and its effects on the wellbeing of the people.

Climate change

22. In 2007, Nicaragua formulated the National Climate Change Action Plan (PANCC, according to its acronym in Spanish) based on a series of studies on vulnerability, mitigation options, and climate change

impact. The objective of the PANCC is to develop adaptation measures for the most vulnerable sectors of the economy, such as agriculture and water resources, and to contribute to the mitigation of GHG gases, particularly in the forest sector.

23. In addition, in 2010 Nicaragua defined the National Environmental and Climate Change Strategy Action Plan 2010-2015 to address environmental degradation and climate change with five strategic guidelines: a) environmental education for life; b) the defense and environmental protection of natural resources; c) conservation, recovery, catchment, and water harvesting; d) mitigation, adaptation, and risk management of climate change; and e) sustainable land management. The Action Plan 2010-2015 is in line with the Political Constitution (Article 60) and the principles of the NHDP.

24. Nicaragua submitted the First National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) in March 2001. The Communication established the National GHG Inventory with 1994 as its base year. The First National Communication presents future climate change scenarios for Nicaragua during the 21st century and includes studies on vulnerability and adaptation to climate change for the water sector and as well as mitigation options in the country's PAs and forest and agriculture sectors. It also includes a description of the PANCC.

25. Nicaragua's Second National Communication submitted in 2011 presents future climate change scenarios for Nicaragua for the 21st century. It includes studies on vulnerability and adaptation to climate change for the water sector and presents mitigation options in PAs of the country as well as the forest and agriculture sectors. It also includes a description of the PANCC. It has been predicted that climate change will result in an increase in the frequency and severity of natural disasters, most notably hurricanes, rainfall variability, and rising sea levels; all of these occurrences will have significant impacts on the progress of development.

Land degradation

26. The Government of Nicaragua (GoN) subscribed to the United Nations Convention to Combat Desertification (UNCCD) in October 1997, ratifying it in February 1998. In 2003, the GoN published the National Action Plan to Combat Desertification and Drought (NAPCDD) after a participatory process with government agencies, non-governmental organizations (NGOs), universities, and municipal authorities which enabled its formulation under MARENA's leadership⁵. The NAPCDD aims to stop and reverse ongoing desertification processes and foment co-existence with cyclical drought conditions in a way that is compatible with the sustainable use of natural resources. The Plan includes four strategic lines to orient future programs and projects: a) reclamation of degraded soils in the dry lands of Nicaragua; b) mitigation of the environmental and social impact of drought in the dry lands of Nicaragua; c) protection of natural resources: soil, water, forests, and biodiversity; and d) institutional strengthening at the national and municipal levels.

27. Nicaragua's Law for the Promotion of Agro-ecological and Organic Production (Law 765, 2011) is focused on developing agro-ecological systems and organic production, through regulation, promotion and enhancement of activities, practices and production processes that are environmental, economic, social and cultural sustainable, and that contribute to the restoration and preservation of ecosystems, agro-ecosystems, and SLM. This law includes specific reference to SLM and mandates the need for the use of production practices to reverse land and plant degradation, soil erosion, loss of top and fertile soil in arid, semi-arid, and dry sub-humid areas, caused by non-sustainable human activities and climate variability.

Institutional Framework

28. As provided in Law No. 217, MARENA is the national authority responsible for the regulation and monitoring and control of environmental quality, the sustainable use of renewable natural resources, and

⁵ MARENA. 2003. Plan Nacional de Acción para la Lucha contra la Desertificación y la Sequía.

the environmental management of non-renewable resources. MARENA also has the authority to issue administrative sanctions for non-compliance with environmental regulations. These functions are to be exercised in coordination with other state agencies and relevant regional and municipal authorities.

29. MARENA, through its Division of Protected Areas, is the governing body responsible for regulating and managing the NSPA. MARENA may give the administration of PAs to a third party under co-management, in accordance with the criteria, requirements, and administrative procedures established by the law for this purpose (Law No. 647, 2008 and Decree No. 01-2007). It is also responsible for directing, organizing, and managing Biosphere Reserves in accordance with existing policies, rules and other related regulations.

30. MARENA must consult with the authorities of the Autonomous Regions of the North and South Atlantic for the declaration and management of PAs and for the development and approval of management plans in accordance with the Law of Communal Property Regime for Indigenous and Ethnic Communities on the Atlantic Coast and the Bocay, Coco, and Indio Maíz Rivers (Law 445, 2002; Articles 26, 27, and 28), and the Regulation of Law No. 28 “Statute of Autonomy of the Autonomous Regions of the Atlantic Coast of Nicaragua” and other existing and future related regulations. Private Wildlife Reserves are declared by MARENA through Ministerial Resolution at the direct request of the owner or through a legal representative. The management and administration are the responsibility of the owner of the reserve in accordance with the procedures and technical criteria established for such purpose by MARENA.

31. MARENA, through its Local Territorial Offices, can provide technical support to municipal governments in the creation, protection, management, and development of Municipal Ecological Parks. The regional and municipal governments are responsible for the implementation and enforcement of environmental policy and natural resources within their jurisdictions in line with the General Law of the Environment and Natural Resources and other regulations. The regional and municipal governments should exercise their functions based on existing technical standards and in coordination with MARENA.

32. The institutional framework for the readiness and implementation of the ENDE-REDD+ includes three levels of work. The first level includes MARENA; the Farming and Forestry Ministry (MAGFOR); the Nicaraguan Institute of Territorial Studies (INETER); the Treasury and Public Credit Ministry (MHCP); the National Forestry Institute (INAFOR); the National Fund for Forest Development (FONADEFO); the Ministry of Finance, Industry, and Commerce; the Associations of Nicaraguan Municipalities; a representative of the Autonomous Regional Government of the North Atlantic (GRAAN); a representative of the Autonomous Regional Government of the South Atlantic (GRAAS); a representative of the indigenous territorial authorities of the Pacific Center; two representatives of the Indigenous Territorial Governments of the RAAN; the Attorney General of the Environment; the Public Ministry; the Nicaraguan Army; and the National Police.

33. The second level is formed by government officials from the technical units specialized in forest policies, climate change, technological research and innovation, and information systems of MAGFOR; MARENA; INAFOR; INETER; the National System for the Prevention, Mitigation and Attention to Disasters; the Associations of Nicaraguan Municipalities; the GRAAN; the GRAAS; the Nicaraguan Army; the National Police; three representatives of the Indigenous Territorial Governments of the GRAAN; a representative from the Indigenous Territories of the North Pacific Center, representatives of the Nicaraguan Alliance Against Climate Change; representatives of the universities, representatives of the Producers Unions; and a representative of National Cattle Ranchers Commission.

34. The third level constitutes a more open authority for readiness and consultation convened by the government to provide information and receive feedback on the topic from the key stakeholders.

1.2. Deforestation, land degradation, and biodiversity threats, impacts, and root causes

Deforestation

35. The rate of deforestation is approximately 74,663 ha/year (2.1%), which is resulting in the accelerated loss of biodiversity and forest cover, the reduction of surface water and groundwater, and soil erosion. An analysis of the changes in land use and forest cover, which was developed as part of the Readiness Preparation Proposal (R-PP) of Nicaragua (2012), determined that the principal historical causes for the conversion of forests to other land uses (deforestation) in the Pacific region are agriculture (55.9%), cattle ranching (34.4%), and agroforestry (9.8%). For the north-central region of the country, the expansion of cattle ranching has resulted in the conversion of 45.5% of original forest cover, with agriculture and agroforestry at 39.5% and 15.1%, respectively. In the central-southern and Atlantic regions the tendency towards conversion of forest cover from cattle ranching is 74% and 56.2%, respectively. For the year 2008 it was estimated that 68.7% of the total area of the country's original forest cover had been converted to other uses.

36. According to Nicaragua's R-PP (2102), the leading causes of deforestation are:

37. Expansion of the agricultural frontier: Extensive cattle raising practices with low productive performance accelerates the advancement of agricultural borders, making this activity the main threat to natural forests in the country. Converting forests into agricultural areas is linked to food security of poor rural families, while the objective of expanding pastures is to supply grazing areas for cattle during the dry season. It is estimated that out of approximately 200,000 cattle ranching families and a herd of 4.2 million head of cattle, 80% are considered small or medium productive units. The stocking rate is approximately 0.5 Animal Units per block (0.84 ha).

38. Illegal logging and overexploitation of forest resources: Although the data regarding the extent of this activity are incomplete, studies carried out in 2000 and 2003 indicate that the volume extracted by illegal logging is equivalent to 60% of the authorized volumes registered by INAFOR; in 2000 INAFOR authorized logging of 56,100 cubic meters (m³) of round wood; however, exports comprised 70,392 m³ of sawn timber⁶.

39. Forest fires: Fire is widely used for the expansion of new crops and pasture areas, affecting large forest extensions and degrading their structure and floristic composition. In addition, fires are responsible for: a) loss of biodiversity and loss ecosystem functionality; b) increase in carbon emissions and degradation of carbon sinks; c) affected infrastructure and human health; d) loss of productivity due to reduced soil fertility; and e) increased rural poverty.

40. Environmental events or natural disasters: Natural hazards such as hurricanes and tropical storms are a direct cause of forest degradation. Similarly, drought and intense rains have affected pine forests in the central area of Nicaragua. The infestation of deleterious pests such as the southern pine beetle (*Dendroctonus frontalis*) affected almost 4 million m³ in one area of the country comprising 32,873.46 ha.⁷

41. Occupation of indigenous territories by settlers: Nicaragua's indigenous peoples (e.g., the Mayagna and Miskitus) are pre-Columbian inhabitants with ancestral ownership of the country's Atlantic territories. Mestizos (peasants) appeared with the advancement of the agricultural and extensive cattle ranching sectors beginning in the 1950s as part of a social process that is related to poverty, government policies, and illegal land-trafficking. Indigenous peoples are very in tune with the conservation of their natural resources. In the Bosawás region, the average deforestation rate is over 2.15 ha/person/ year; however, the deforestation rate attributed to indigenous groups is only 0.2 ha/person/year⁸. The indigenous peoples and their cultures have been a fundamental factor in the conservation of forests in Nicaragua. For example, 90% of the existing forests in the core area of the Bosawás Reserve are located

⁶ INAFOR. Annual Report 2009, cited in Nicaragua's R-PP, 2012.

⁷ INAFOR, 2009. National Forestry Program (PFN). National Forestry Institute (INAFOR) Managua, Nicaragua. 368 p. Cited in Nicaragua's R-PP, 2012.

⁸ MARENA; 2011; Joint Management Plan for the BOSAWAS Biosphere Reservation. Cited in Nicaragua's R-PP, 2012.

in indigenous territories. The forms of production employed by Mestizos are similar to those used by cattle ranchers and traditional agricultural farmers. Landless peasants, who have been displaced from other regions of the country, have occupied indigenous lands, clearing the forest and then selling the timber to third parties living in the Central or Pacific regions⁹ of the country.

Threats to biodiversity

42. Multiple threats jeopardize the globally important biodiversity contained in Nicaragua's tropical dry and tropical humid, semi-humid, and cloud forests. The principal threats to these and other associated ecosystems are habitat loss and ecosystem transformation, overexploitation of forest resources, forest fires, pollution, introduction of alien invasive species, and climate change. These threats and their impacts are summarized in the following paragraphs.

43. Habitat loss and ecosystem transformation: The advancement of the agricultural frontier (accompanied by deforestation and forest fragmentation) is the main threat to biodiversity in Nicaragua. Although Nicaragua has some of the most extensive rainforests in Central America, most of the forest is due to the transformation of land for agriculture and cattle grazing purposes. This has caused significant ecosystem fragmentation (particularly of the tropical dry forest) leading to the displacement and reduction of species. The expansion of coffee crops has also transformed the cloud forest landscape, particularly in areas where unshaded coffee is grown. In addition, the expansion of sugar cane and oil palm are responsible for biodiversity habitat loss in tropical dry and humid forests; the nature of these cultivations (as monocultures) has led to the spread of associated pests, which represent a threat to native species.

44. Overexploitation of forest resources: There is high demand for timber and non-timber forest products from the tropical dry and humid forests. These threats result in reductions in the populations of flora and fauna species below viable levels, particularly those with a high commercial value; as such species are exploited without taking into account the size of the populations, their reproductive cycles, and other biological aspects. Illegal logging is particularly harmful in areas rich in hardwoods, which leads to the reduction of populations of species such as mahogany (*Swietenia macrophylla*, a Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES] endangered species), cedar (*Cedrela odorata*, a CITES endangered species), the spiny cedar or "pochote" (*Bombacopsis quinata*, a CITES protected species), and mangroves. In addition, most Nicaraguans in rural (91.4%) and urban (30.9%) areas use wood as a source of fuel. This creates a great demand for fuel wood for cooking, which has contributed to the degradation and clearing of many forested parts of the country, particularly in western Nicaragua.

45. Illegal hunting and commercialization of the pet trade has led to diminished animal populations. Hunting is practiced without any knowledge of the population dynamics of wildlife. Where hunting bans or periods of protection for some species have been defined, these are often not respected by hunters. In addition, the current status of wildlife populations is not being monitored, and the lack of attention to the impact of hunting may result in disturbed habitats largely devoid of major wildlife. Insufficient information regarding the abundance and distribution of terrestrial species makes the design of strategies to reduce this threat difficult. In Nicaragua, different species (including birds and mammals) are also captured to be kept as pets or sold. Species affected by illegal hunting and the pet trade include mammals (deer, tapir), birds (parrots), and reptiles (sea turtles, crocodiles, and iguanas).

46. Forest fires: According to the Food and Agriculture Organization of the United Nations (FAO)¹⁰, fires in Nicaragua are a seasonal event that coincides with the dry season (January-May). Two groups of forest fires are identified: intentional fires used for clearing of agricultural lands, burning of agricultural residues, forest management, and hunting; and wildfire, which includes fire caused by lightning.

⁹ Lezama, M 2007; The Natural Capital index as an analysis instrument of biodiversity loss in Nicaragua

¹⁰ <http://www.fao.org/docrep/006/ad653e/ad653e93.htm>. Accessed on 09/2014.

Although fire plays a minor role in the dynamics of humid forests, fire events do occur during long periods of warm and dry weather. Fire does not play a significant role in the dynamics of the dry forest; however, these forests become extremely dry during the fire season and are highly susceptible to wildfire affecting trees of all age groups. Fire does play a significant role in the dynamics of pine forests, which occupy the north-central mountains of Nicaragua.

47. Extensive areas of native forest in the Pacific lowlands and in the region of Las Segovias (northern Nicaragua) have been cleared using fire to support shifting agriculture and to drive game for hunting. There has been traditionally little concern about the spread of fire into surrounding forests. In addition, the need for pasture for cattle, sheep, and goats also leads to forest clearing with the aid of fire. Thus, fire is commonly used for clearing land, disposing of agricultural residues, and improving forage conditions.

48. Pollution: Agricultural and household wastes are a main source of pollution in Nicaragua, particularly in the contamination of water bodies. Agrochemicals (fertilizers, herbicides, and pesticides) are commonly used without proper management, ending up in water bodies (stream, rivers, lakes, lagoons, and inland and coastal wetlands) through runoff or through the direct disposal of agrochemical wastes. Non-sustainable agricultural practices have also resulted in significant sedimentation of water bodies, including Lake Nicaragua. The lake is the largest fresh water reservoir in Central America and with navigation, fishing, and tourism importance. Though pollution has not yet reached critical levels, this is a latent danger considering the population growth and agricultural and industrial activities occurring in its basin. Water bodies have also become areas of disposal for other farm and domesticated animal wastes. Untreated municipal and industrial wastewater also poses a threat to water quality and biodiversity. Most of the population discharges its residual water directly into rivers, streams, and lake with no prior treatment.

49. Introduction of alien invasive species: Alien invasive species may alter ecosystem habitat structure, reduce biodiversity levels, and modify food webs, among other impacts. Although the full impact of alien invasive species on Nicaragua's native biodiversity still needs to be assessed, their presence has already been documented. In Nicaragua, the non-native Nile tilapia (*Oreochromis niloticus*) was introduced into lakes and rivers for aquaculture in the 1960s; its establishment in the country's rivers and lakes has been associated with a reduction of the native cichlid species. Not only does the invasive tilapia consume much of the native cichlid's food, they also carry pathogens that can switch hosts, affecting the native fish populations. Similarly, the sucker mouth catfish (*Hypostomus spp.*), a species native to tropical South America and that belongs to the armored catfish family (*Loricariidae*), has invaded the Lake of Nicaragua and the country's rivers and lagoons. MARENA (2014)¹¹ has identified teak (*Tectona grandis*) as an alien invasive species. Teak is a common tropical hardwood native to Southeast Asia and the Pacific. Environmental conditions such as rainfall, volcanic soil, and intense sunlight in Nicaragua provide optimum conditions for the growth and spread of teak.

50. Climate change: Nicaragua is increasingly affected by extreme climate variability that impact the country's ecosystems and biodiversity. According to Second National Communication to the UNFCCC¹², increases of between 1 and 2 degrees Celsius (°C) in the average temperature are projected for 2020-2050, and between 3 or 4°C by the end of the century. Ecosystems and species at high elevations may be more sensitive to increases in temperature (e.g., cloud forest), while those at lower elevations may be more susceptible to changes in precipitation (e.g., tropical dry forest and tropical lowland humid forest). Climate change may cause high mortality rates and the extinction of endemic species and species with restricted distribution. Forest ecosystems in Nicaragua are also threatened by an increase in the number and intensity of tropical storms and hurricanes; during the last two decades these events have caused the loss of forest cover and increased erosion due to an increase in landslides and torrential rains.

¹¹ MARENA. 2014. V Informe Nacional de Biodiversidad.

¹² MARENA. 2011. Nicaragua's Second National Communication to the UNFCCC.

51. The direct and underlying causes of deforestation and loss of biodiversity include:

52. Weak institutions: Forest and biodiversity conservation, and the environment in general, are not political priorities and traditionally have not been included as part of long-term national policies. Additionally, the limited presence of the judicial power in the territories due to budgetary constraints impedes the effective operation of local enforcement offices. Similarly, agencies responsible for the management and conservation of forests and biodiversity (e.g., INAFOR, MARENA, Nicaraguan Institute for Farming Technology [INTA], and MAGFOR) operate locally under similar constraints – budgetary management is overrun by bureaucratic administrative procedures and interinstitutional coordination is deficient. At the local level, enforcement agencies such as the police, army, the Attorney General’s Office, and the Prosecutor General’s Office have low institutional priority for environmental issues focusing their effort on combating common and other crimes under limited budgets.

53. Poverty in rural areas: Nicaragua is the second poorest country in Latin America. Poverty is largely a rural problem; most people in rural areas include the families of small-scale farmers and landless farm workers, and families that combine both agricultural and other income-generating activities on the farm. Poverty and the lack of land for cultivation pushes many families to live in marginal lands, which often leads to the deforestation of the remaining remnant dry and humid forest patches and to depend on biodiversity as a source of income and food. In addition, rural farmers usually depend on the cultivation of just a few crops (sorghum and maize in the lowlands and beans and vegetables in the highlands), making them highly vulnerable to market variations and climatic conditions, including droughts that have seriously affected food security and sources of income.

54. Limited awareness about forest- and biodiversity-related laws and norms at the rural level: The lack of effective mechanisms for the dissemination of laws, norms, and legal procedures creates a knowledge gap among rural communities, which in turn promotes activities leading to deforestation, forest degradation, and pressure on biodiversity and makes enforcement by the environmental authorities problematic. Additionally, the low level of schooling in rural areas, with 46% of the population classified as illiterate, makes it difficult to understand the norms and laws even when they are disseminated. There is also poor dissemination of information due to the difficulty presented by indigenous languages. This leads to greater probability of indigenous groups being unaware of their rights, including access to the land and natural resources, thereby limiting their ability to defend their territories against the advancement of the agricultural frontier, immigration, and uncontrolled development.

Land degradation

55. Despite the fact that Nicaragua still maintains considerable forest cover (3,533,749.7 ha, or 29.4% of the national territory)¹³, it is currently undergoing a process of severe land degradation caused by unregulated activity and exploitation of forest resources, unsustainable agricultural and livestock production practices, and because of the effects of prolonged drought associated with the El Niño Southern Oscillation (ENSO) phenomenon. Together, these factors contribute to increased land degradation and desertification that undermine land productivity and increase poverty.

56. A study conducted by the Universidad Centroamericana¹⁴ has estimated that 34% of the national territory, equivalent to 41,148.03 km², is prone to cyclical drought. Dry land areas in Nicaragua include 10 of the country’s departments (Nueva Segovia, Madriz, Estelí, Chinandega, León, Managua, Rivas, Masaya, Granada, and Carazo) and include portions of four other departments (Matagalpa, Jinotega, Boaco, and Chontales). These regions comprise 116 municipalities, which encompass more than half of the country’s local governments. The most severely affected municipalities are those in which cumulative annual rainfall is less than 400 millimeters (mm). There are 24 municipalities within these departments

¹³ Readiness Preparation Proposal (R-PP). Nicaragua, 2012.

¹⁴ Universidad Centroamericana.2002.Caracterización agro-socioeconómica de la zona seca de Nicaragua.

that represent the most critical conditions of land degradation and vulnerability to drought. These areas lie within the Central American “drought corridor” in which the dry seasons last more than six months each year.

57. According to the NAPCDD (2003)¹⁵ the leading causes of land degradation are:

58. None-sustainable agriculture: Agriculture practices in the dry lands of Nicaragua are characterized by unsustainable practices such as slash-and-burn agriculture and farming on hillsides, which contribute to soil erosion and reduce the aquifer recharge due to increased surface run-off. This also leads to an increase in riverbed sediment load and the likelihood of flash floods. The livestock sector also contributes to land degradation, although to a relatively lesser extent because of land use conflicts. Cattle ranching is characterized by a high percentage of land used for pasture (cattle ranching) and a low number of bovine cattle per area unit (1 cattle/ha), demonstrating the inefficient use of land resources. Pastures are most often natural grasslands and there is little use of improved grass varieties to increase productivity. The extensive use by larger cattle ranchers leads to the displacement of poor peasants towards more marginal lands, which in turn contributes to land degradation of marginal areas.

59. Poverty and land degradation in the dry lands: The dry lands are inhabited by populations with a high degree of poverty and who use the land and the remaining forests principally for establishing subsistence farming. These populations are vulnerable to drought and their livelihoods depend on the productivity of ecosystems and agro ecosystems, which in turn are highly vulnerable to fluctuations in rainfall patterns. Almost half of the dry lands are overused and unsustainably managed, leading to severe land degradation. Poverty results in unsustainable agricultural practices, the colonization of new lands for cultivation leading to their deforestation, hydrological alterations in natural watersheds, and reduced ecosystem integrity; the excessive use of fuel wood (energy consumption by households and small rural industries depends primarily on native forests); and the contamination and sedimentation/reduced flow of rivers due to erosion and excessive fertilizer/agro-chemical use. In turn, the degradation of environmental assets (soil, water, forest) tends to reduce the resilience of ecosystems and agro-ecosystems. It also implies a progressive drop in ecosystems’ productivity and agricultural yields, worsening the level of vulnerability of the rural population that depends on these natural systems for their livelihoods. This feeds into a vicious circle by which land degradation exacerbates existing poverty conditions in rural communities, and at the same time these conditions of poverty perpetuate the pressure on environmental assets and the land.

60. The ENSO phenomenon: Droughts in Nicaragua are closely linked with the ENSO phenomenon. Rainfall records for the period 1970-1998 indicate there is a direct relationship between El Niño and drought in the country. Rainfall records allow inferring the severity of drought and historical trends can be used to predict the probability of periods of drought in the future.

Climate change

61. Nicaragua is highly vulnerable to climate variability and extreme natural events; these two phenomena have significant socioeconomic impacts that are magnified by the high level of poverty in the country. As mentioned previously, increases of between 1 and 2°C in the average temperature are projected for 2020-50, and between 3 or 4°C by the end of the century. The Pacific coast is likely to suffer the largest temperature increase. Likewise, more intense precipitation on the Atlantic coast has been projected; however, most of the models project a reduction of precipitation at a national level, and a slight increase for the Pacific South region. These changes would directly affect the poor, food security, jobs, the economy, social structure, and the overall development of the country.

62. Nicaragua experienced severe droughts during 1972, 1977, 1991, 1997, 2003, and 2010. The country has been severely impacted by floods associated with hurricanes (e.g., Juana and Bluefields,

¹⁵ MARENA y PNUD. 2003. Programa de Acción Nacional de Lucha Contra la Desertificación y la Sequía. 46 páginas.

1988), tropical storms (e.g., Pert and Bret, 1995; Alma, 2008) and torrential rains (1995). Additionally, catastrophic landslides and mud flows occurred after Hurricane Mitch (1998) hit Central America. It is believed that climate change will result in an increased frequency and severity of extreme natural events.

63. According to the modeling work conducted by the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC, according to the Spanish acronym), Central America will be significantly affected by climate change by the 2020s and the areas that will be most affected are those currently classified as dry lands. Furthermore, by the 2080s, in terms of the “comfort zone” of climatic niches that species and ecosystems have become tolerant to, if worst-case scenario conditions prevail, all of the ecosystems and species of Central America will be subjected to conditions well outside of their traditional “comfort zones.” CATHALAC also concluded that the potential impact of climate change on the ecosystems and species most likely to be affected are already located within PAs, and they may find it difficult to adapt to the projected climatic changes.¹⁶

1.3. Long-term solution

64. The long-term solution is to overcome deforestation, land degradation, and threats to biodiversity through strengthened MUPAs management that conserves core areas nested in a wider landscape where multiple environmental benefits are delivered by sustainable forest and land management in the western and north-central regions of Nicaragua. A PA management approach that successfully integrates biodiversity conservation and the sustainable use of natural resources into the landscape will effectively reduce threats originating outside of the PAs and will contribute to the reduction of deforestation and desertification, enhance carbon stocks, and maintain forest cover between PAs. Specific actions that will be developed through the Project that will contribute to providing solutions to deforestation of dry and humid forests, land degradation, and threats to biodiversity are summarized in Table 3.

Table 3 - Project contributions to the reduction of deforestation, land degradation, and threats to biodiversity.

Threats	Solutions
Habitat loss and ecosystem transformation	<ul style="list-style-type: none"> - Update/develop management plans for 12 existing MUPAs. - Enhance enforcement capacity of PA authorities at the central and local levels for the monitoring, surveillance, and control of sustainable use of natural resources in MUPAs. - Implement sustainable production practices in MUPA buffers zones.
Deforestation	<ul style="list-style-type: none"> - Implement a Sustainable Forest Management (SFM)/REDD+ pilot project, which will result in the avoided deforestation of X ha of humid forest.
Overexploitation of forest resources, including illegal logging	<ul style="list-style-type: none"> - Develop and implement enforcement and control plans in the 12 MUPAs to reduce existing threats to biodiversity, targeting illegal logging and trade of vulnerable and endangered species. - Establish multi-sectoral collaborative management agreements for the administration of 12 existing MUPAs.
None-sustainable agricultural	<ul style="list-style-type: none"> - Implement best management practices (BMPs) that will allow local stakeholders to increase water flows, reduced soil erosion and loss, and increase in soil fertility. - Develop integrated farm management plans to improve on-farm sustainability, including the implementation of agroforestry and silvopastoral systems.
Forest fires	<ul style="list-style-type: none"> - Develop and implement enforcement and control plans in 12 MUPAs to

¹⁶ Anderson, E.R., Cherrington, E.A., Flores, A.I., Perez, J.B., Carrillo R., and E. Sempris. 2008. “Potential Impacts of Climate Change on Biodiversity in Central America, Mexico, and the Dominican Republic.” CATHALAC / USAID. Panama City, Panama. 105 pp.

	<p>reduce existing threats to biodiversity, targeting uncontrolled slash-and-burn/forest fires.</p> <ul style="list-style-type: none"> - Strengthen existing campaigns to prevent forest fires in the municipalities that surround 12 MUPAs. - Train 15 municipal fire brigades to control forest fires in the prioritized landscapes.
Pollution	<ul style="list-style-type: none"> - Develop integrated farm management plans in dry and humid forest landscapes to allow farmers to improve on-farm sustainability. - Implement BMPs that will allow local stakeholders disposing of wastes in an environmentally sound manner to reduce the contamination of water bodies and soils.
Climate change	<ul style="list-style-type: none"> - Provide a stable source for carbon sequestration through the rehabilitation of 2,000 ha of degraded areas in dry forest and humid forest landscapes. - Promote connectivity among forest blocks and conservation areas (MUPAs) in three dry forest landscapes and one humid forest landscape, enhancing species' mobility and providing them with refuge from temperature changes.

1.4. Barriers analysis

65. Weak institutional capacity framework for the effective management of MUPAs. Government officials and members of local organizations and communities have limited capacity to effectively manage MUPAs in the dry forest and humid forest landscapes of the western and north-central regions of Nicaragua in order to maximize biodiversity conservation benefits. There is limited capacity to integrate MUPA management into the wider landscape, thereby reducing opportunities to maximize the delivery of ecosystems services, including quality habitat for biodiversity. According to the Regulation of Protected Areas of Nicaragua (Decree No. 01-2007), MUPAs are administered by MARENA and can be given in co-management. Activities allowed in MUPAs include research, technical studies, monitoring, environmental education and interpretation, sustainable tourism and recreation, and sustainable agricultural production activities under silvopastoral and agroforestry systems. However, MARENA has limited capacity to articulate the geographical and technical scope of these activities, including procedures, roles, and responsibilities, in the context of community-based management plans. In addition, MUPAs have a weak governance framework and limited technical, monitoring, and enforcement capacity. MARENA has not developed efficient coordination and cooperation mechanisms with municipal authorities to reduce threats emerging from outside PAs, and this has prevented the achievement of the PAs' management goals, including the sustainable delivery of environmental goods and services (e.g., water, energy, timber, and outdoor recreation). PA officials and potential local partners for conservation, including municipalities, lack the knowledge and skills to design biological corridors in adjacent production landscapes that would contribute to reducing threats and increase connectivity. An approach to biodiversity conservation that considers the wider landscape must be incorporated into the management plans for existing MUPAs. Similarly, there is an absence of information and monitoring systems that employ indicators to assess the impact of strategies designed to reduce vulnerability and enhance biodiversity conservation and to facilitate decision-making. Finally, MUPA management must be strengthened not only with new financial resources from government and private sources but also with specialized financial and management staff that ensures cost-effective administration procedures.

66. Limited planning and management capacities and mechanisms for generating global environmental benefits through sustainable forest and land management in the wider landscape (corridors) between MUPAs. The generation of environmental benefits through sustainable forest and land management between MUPAs requires effective cooperation between national and local environmental authorities, as well as the involvement of local communities and farm owners. Cooperation between municipal authorities responsible for land use planning and for verifying compliance with the environmental

standards established by law (i.e., Municipalities Act, No. 40/1988) at the local level, and the national environmental authorities, is limited by the lack of tools and skills that would enable them to align land and natural resources use within the municipality with conservation objectives of the surrounding PAs. Similarly, the ability of municipal officials to provide land use planning support to landowners to implement sustainable production systems and land use plans with environmental benefits within their properties is limited. In addition, environmental information and monitoring mechanisms to facilitate decision-making, the assessment of the benefits of sustainable forest and land management, and enforcement at the municipal level are lacking. In turn, national environmental authorities do not have the required skills to support their municipal counterparts to implement strategies for sustainable forest and land management or for the conservation of biodiversity. National authorities have limited knowledge about methodologies for implementing SFM/REDD+, Land and Use, Land-Use Change and Forestry (LULUCF), and the quantification and evaluation of carbon flows to assess changes in carbon stocks. Finally, there is a lack of financial incentives for landowners to carry out integrated farm management practices and conserve forest patches within their farms, which would contribute to improving ecosystem connectivity through biological corridors. Land owners lack farm management plans that would improve on-farm sustainability through agroforestry and silvopastoral systems and that would enhance ecosystem connectivity.

1.5. Stakeholder analysis

67. The successful implementation of the project will largely depend on effective communication with the multiple project stakeholders and the implementation of mechanisms to ensure their participation. The key national stakeholders include MARENA, MAGFOR, and INAFOR. At the local level, the most relevant stakeholders are the municipalities as well as civil society organizations (CSOs) and local communities. Table 4 presents a description of the principal stakeholders involved in the project.

Table 4 - Summary of key stakeholders.

Stakeholders	Project Implementation Role	Role in relation to Components
Ministry of Environment and Natural Resources (MARENA)	<p>MARENA is responsible for the environmental protection and the study, planning, and management of Nicaragua’s natural resources. MARENA is the lead agency for environmental management in Nicaragua and the GoN representative’s to the UNFCCC, the CBD, and the UNCCD. The agency manages the NSPA and will guide and provide support for all actions related to SFM, biodiversity conservation, PA management, reduction of land degradation, and CC mitigation (Components 1 and 2). It is the project’s Executing Entity.</p> <p>MARENA’s Local Territorial Delegations are the governing bodies of the PAs at the local level. The Local Territorial Delegations of Rivas, Jinotega, Boaco, Chontales, and Chinandega will play a central role in the development and implementation of the planning, management, monitoring, and enforcement frameworks for the 12 MUPAS prioritized by the project (Component 1). These MUPAs will benefit through training, equipment, and the implementation of information management tools for improving MUPA management effectiveness.</p>	C1 and C2
Municipalities (15)	The municipalities are responsible for the development of the environmental municipal plans. Through their Environmental Units the municipalities implement all regulations and policies related to the environment at the local level.	C1 and C2

	The municipalities (Wiwili, El Cua, Somotillo, Villanueva, Morazán, El Viejo, San José, Camoapa, Boaco, Santa Lucía, Comalapa, Juigalpa, Cuapa, Moyogalpa, and Altagracia) will actively participate in the planning and management of the MUPAs and their associated biological corridors (Component 1); these efforts will bring local benefits through biodiversity conservation and a sustainable flow of goods and services. The municipalities will be direct beneficiaries of the project in terms of receiving training in REDD+, SFM, SLM, and biodiversity conservation. By project's end, the municipalities will be equipped with the technical tools (GIS-mapping tool and monitoring and enforcement system) to support decision-making and the assessment of SFM, SLM, and biodiversity conservation in dry and humid forest landscapes (Component 2).	
Civil Society Organizations (CSOs)	The CSOs include Family, Community, and Life Cabinets, which play a key role in the monitoring and control of PAs and their buffer zones, and serve as liaisons between the PA authorities and community members (Component 1). In addition, NGOs such as the Centro de Entendimiento con la Naturaleza (CEN) provide support to PA management and may be part of multi-sectoral collaborative agreements for the shared management of MUPAs (Component 1).	C1
Local communities, including farmers	Local communities living within the prioritized landscapes will actively participate in the development and updating of the MUPAs' management plans, as well as in defining procedures, roles, and responsibilities for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions for grazing, agriculture, and other acceptable production activities (Component 1). In addition, through Component 2, local communities (including men and women farmers) will implement BMPs to improve soil productivity, maintain forest coverage, and conserve biodiversity, including the implementation of sustainable agroforestry and silvopastoral systems. The local communities will be the beneficiaries of training, technical assistance, and performance-based compensation as a result of the implementation of a GEF-funded ENDE-REDD+ pilot project.	C1 and C2
Universities	Universities involved with the project include the Universidad Centroamericana of Nicaragua (UCA), National Autonomous University of Nicaragua (UNAN), and the National Agrarian University (UNA). These universities will play a central role in strengthening the capacity of MARENA's staff, including the Local Territorial Delegations (Rivas, Jinotega, Boaco, Chontales, and Chinandega) and PA staff, in planning, management, financial sustainability, and monitoring of PAs and biodiversity conservation (Component 1). In addition, the universities will provide technical support to the municipalities for the development of municipal-level planning, monitoring and enforcement systems to facilitate the assessment of SFM, SLM and biodiversity benefits and the GEF-funded ENDE-REDD+ pilot project MRV system (Component 2).	C1 and C2
Private sectors	The private sectors include cooperatives or producer associations (agriculture and cattle-ranching) and tourism businesses associated	C1

	with the PAs. These groups will be part of the multi-sectoral collaborative agreements and management committees that supervise biodiversity conservation, support the effective management of the MUPAs considering the wider landscape, and ensure compliance with the sustainable use of forest products and off-takes and the use of biodiversity-friendly production methods (Component 1).	
Attorney General's Office, the National Police, and the Army	These control and enforcement agencies will protect and provide support for the actions of government agencies and will investigate violations of environmental laws and regulations. The Army is the main provider of logistics for fire suppression operations. These agencies will provide support for the enforcement of sustainable off-takes for forest products, and land use prescriptions for grazing, agriculture, and other acceptable production activities in the MUPAs (Component 1). Additionally, these agencies will participate in the development of an operational handbook for the prevention and control of environmental violations in MUPAs.	C1
Farming and Forestry Ministry (MAGFOR) and the National Forestry Institute (INAFOR)	MAGFOR is responsible for the creation of agricultural and forestry development policies; plans and strategies; proposals for environmental system protection programs, with particular emphasis on soil and water conservation; and coordinating implementation of such programs with MARENA. INAFOR resides within the organizational structure of MAGFOR and charged with promoting the rational and sustainable use of forests on state lands that have not been declared as PAs. The coordination of actions with MAGFOR and INAFOR will promote SFM and SLM and improve the management effectiveness of buffer zones of MUPAs (Component 2). As part of the institutional framework for the readiness and implementation of the ENDE-REDD+, MAGFOR/INAFOR will play a central role in providing technical support for implementation and monitoring of the GEF-funded ENDE-REDD+ pilot project (Component 2). In addition, performance-based compensation, as part of the GEF-funded ENDE-REDD+ pilot project, will be made through FONADEFO, which is a financial mechanism administered by INAFOR for fundraising and management of financial resources to support forestry programs and projects to promote SFM, increase economic development, conservation of natural resources, develop markets for PES, and the protection of the environment.	C2

1.6. Baseline analysis

68. Under the baseline scenario efforts will be made for strengthening land/forest management and biodiversity conservation in the dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua in order to ensure the flow of multiple ecosystem services. The baseline analysis describes investments related to climate change mitigation, SFM/REDD+, biodiversity conservation and its sustainable use, and the reduction and prevention of land degradation.

69. Biodiversity conservation. The problem that the baseline activities seek to address is the loss of dry and humid forests and biodiversity and their ability to generate goods and services (water generation, biodiversity habitat, and carbon sequestration). Investments for PA management are expected to be on the order of \$7 million USD/year for the period of 2013-2018.

70. Reduction and prevention of land degradation. The problem that the baseline activities seek to address is the loss of soil productivity and desertification in arid and semi-arid zones. Through the *Integrated management of watersheds, water and sanitation project* (PIMCHAS-MARENA, according to the Spanish acronym), the GoN, with financial support from the Government of Canada, will aim to improve the quality of life and economic welfare of the residents of the semi-arid areas of northern Nicaragua through the improved management and use of water resources. Phase 3 of PIMCHAS (2012-2015) includes an investment of \$2.3 million USD in highly vulnerable environmental and social areas in the Estelí River and Old River sub-basins, and the Black River and Estero Real River basins, specifically in the areas of aquifer recharge and catchment sites that supply water to the towns of 11 municipalities.

71. Climate change mitigation. The baseline activities aim to promote good practices for land and forest cover management as well as the restoration and enhancement of carbon stocks in dry ecosystems and humid forests. The *Environmental program for disaster risk and climate change management*, with an investment of \$13 million USD for the period of 2011-2015 and financial support from the Inter-American Development Bank (IADB) and the Nordic Development Fund (NDF), is under implementation in the Río Viejo and Lake Apanás sub-basins (upper San Juan River Basin, southeastern Nicaragua). This investment will allow: a) increased tree cover, improved soil conservation areas by ensuring the efficient water use, increased infiltration, topsoil conservation, reduced erosion, and stabilized slopes to limit the risk of landslides during the rainy season; b) enhanced water capture through water-harvesting systems that will increase water supply for household and production during the crop cycle; c) construction works in critical areas for climate-related risk reduction that will benefit an estimated 34,329 vulnerable people; and d) increased knowledge among the population about the risk and vulnerability to extreme events, climate variability and change, and the development of municipal plans for risk management and climate change adaptation. In addition, the project *Reducing poverty by enhancing the resilience of vulnerable populations and their livelihoods in Nicaragua* (Las Segovias region), with an investment of \$3.2 million USD (2012-2015) and support from the Swiss Cooperation and the United Nations Development Programme (UNDP), will contribute to reducing poverty by increasing the resilience of vulnerable populations and their livelihoods to climate change in northern Nicaragua.

72. SFM/REDD+. The baseline activities seek to address the problem of increased carbon emissions from deforestation and forest degradation. Through MARENA, the GoN developed the R-PP to implement the ENDE and REDD+ activities. The ENDE-REDD+ aims to integrate actions at national, sub-national, and local levels for reversing the main causes of deforestation and forest degradation. The expected key results from the R-PP implementation process are: a) sufficient local, territorial, regional, and national knowledge to design the ENDE and implement REDD+; b) local, territorial, regional and national capacity-building, acquiring and sharing techniques and technology among the stakeholders involved in carrying out the REDD+ mechanism in Nicaragua; c) a national and regional revised ENDE-REDD+ forest monitoring system; and d) key local, territorial, regional and national stakeholders are aware of the importance of the ENDE-REDD+ and have participated in the design and/or consultations of each R-PP component, as well as in the planning and execution of the activities in the preparatory stage of the ENDE-REDD+. The R-PP will be implemented between 2012 and 2015 and has a total budget of \$10.27 million USD, of which \$3.4 million USD are expected to be obtained from the Forest Carbon Partnership Facility (FCPF). Local government contributions are estimated at \$250,000 USD (the GoN's contribution has yet to be tallied, but it is estimated to be between 5 and 10% of the current budget), and \$1 million USD is anticipated through the REDD Central American Commission on Environment and Development– GIZ project (2010-2016). In addition, investments on the order of \$2.5 million USD over the next 5 years will be made through FONADEFO/INAFOR to be used in promoting reforestation for the conservation of natural resources and the development of markets for payments for environmental services (PES).

2. STRATEGY

2.1. Project rationale and policy conformity

73. The proposed project is in line with the Global Environment Facility's (GEF) strategy and the results framework for the System for Transparent Allocation of Resources (STAR 5) for Nicaragua. The project will contribute to reducing the degradation and loss of the dry and humid forests in Nicaragua through the strengthening of MUPAs management; the consolidation of biological corridors that promote ecological connectivity between existing MUPAs and forest remnants of dry, semi-humid, and humid forests; the implementation of a GEF-funded ENDE-REDD+ pilot project; and the sustainable management of tropical dry forests and dry lands in Nicaragua. These and other actions will help to remove barriers related to the lack of institutional capacity and technical knowledge that have limited the effective conservation of biodiversity through MUPAs, and the sustainable use of forests and the land within their surrounding landscapes. The project will deliver multiple global environmental benefits including biodiversity conservation, reduction of desertification, increase in carbon stocks and reduction of GHG emissions, and increase in forest cover and sustainable flows of ecosystem services.

74. The project's objective is framed within the Focal Areas of Biodiversity (BD), Land Degradation (LD), and Climate Change Mitigation (CCM), as well as Sustainable Forest Management/REDD Plus (SFM/REDD+). Specifically, the project addresses the BD-1 objective: *Improve Sustainability of Protected Area Systems*. The project will improve the management effectiveness of twelve (12) existing PAs to reduce the threats that these face from land use within and outside their boundaries (e.g., non-sustainable agriculture and cattle ranching, illegal logging, trade of vulnerable and endangered species, and forest fires), and will thereby reduce vulnerability of threatened biodiversity in selected dry forest landscapes and in humid, semi-humid, and cloud forest core habitats (Component 1). The project will also address the LD-3: *Integrated Landscapes: Reduce pressures on natural resources from competing land uses in the wider landscape*. The project will facilitate the development of landscape management practices by local farmers that will result in stable dry forest and humid forest covers and sustainable ecosystem services, including sustained water flows in key watersheds (Component 2). The project will also address the CCM-5: *LULUCF: Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change, and forestry*. The project will use landscape management tools (e.g., natural rehabilitation of degraded areas, agroforestry, and silvopastoral systems) in selected dry forest and humid forest of western and north-central Nicaragua, resulting in improved ecosystem structure and functionality and enhanced carbon stocks (Component 2). The project also addresses the SFM/REDD-1: *Forest Ecosystem Services* objective, which seeks to *reduce pressures on forest resources and generate sustainable flows of forest ecosystem services*. The project has been designed in accordance with GEF investment guidelines for the SFM/REDD+ and will reduce the pressure on forest resources and to generate sustainable flows of ecosystem services by implementing SFM/REDD+ measures to reduce threats to the tropical dry forest and the humid/semi-humid forests, buffering and connecting existing PAs where deforestation rates are high principally due to the expansion of agriculture and extensive cattle ranching.

75. The project will contribute to the implementation of the 2011-2020 Strategic Plan of the Convention on Biological Diversity (i.e., Aichi Targets). More specifically, the project will contribute to achieving Target 1: *By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably*; Target 5: *By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced*; Target 7: *By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity*; Target 11: *By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes*; Target 12: *By 2020 the*

extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained; Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable; and Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

2.2. Country ownership: Country eligibility and country drivenness

76. The project advances the 2010-2020 National Plan for Human Development (PNDH) of the Government for Reconciliation and National Unity in its Objectives 2 and 8: “To care for and defend protected areas” and “To care for and restore environmentally degraded and eroded areas through adaptive, agroforestry, and silvopastoral systems,” respectively. The project is equally consistent with the National Environmental and Climate Change Strategy-NECCS (2010) and its Plan of Action, particularly under two of the five guidelines: a) Environmental Defense and Protection of Natural Resources, which proposes to “strengthen the mechanisms for protection of the current protected areas” and “restore and conserve corridors of life” as steps toward “the integral restoration of the country’s existing ecosystems;” and b) Sustainable Land Management, which proposes “the appropriate land use and planning in rural and urban areas, in harmony with nature, ensuring its preservation” and the promotion of best agricultural practices for the improved management of agricultural land use. It will contribute to the NECCS Plan of Action 2010-2015, which guarantees the participation of the organized community and government institutions in developing conservation actions and preserving Nicaragua’s natural resources. In particular the project is in line with the strategy for mitigation, adaptation, and risk management with regard to climate change.

77. The project has been designed to address the NBS (2002) and the National Plan to Combat Desertification and Drought (2002), which establishes lines of action for the restoration of ecosystems, the protection of biodiversity, and reversing the process of soil degradation in the dry areas of Nicaragua. The proposed project will have a relevant and pioneering role in Nicaragua with regard to NBS’s Objective 8, which was agreed to in 2010 during the Convention on Biological Diversity (CBD) (To maintain ecosystems’ capacity to deliver goods and services and lend support to livelihoods). The Fourth National Report to the CBD (2010) indicates that complying with this objective depends upon connectivity through biological corridors. In addition, the BCGA of Nicaragua indicates that these corridors ensure the protection of water resources, the genetic exchange between species and ecosystems, and should contribute to increasing agricultural productivity. The project will make an important contribution to the consolidation of biological corridors and the promotion of ecosystem connectivity, providing refuge for species of global importance against the effects of climate change.

78. The project also addresses the Gender Policy of the Government for Reconciliation and National Unity of Nicaragua and the Equal Rights and Opportunities Law (No. 648, 2008) and its Regulation, which states that with regard to the environment, it will ensure the adoption of Equal Opportunities by incorporating a gender focus into the country's environmental policy with awareness and training programs that address equity and the equality between women and men involved in environmental activities. Similarly, through the formulation and implementation of educational programs, control, protection, and management of natural resources; the environment and biodiversity, in gender statistics and indicators, funding for women for the implementation of projects for the protection, conservation and rational use of the natural resources that alleviate the workload of women and family poverty, and the participation of women and men in decision-making processes that involve them and their families.

2.3. Design principles and strategic considerations

79. Project Identification Form (PIF) Conformity: The project design is aligned with the original PIF. The project’s strategy, including the structure of the project components, closely resembles the PIF that was approved by the GEF. The following changes were made, which do not represent a departure from the project’s strategy as defined originally in the PIF and it will not have an impact on the funds (GEF and co-financing) originally budgeted.

PIF Outputs (Component 1)	Project Document Outputs (Component 1)
<p><i>Planning and monitoring strengthened in 11 multiple-use PAs (MUPA)</i></p> <p><i>Management and enforcement framework in place for 11 MUPAs</i></p> <p><i>Finance in place for 11 MUPAs</i></p>	<p><i>Planning and monitoring strengthened in 12 multiple-use PAs (MUPA)</i></p> <p><i>Management and enforcement framework in place for 12 MUPAs</i></p> <p><i>Finance in place for 12 MUPAs</i></p> <p>One additional MUPA was included in the project. This area is called the Istiam Peña Inculca Wetland Wildlife Refuge (1,767 ha) and is part of the Lake Nicaragua Island Corridor. The Istiam Peña Inculca Wetland Wildlife Refuge was established in 2013 and included as part of the Ometepe Biosphere Reserve (listed in 2010); together with the Volcán Concepción Natural Reserve and the Volcán Maderas Natural Reserves they constitute the core zone of the the Ometepe Biosphere Reserve. The Istiam Peña Inculca Wetland Wildlife Refuge is strategically located and provides protection for the lowland dry forest ecosystems between the two volcanos as well as connectivity with the lower and upper montane dry and humid forests.</p>
<p>Not included</p>	<p><i>Sustainable production practices to prevent deforestation in the buffer zones of protected areas.</i></p> <p>This new project output was included to promote sustainable production practices in the buffer zones of the project’s 12 MUPAs. Activities such as agroforestry or other activities that mix enhanced forest cover with production activities will contribute to the integration of tropical forest into the multifunctional landscape of the MUPAs, thereby contributing to biodiversity conservation and ecosystem connectivity while at the same time providing a source of livelihood for the local people living within the buffer zones.</p> <p>In addition, sustainable production practices will include: a) agroforestry and silvopastoral systems in at least 2,500 ha to build carbon sinks on agricultural lands, and b) practices that sustain fertility in soils to prevent the cultivation of new lands within PA buffer zones currently under forest</p>

	<p>cover. These activities are in line with GEF guidelines for the LULUCF sector under the CCM-5 Objective for climate change mitigation. Thus, to finance these activities, \$1,310,000 USD CCM-5 funds allocation was transferred from project Component 2 to Component 1. Since the 12 MUPAs and their buffer zones are integral parts of the four prioritized landscapes (i.e., biological corridors), the expected global environmental benefits will still be delivered (improved carbon stocks), and ecosystem connectivity will be enhanced.</p>
<p><i>New financial resources available for PA management derived from government and private funds (i.e., PAs visitors' entry fees – Law 200/2012), REDD+ incentives, and funds leveraged by MUPA management partners (NGOs, private sectors, local governments), among other sources.</i></p>	<p><i>New financial resources available for PA management derived from government and private funds (i.e., PAs visitors' entry fees – Law 807/2012), and funds leveraged by MUPA management partners (NGOs, private sectors, local governments), among other sources.</i></p> <p>A clarification was made that the law that is related to the PA visitor entry fees, which the project will implement to support the MUPAs' financial sustainability, is not Law 200/2012 (as was initially stated in the PIF) but rather Law 807/2012.</p> <p>In addition, REDD+ incentives will not be included as part of the new financial resources available for PA management since carbon credits derived from the GEF-funded ENDE-REDD+ pilot project will not be sold in the carbon market in accordance with the policies of the government of Nicaragua.</p>
<p>PIF Outputs (Component 2)</p>	<p>Project Document Outputs (Component 2)</p>
<p><i>Financial mechanism for the wider landscape in place</i></p>	<p><i>Performance-based compensation mechanism for the wider landscape in place</i></p> <p>Performance-based compensation as part of the GEF-funded ENDE-REDD+ pilot project will not come from the sale of carbon credits in the market. Instead, compensations will be made through FONADEFO, which is a financial mechanism administered by INAFOR that provides resources for the following: a) support forestry programs and projects for SFM, b) increase economic development, c) conserve natural resources, d) develop markets for PES, and e) protect the environment. Performance-based compensation to the GEF-funded ENDE/REDD+ pilot project's local beneficiaries (landowners, including women) will include a forest conservation incentive, including production inputs or plant material, technical assistance and training, and the cost of monitoring and follow-up, among other non-monetary benefits.</p>

80. UNDP's Comparative Advantage: The comparative advantage of the UNDP for the 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). The UNDP currently supports SFM and REDD+ activities in over 25 countries around the world. Under the UN/REDD, the UNDP is currently working in five countries in Latin America and the Caribbean (Bolivia, Panama, Ecuador, Paraguay, and Mexico) on SFM and REDD+ readiness projects with a total investment of over \$30 million USD. In addition, the UNDP has a long history of providing assistance to the GoN in the promotion, design, and implementation of activities that are consistent with GEF mandates as well as with national plans for conservation and sustainable development. The UNDP has been identified by MARENA as the appropriate GEF Implementing Agency for this initiative, given its development experience with multiple GEF projects in biodiversity, land degradation, climate change, and sustainable forest use. The project proposed herein is consistent with the UNDP's Biodiversity and Ecosystems Global Framework 2012-2020, which has an overall strategic objective to "Maintain and enhance the goods and services provided by biodiversity and ecosystems in order to secure livelihoods, food, water and health, enhance resilience, conserve threatened species and their habitats, and increase carbon storage and sequestration."

81. The project is aligned with the United Nations Development Assistance Framework (UNDAF) for Nicaragua 2013-2017; specifically, the project is consistent with UNDAF Product 3.1.1, which seeks to strengthen the capacity of public, community, civil society, and private sector institutions in developing and implementing policies, legal frameworks, and programs related to the environment, natural resources, energy, and water. This project will be under the supervision of the Regional Technical Advisor for GEF and UN-REDD projects in Latin America and the Caribbean, 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 five key staff to manage and monitor project implementation. The project will be managed by the Programme Officer of the Department of Environment, Energy, and Risk Management, who has more than 12 years of experience in the formulation and monitoring of environmental and biodiversity projects, and will receive support from the Area Coordinator. Administrative support will be provided by the Area Manager. Project monitoring and evaluation will be led by the Monitoring and Evaluation Analyst and, when required, will receive support from the Procurement Unit.

82. Coordination with other related initiatives: Actions will be coordinated with the 5-year (2011-2016) GEF-funded project *Integrated Watershed Management in Lake Apanás*, with support from the IADB. In particular, coordination mechanisms will be established for the development of a carbon monitoring system. This project has MARENA as one of its implementing partners, which will facilitate the exchange of information and/or lessons learned between the two projects. Discussion groups will be formed by the projects' coordinators and team members and will meet periodically in person or virtually to share ideas and experiences. The directors of MARENA and the technical team from the Environmental Program and Development Unit will ensure that the lessons learned are taken into consideration during the implementation of the project proposed herein, including the development of a carbon monitoring system to assess carbon flows and benefits. The project will also coordinate actions with the recently approved Special Climate Change Fund (SCCF)-funded project *Adaptation of Nicaragua's Water Supplies to Climate Change*, with support from the World Bank. The SCCF-funded project aims to enhance climate resilience of investments in Nicaragua's rural water supply sector to cope with both increasing climate variability and the expected adverse impacts of climate change in selected areas. Special consideration will be given to climate-related aspects for water resource management in the prioritized project watersheds. Additionally, experiences and lessons learned will also be exchanged with the project financed by the Adaptation Fund, *Reduction of Risks and Vulnerability Based on Flooding and Droughts in the Estero Real River Watershed*, with support from the UNDP, particularly in terms of the development of agroecological practices that are resilient to climate change. Similarly, actions will be

coordinated with the *Environmental program for disaster risk and climate change management* (2011-2015), which is currently under implementation in the Río Viejo and Lake Apanás sub-basins (upper San Juan River Basin, southeastern Nicaragua) with support from the IADB and the NDF. Given the multiple climate-related initiatives in Nicaragua, as part of the Project Preparation Grant (PPG) activities, coordination mechanisms between all projects will be clearly defined and lessons learned will be assessed for their effective incorporation into the final project design. In addition, team members of all related projects currently under implementation will be invited to participate in PPG activities, including the inception and results framework workshops.

83. Lessons learned from the implementation of the GEF-funded project *Strengthening and Catalyzing the Sustainability of Nicaragua's Protected Areas System* will also be incorporated into this project. This PA project has support from the UNDP and has as its objective the effective management of the Nicaraguan NSPA through legal reform, strengthened institutions, sustainable financing, and partnerships. The project's is reaching completion. Added value through this new GEF investment to MUPAs that benefited from the NSPA project include joint PA management through multi-sectoral collaborative agreements, implementation of financial mechanisms to support PA management developed through the NSPA projects (e.g., visitors' entry fees), and a PA management approach that successfully integrates biodiversity conservation and the sustainable use of natural resources in buffer zones to reduce threats originating outside of the PAs. Similarly, lessons learned from the GEF-funded project *Sustainable Land Management in Drought Prone Areas of Nicaragua*, implemented between 2006 and 2011 with support from the UNDP, will be incorporated, particularly: a) the importance of incorporating gender considerations into the project design to ensure the equitable distribution of benefits; b) the necessity of establishing mechanisms for the replication of successful BMPs and experiences with the participation of beneficiary groups to facilitate the extension of these benefits to other local groups; and c) the importance of having flexible mechanisms to facilitate adaptive management. Lessons learned will also be incorporated from the GEF-funded project *Conservation of Dry Forest and Coastal Biodiversity of the Pacific Coast of Southern Nicaragua: Building Private-Public Partnerships* regarding the establishment of lasting relationships between government agencies and civil society, which will be instrumental for the consolidation of biological corridors and effective PA management. This project was finalized in 2010 and was supported in part by the UNDP. Similarly this project will incorporate lessons learned from the Program for the sustainable management of natural resources and promotion of entrepreneurial capacities (MASRENACE) financed by the German Government through the GIZ Agency (2011-2013), implemented in the RAAN and the Bosawas Biosphere Reserve;

84. Coordination mechanisms will also be established with the ENDE-REDD+ strategy for Nicaragua, which has partial funding from the FCPF and support from the World Bank (NITF 099264) (2011-2013). In particular, coordination will be sought for the exchange of information and lessons learned regarding the reduction of emissions from deforestation, the conservation and restoration of carbon stocks, and SFM.

85. Finally, actions will be coordinated with the project *Local Governance in the Catchment Area of Lake Cocibolca*, financed by the European Union (2011-2015), whose objective is to strengthen environmental management and to protect the natural resources of the Lago Cocibolca (or Lago de Nicaragua) watershed.

2.4. Project objective, outcomes, and outputs/activities

86. The project's objective is to strengthen the management effectiveness of multiple-use PAs and the sustainable use of dry and humid forests in the wider landscape in western and north-central Nicaragua to ensure the flow of multiple ecosystem services, ensuring biodiversity conservation, SLM, and climate change mitigation from land use change. The project's incremental approach consists of the following two main components: Component 1 will strengthen the management effectiveness of the 12 MUPAs, and Component 2 will deliver multiple global environmental benefits through sustainable forest and land

management practices implemented in the wider landscape around these PAs. Component 2 activities will facilitate connectivity between the 12 MUPAs in order to constitute four biological corridors: a) Dry Forest Corridor, b) Lake Nicaragua Island Corridor, c) Cumaica Cerro Alegre–Mombachito Cerro La Vieja–Sierra Amerrisque Biological Corridor, and d) Peñas Blancas–Kilambé Corridor (Table 1 and Annex 8.6).

Component 1 – Strengthened capacity and financial sustainability of the multiple-use PAs in dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua.

87. Component 1 will improve the management effectiveness of 12 existing MUPAs in tropical dry forest and humid/semi-humid/cloud forest landscapes. PA management effectiveness will be assessed using the METT. To this end, the project will develop management plans for existing PAs and will update existing management plans to include a landscape approach to biodiversity conservation. Improved governance mechanisms will also include the establishment of multi-sectoral collaborative management committees and management agreements for the administration of 12 existing MUPAs. A monitoring and information system will be put into place under the supervision of MARENA officials and in coordination with local environmental for monitoring and reducing threats to biodiversity in 12 existing MUPAs. The management of the MUPAs will be strengthened through government funding derived from the application of the Law of Conservation and Sustainable Use of Biodiversity (No. 200/2012), which outlines financial mechanisms for the financial sustainability of the NSPA (including country and PAs' visitors entry fees), collaborative management agreements, and other sources identified as part of the financial strategies developed for the NSPA. Component 1 will also improve the capacity of MARENA to effectively deliver PA management functions across MUPAs in dry forest and in humid, semi-humid, and cloud forest landscapes. More specifically, by the project's end, MARENA will have strengthened enforcement and control capacity, a more effective deployment of funds and human resources to address threats to MUPAs and improved administration at its Headquarters, Local Territorial Delegations, and PA staff.

88. After 5 years, the Project's outcomes will include:

- a. The management effectiveness of 12 existing MUPAs in two dry forest landscapes (Chinandenga-Rivas Dry Forest Corridor and Cerro Cumaica Cerro Alegre–Mombachito Cerro La Vieja–Sierra Amerrisque Biological Corridor), the Lake Nicaragua islands, and a humid, semi-humid, and cloud forest landscape (Peñas Blancas–Kilambé Corridor) will have improved from their current average score of 38 to at least 42 as measured by the METT.
- b. The threats facing 12 MUPAs (non-sustainable agriculture and cattle ranching, illegal logging, trade of vulnerable and endangered species, and forest fires) will be reduced across an area of 178,441.93 ha, including:
 - Reduction by at least 10% in area converted annually from forest to land used for agriculture and pastures;
 - Levels of illegal logging of high value timber reduced by at least 10%;
 - The trade of vulnerable and endangered species) reduced by one third; and,
 - Forest fires in tropical dry forest landscapes reduced by 20%.
- c. Vulnerability of threatened biodiversity will be reduced as follows:
 - 104,233 ha of dry forest habitat secured;
 - 21,436 ha of humid, semi-humid, and cloud forest secured; and
 - Stable numbers of key species of biological groups (mammals, birds, and plants) in the prioritized project sites.

Output 1.1 – Planning and monitoring strengthened in 12 MUPAs through:

1.1.1 – Approved management plans for 12 existing MUPAs, defining conservation measures to address threats; defining sustainable off-take limits and specifying management targets, and indicators of success and needs for delivering PA functions:

89. The project will update six existing management plans for MUPAs (Cosiguina, Padre Ramos, Estero Real, Apacunca, Cerro Cumaica Cerro Alegre, and Mombachito La Vieja), will amend four management plans currently under approval (Sierra Amerrisque, Macizos de Peñas Blancas, Cerro Kilambé, and Volcán Maderas), and will develop two new management plans (Volcán Concepción and Istiam Peña Inculca Wetland). Management plan updates and development will be done following MARENA's Institutional Guideline for the Development of Management Plans and will include: a) Descriptive/Context Section that describes and assigns value to the MUPAs' environmental, social, cultural, and institutional aspects; b) Management Considerations Section, which will include the MUPAs' primary conservation objectives; describe threats and conflicts; and establish the land use and natural resources uses in the PA, including zoning; c) Operational Section, where the management actions will be described, including administrative aspects, social and community participation, and public use program; d) Regulatory Component: defines the regulatory aspects of the MPA; and e) Follow-up and Evaluation Component.

90. Management plans will include science-based designs and to improve ecological connectivity between the MUPAs and the surrounding landscape guidelines (for example, IUCN, CBD, and others)¹⁷ and a management framework for monitoring, surveillance, and enforcement as well guidelines for allowable production activities within and between the PAs. Management plan updates and development will be participative and will include consultations with local stakeholders including family, community, and women associations, municipal authorities, and production sectors, in addition to the use of MARENA's Methodological Effectiveness Guideline as a starting point for updating the management plans. Once the management plans are drafted, meetings and workshops will be held with these and other stakeholders for their information and final input. Meetings with municipal authorities and local stakeholders will be held to raise awareness and to establish organizational arrangements for the implementation of the management plans (establishment of committees and partnerships). Final approval of the management plans will be made through a Ministerial Decree; all management plans will be published in the official gazette, will be valid for 5 years as established by Nicaragua's Regulation of Protected Areas (Decree No. 01-2007), and will be implemented through annual work plans. The management plans will be developed during the first 18 months of project implementation in coordination between MARENA Local Territorial Delegations (Rivas, Jinotega, Boaco, Chontales, and Chinandega), the NSPA, and the project team.

1.1.2 – Procedures, roles, and responsibilities defined for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions for grazing, agriculture, and other acceptable production activities.

91. The project will allow the development of procedures, roles, and responsibilities for monitoring, surveillance, and enforcement of sustainable use of natural resources in MUPAs, enhancing MARENA's Division of Protected Areas' capacity for effective PA management. Different tools for the protection and conservation of the country's MUPAs will be developed following guidelines set in the Regulation of PAs and the Biodiversity Act, which will be revised to identify the procedures and regulations required.

¹⁷ Guidelines will include: a) Canet-Desanti, L. 2007. Herramientas para el diseño, gestión y monitoreo de Corredores Biológicos en Costa Rica. Tesis Magister Sc. Centro Agronómico Tropical de Investigación y Enseñanza. Turrialba, Costa Rica. 217 p; b) Canet-Desanti, L., and B. Finegan. 2010. Bases de Conocimiento para la Gestión de Corredores Biológicos en Costa Rica. Mesoamericana 14 (3):11-24; c) IUCN. Connectivity Conservation: International Experience in Planning, Establishment and Management of Biodiversity Corridors. Background paper, 18 pages. Available at: http://cmsdata.iucn.org/downloads/070723_bci_international_report_final.pdf; d) Bennett, G., and Mulongoy, K.J. (2006). Review of Experience with Ecological Networks, Corridors, and Buffer Zones. Secretariat of the Convention on Biological Diversity, Montreal, Technical Series No. 23, 100 pages; and e) Dewi, S. et al. 2013. Protected areas within multifunctional landscapes: Squeezing out intermediate land use intensities in the tropics? Land Use Policy 30(1): 38–56.

In particular the project will allow the development of the following: a) Operational handbook for the Committees for the Protection, Care, Conservation, and Collaboration of Protected Areas: the handbook will include guidelines for the operation of the protection these committees that have established for the granting of PAs in participatory management or co-management. The process will be participatory in nature and will include consultation with local stakeholders for their input and feedback ensuring that procedures for land use prescriptions for different production activities within the MUPAs are defined jointly between PA authorities, local communities, and farmers; b) Operational handbook for the prevention and control of environmental violations: the handbook will include protocols for the management of environment infringements and violations, with particular reference to MUPAs (enforcement of sustainable off-takes for forest products and land use prescriptions) and the procedures for establishing penalties and sanctions. The development of the handbook will include the participation of the Attorney General's Office, the National Police, the Army, and INAFOR, among other enforcement agencies, and will include consultations with local authorities and CSOs; and c) Handbook for the monitoring biodiversity indicator species for different types of ecosystems in priority areas.

92. Key stakeholders will be trained for the implementation of the tools mentioned previously, including local stakeholders. The monitoring, surveillance, and enforcement tools will be developed during years 1 and 2 of project implementation in close coordination between MARENA's Division of Protected Areas and the project team. All handbooks will be made available electronically (MARENA's official web site) and in hard copy to key local stakeholders of the project's 12 MUPAs.

1.1.3 – Information system for sustainable use and management (forest products, agriculture, and grazing) and conservation in MUPAs strengthens decision-making processes and facilitates compliance and monitoring of threats to biodiversity.

93. The project will allow the implementation of a monitoring and information system by MARENA in coordination with local environmental authorities to strengthen decision-making processes and facilitate compliance and monitoring of threats to biodiversity in 12 existing MUPAs. Project efforts will be directed towards strengthening the National Environmental Information System (SINIA-MARENA), which organizes and distributes all environmental information related to Nicaragua. More specifically, the SINIA's regional nodes will be strengthened by establishing PA units with the nodes associated with the 12 MUPAs of the Project. An assessment of the nodes' capacity to manage PA and biodiversity data will be conducted to determine their weakness and strengths. The project will equip and train SINIA's regional nodes staff in biodiversity and PA data-gathering, processing, and reporting, as well as in supporting PA planning and management. Data management platforms will be established that will be linked with the National Biodiversity Information Subsystem to store, organize, and disseminate information regarding the management, protection, conservation, use, management, and research of the country's biodiversity; the Water and Sanitation Information System; and MARENA's official website. The monitoring and information system will include a monitoring and evaluation subsystem to generate the necessary information for monitoring and follow-up of the project with regard to the effective management of the MUPAs and the delivery of global environmental benefits for biodiversity conservation in dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua, including the indicators established in the Project's Results Framework (Section 3).

94. In addition, the project will strengthen MARENA's ability to monitor land use/land cover (LU/LC) change in the project's MUPAs and their surrounding landscapes using remote monitoring to assess threats from the expansion of agriculture, cattle ranching, aquaculture, and other land uses. Remote monitoring will include the use of satellite imagery with field verification to assess LU/LC change and the incorporation of results into MUPA planning and management.

95. The information system for sustainable use management and biodiversity conservation in the MUPAs will be developed during years 1 and 2 of the project, and the assessment of the delivery of global environmental benefits for biodiversity conservation in dry forest and humid, semi-humid, and

cloud forest landscapes as well as LU/LC change monitoring will be performed at least two times during project implementation (years 3 and 5) with the participation of MARENA's Division of Protected Areas and the project team.

Output 1.2 – Management and enforcement framework in place for 12 MUPAs:

1.2.1 – Capacity built within MARENA to effectively deliver PA management functions across MUPAs in dry forest and humid, semi-humid, and cloud forest landscapes.

96. A capacity development plan will be created to strengthen the capacity of MARENA's headquarter staff and Division of Protected Areas officials (men and women), as well as MARENA's Local Territorial Delegations (Rivas, Jinotega, Boaco, Chontales, and Chinandega) and PA staff (men and women) that have jurisdiction over the project's 12 MUPAs. Building on the results of the capacity assessment and needs developed during the PPG phase, MARENA officials and staff will be trained in planning, management, financial management and sustainability, conservation, and monitoring of PAs and biodiversity. Training modules and materials will be designed and a total of 30 national officials and 30 PA staff will be trained by the end of the project through workshops, seminars, and short thematic courses, as well as field visits to the MUPAs to engage in the sharing of knowledge and experiences. Additionally, the development of a training certificate (*diplomado*) will be considered with the participation of accredited national universities. The impact of the training will be assessed through interviews and follow-up, including the application of the UNDP Capacity Development Scorecard¹⁸ (the scorecard will be applied twice more during the life of the project: at the mid-point and finalization), which was used during the PPG to assess baseline capacities.

97. Capacity-building will be maintained throughout the 5 years of the project; the project team, in close collaboration with MARENA's Division of Protected Areas and Human Resources Office, will be responsible for coordinating the implementation of all capacity-building activities. Training will be delivered through public-private partnerships, which will include the government, universities, and private firms. In addition, it will include South-South exchanges on best practices in PA management.

1.2.2 – Multi-sectoral collaborative agreements for shared management of MUPAs define access areas for sustainable use of forest products and offtakes, biodiversity-friendly production methods, agreed-upon management measures, and monitoring and enforcement mechanisms.

98. The project will establish and implement 12 multi-sectoral collaborative agreements for the management of 12 existing MUPAs. The multi-sectoral collaborative agreements will be established between MARENA, private sectors (e.g., agriculture, cattle-ranching, aquaculture, and tourism), NGOs, CSOs, and local governments and will include the creation of management committees to supervise biodiversity conservation, effective MUPAs' management considering the wider landscape, and compliance with the sustainable use of forest products and offtakes and the use of biodiversity-friendly production methods. The specific activities to be developed include: a) identify key stakeholders in PA management for each project MUPA, a joint effort between the project team and MARENA's Local Territorial Delegations (Rivas, Jinotega, Boaco, Chontales, and Chinandega); b) participatory and awareness-raising process to explain to all key stakeholders the importance of collaborative management for achieving biodiversity conservation goals through meetings and other means, as well as to discuss their roles and responsibilities as part of the agreement including shared proposals for the implementation of specific actions for the reduction of threats and conflict resolution mechanisms; c) drafting and signing of 12 multi-sectoral collaborative agreements; d) creation of 12 Collaborative Management and Control Committees to advise, provide technical support, and guide the implementation and monitoring of the agreements; e) development of multi-year work plans for the collaborative management committees with

¹⁸ Bellamy, Jean-Joseph and Kevin Hill (2010), "Monitoring Guidelines of Capacity Development in Global Environment Facility Projects," Global Support Programme Bureau for Development Policy, United Nations Development Programme, New York, USA.

support from the project team and MARENA's Division of Protected Areas; d) training of committee members on best practices in PA management using the training platform outlined in Output 1.2.1; and f) monitoring and follow-up of agreements and assessment of the achievement of the MUPAs' management goals.

99. The multi-sectoral collaborative agreements will follow all existing norms and policies for PA management (e.g., Nicaragua's Regulation of Protected Areas – Decree No. 01-2007) and for biodiversity conservation, and will be in line with the MUPAs' management plans (Output 1.1.1). Legal support for the development of multi-sectoral collaborative agreements for shared management of 12 MUPAs will be provided by MARENA through co-financing. The multi-sectoral collaborative agreements will be in place by the end of year 2 of project implementation and monitoring and follow-up will continue until project completion.

1.2.3 – Strengthening of enforcement (targeting illegal logging, trade of vulnerable and endangered species, uncontrolled slash-and-burn); improved national and local PA authorities' information systems for monitoring threats; protocols for patrolling and reporting malfeasance; capacity to sanction infractions.

100. Enforcement and control plans will be developed and implemented in the 12 project MUPAs to reduce existing threats to biodiversity (e.g., targeting illegal logging, trade of vulnerable and endangered species, uncontrolled slash-and-burn/forest fires); enforcement and control plans will be in line with the management plan for each area (Output 1.1.1). Enforcement and control plans will serve as key management tools to MARENA's PA staff as well as for stakeholders participating in multi-sectoral collaborative agreements for the shared management of the 12 MUPAs (Output 1.2.2). These plans will include a detailed assessment of the threats and stakeholders/sectors exerting pressure on each MUPA; objectives and threat reduction targets; prevention and control activities (e.g., patrolling, boundary enforcement, reporting of violations, and procedures for the sanction of infractions), timeline of activities; budget assessment and resource allocation, and implementation and evaluation of the plan. Enforcement and control plans will also include awareness-raising and environmental education activities so that the different stakeholders (e.g., local communities, CSOs, NGOs, and government agencies) are aware of the permitted activities and restrictions in each of the MUPAs, including knowledge about the existing norms and rules regarding PAs, are educated about the values of biodiversity and ecosystem services, as well as for their participation in the prevention and control of threats, including forest fires.

101. The project will assess the existing enforcement and control plans to identify gaps and needs and will update them where necessary, and will develop plans for the MUPAs that lack this management tool. MUPA staff will be equipped and trained so that they can carry out enforcement activities more effectively. Particular attention will be given to the prevention and control of forest fires, a recurring threat related to slash-and-burn agriculture commonly practiced in the dry and humid forest landscapes of western and north-central Nicaragua. The project will complement existing campaigns to prevent forest fires in the municipalities that surround the project's 12 MUPAs and will train 15 municipal fire brigades using a farmer-to-farmer methodology, with the support of INAFOR and MARENA's Local Territorial Delegations.

102. Additionally, patrolling protocols will be developed for all 12 MUPAs indicating patrolling frequencies, routes, reporting of malfeasance, and instructions on how to proceed when confiscations of biodiversity and/or related products are made. Patrolling protocols will be in line with the 12 MUPAs' management plans and annual work plans, as well as with Nicaragua's Regulation of Protected Areas. Patrolling protocols will be reviewed periodically by the project team in close collaboration with MARENA's Local Territorial Delegations and the MUPA staff to discuss progress and make adjustments as required.

103. To improve national and local PA authorities' capacity for monitoring threats to MUPAs, MARENA's existing information systems will be evaluated to determine their strengths and weaknesses

in order to establish clear informational links between the components of biodiversity to be conserved, human and natural factors threatening biodiversity, and the needed interventions to reduce threats and their impact. Hardware and software will be updated as needed; data bases and data-gathering, processing, and reporting protocols will be developed and/or updated to ensure that information about the threats is effectively used for decision-making and will guide adaptive management. Protocols for reporting information gathered in the field (e.g., patrolling and enforcement and control plans) will be developed so that information is effectively reported, systematized, and articulated with the SINIA's regional PA nodes (Output 1.1.3).

104. Enforcement and control plans, patrolling protocols, and information management system for monitoring threats to biodiversity will be developed and/or strengthened during years 1 and 2 of the project and threats will continue to be monitored until project completion.

1.2.4. Sustainable production practices to prevent deforestation in the buffer zones of protected areas.

105. The project will implement sustainable production practices in the buffer zones of the project's 12 MUPAs. Sustainable production practices will include agroforestry and silvopastoral systems and other activities that mix enhanced forest cover with production activities that contribute to the integration of tropical forest into the multifunctional landscape of the MUPAs, thereby contributing to biodiversity conservation and enhancing ecosystem connectivity, while at the same time providing a source of livelihood for the local people (including women) living within the buffer zones. Sustainable production practices will be implemented following MARENA's Environmental Rehabilitation Systems Program (ERSP) protocols and guidelines. The ERSP was developed by MARENA as part of the Social Environment for Forestry Development Projects (POSAF I and POSAF II) that was implemented between 2002 and 2012 with funding from the EuropeAid Cooperation Office (EuropeAID). It includes five categories (eco-forestry coffee, agroforestry systems, silvopastoral systems, natural regeneration management, and forest management) and 21 different types of BMPs that contribute to ecosystem conservation.

106. Sustainable production practices in the buffer zones will be aligned with the management plans of the 12 MUPAs (Output 1.1.1), and will include agroforestry and silvopastoral systems in at least 2,500 ha to build carbon sinks on agricultural lands and practices that sustain fertility in soils to prevent the cultivation of new lands within PA buffer zones currently under forest cover. Their implementation and monitoring will take place during years 2 through 5 of the project.

Output 1.3 – Financing in place for 12 MUPAs:

1.3.1 – New financial resources available for PA management derived from government and private funds (i.e., PAs visitors' entry fees – Law 807/2012), and funds leveraged by MUPA management partners (NGOs, private sectors, local governments), among other sources.

107. The project will secure new financial resources for PA management from three different sources: the national government, PA visitation, and contributions from private and public donors as follows.

108. The project will develop the management procedures for the implementation of the Biodiversity Account, which will be included as part of the National Environmental Fund (Law No. 217, General Law of the Environment and Natural Resources), and will support the protection of biodiversity through PAs as established by Law No. 807 (Law of Conservation and Sustainable Use of Biodiversity). The Biodiversity Account will be funded through: a) government contributions; b) grants and international cooperation funds; c) payments from environmental licenses, permits, and contracts of access/use of biodiversity, and d) fines related to negative impacts to biodiversity and natural resources. The latter includes PAs visitors' entry fees, which are currently set at \$2.00 USD for nationals and \$10.00 USD for adult international visitors (\$5.00 USD for children under 12 years old).

109. Tourism in Nicaragua has grown considerably over the last decade, and it is now the second largest industry in the nation. According to the World Bank, Nicaragua received close to 1.2 million tourists in 2012, an almost 20% increase compared with 2010. The project will build upon the country's tourism potential to attract more visitors to the MUPAs and will develop the management procedures to ensure a more effective reinvestment of visitor revenues and related fees to help cover the management costs of the project's MUPAs. The project will support promotional campaigns to raise public awareness about Nicaragua's MUPAs and the increasing supply of ecotourism services in these and other PAs of the NSPA, as well as in their surrounding landscapes. Existing protocols and mechanisms for collecting visitor and service fees will be assessed to identify weaknesses and gaps, including identifying MUPAs that do not currently collect fees. New and/or additional mechanisms for collecting fees will be implemented in the 12 MUPAs and may include collecting visitors' fees onsite or collecting fees in advance through an online payment system, through tourism operators, and direct deposits to the Biodiversity Account. To ensure that the revenue from visitors are set aside to be used in support of the MUPAs' management, a sub-account will be created and the project will support MARENA's Division of Protected Areas for the development of the management procedures for channeling the funds from the PA sub-account in support of MUPA management. Legal support for the implementation of Law No. 807/2012 (PAs visitors' entry fees) will be provided by MARENA through co-financing.

110. Additionally, funds will be leveraged by MUPA management partners, including participants in multi-sectoral collaborative agreements (private sectors, local NGOs, CSOs, and local governments; Output 1.2.2). Potential donors may include international NGOs, private donors, and bilateral and multilateral donors. According to the financial sustainability analysis completed during the PPG (BD-1 Tracking Tool), donor funds totaled only \$7,000 USD for the year 2014; as a result of the project, donor funds are expected to increase up to \$600,000 USD by project end. Stakeholders will receive training to better screen, assess, and define funding strategies; including the development of business plans to better engage donors, the private sector, and the government, and taking full advantage of available funding opportunities.

111. Efforts for securing new financial resources for PA management will begin by year 2 of project implementation and will continue until project completion, with the participation of the project team and MARENA's Division of Protected Areas.

1.3.2 – Effective deployment of funds and human resources to address threats to MUPAs.

112. The project will assess existing procedures within MARENA for effective budget and human resources allocation methods to achieve conservation goals and address threats in the 12 MUPAs. This will be done considering the results of the individual METTs and the Financial Sustainability Scorecard results for all MUPAs that were evaluated during the PPG. More specifically, the project will allow the following: a) build awareness among PA decision-makers about existing financial needs and gaps (as per the Financial Sustainability Scorecard) to ensure an increase in the assignment of funds and their timely disbursement; b) strengthen procedures to ensure that the transferred funds are effectively invested in MUPA management; b) strengthen procedures for the reinvestment of revenues (e.g., PES, tourism entrance fees and other related fees, concession fees, non-tourism related fees and charges, etc.) in the MUPAs; c) develop mechanisms for assigning human resources for conservation and management goals as defined in the MUPAs' management plans; and d) assess gaps and needs with regard to staff numbers at the site level, as well as training and equipment needs, to address threats to the MUPAs. By project end, all 12 MUPAs will be properly staffed in accordance with the PAs basic management needs and their management plans. PA staff will be paid through co-financing, government budgets, and new financial resources available for PA management (Output 1.3.1).

113. The needs assessment will be completed during the first year of the project and the activities to strengthen procedures and mechanisms for the deployment of funds and human resources to address threats to MUPAs will be completed by the end of year 2 of the project. The application of the BD-1

Tracking Tool (individual METTs and the Financial Sustainability Scorecard) during years 3 and 5 of the project will assess the impact of the planned activities; the project team and MARENA's Division of Protected Areas will be responsible for implementation.

1.3.3 – Cost-effective administration (including financial management and personnel administration) at MARENA's Headquarters and in Local Territorial Delegations.

114. The project will assess the existing administrative systems and institutional structures within MARENA (both at the headquarters level and in Local Territorial Delegations [Rivas, Jinotega, Boaco, Chontales, and Chinandega] with jurisdiction over the 12 prioritized MUPAs) to identify weaknesses and strengths more cost-effective management according to international standards (e.g., IUCN and CBD). With regard to financial management, the following will be considered: a) procedures for securing budgets; procedures for financial planning, administration, and reporting; measuring income and expenses and comparing this information against annual budget plans; b) asset management (e.g., infrastructure, equipment, and local/access roads to PAs, etc.); and c) processes for accountability. Similarly, processes within the operational framework will be evaluated, including contracting processes, work environment and safety, compensation mechanisms and benefits, staff training, and processes for evaluating and monitoring staff performance.

115. Where necessary, the project, in close coordination with MARENA's Division of Protected Areas, will make proposals to improve administrative structures and systems in order to: a) enhance financial management consistent with statutory requirements and auditing processes; b) strengthen budget and financial monitoring systems; c) improve mechanisms for recruiting and human resources management; d) strengthen capacity and skills development; and e) develop administrative policies and procedures so that they effectively support biodiversity conservation goals.

116. Existing administrative systems and institutional structures will be evaluated during the first year of the project and proposals for their improvement will be developed and implemented starting year 2 and until project completion.

Component 2 – Multiple global environmental benefits generated through sustainable forest and land management outside MUPAs.

117. Component 2 will allow the delivery of multiple global environmental benefits through SFM and SLM between MUPAs. The project will improve the ecosystem structure and functionality of three tropical dry forest landscapes and in one humid, semi-humid, and cloud forest landscape by promoting connectivity between existing MUPAs and the forest remnants between them in order to consolidate four biological corridors (Chinandenga–Rivas Dry Forest Corridor, Cumaica Cerro Alegre–Mombachito Cerro La Vieja–Sierra Amerisque Biological Corridor, Lake Nicaragua Islands Corridor, and Peñas Blancas–Kilambé Corridor). The institutional capacity for supporting the sustainable management and conservation of the wider landscape between MUPAs will be strengthened, including: a) the capacity of national and regional officials and field personnel to support the use of SFM/REDD+ methodologies, the quantification and evaluation of carbon flows, and the development of strategies to conserve biodiversity; and b) the capacity for municipal authorities to implement SFM, SLM, and climate change mitigation measures, as well as for effective monitoring and enforcement. In addition, municipal authorities will be equipped with Geographic Information System (GIS) mapping tools to implement SFM and SLM, including the implementation of land use plans and ecological zoning for the consolidation of biological corridors connecting the MUPAs. At the farm level, integrated farm management plans specifying the spatial and temporal arrangements of different land uses across farms will be in place, allowing farmers to improve on-farm sustainability, including the implementation of agroforestry and silvopastoral systems, and to improve ecosystem connectivity within and between farms. To facilitate the implementation of sustainable production practices, the project will train 40 municipal technical staff and 500 farmers and community members in the use of SFM, SLM, and biodiversity conservation tools.

118. One performance-based compensation mechanisms for the generation of global environmental benefits in MUPA landscapes through a GEF-funded ENDE-REDD+ pilot project will provide the incentives required for the conservation of tropical humid forest blocks within the landscape. The GEF-funded ENDE-REDD+ actions will reduce GHG emissions in a 30,000 ha of humid, semi-humid, and cloud forest landscape through a 25% reduction in deforestation.

119. Ecosystem connectivity will be enhanced through the natural rehabilitation of 2,000 ha of degraded dry forest and humid forest areas. In addition, municipal-level monitoring and enforcement systems will facilitate decision-making and the assessment of SFM/SLM and biodiversity conservation benefits. The development of the monitoring systems to assess the project's benefits will make use of existing initiatives, including those being carried out as part of the GEF-funded project *Integrated Watershed Management in Lakes Apanás* to assess carbon flows (PPG activities will include the assessment of existing monitoring systems) and will be linked to existing platforms such as the SINIA and the ENDE's monitoring system.

120. After 5 years, the project's outcomes will include:

- a. Ecosystem structure and functionality of tropical dry, humid, semi-humid, and cloud forest landscapes are strengthened through the consolidation of four biological corridors improved through:
 - Connectivity between remnants of endangered tropical forest habitat outside MUPAs is increased by 10%, improving ecosystem resilience to climate change, and providing refuge for globally important biodiversity (tropical dry forests, at least 25,000 ha; humid, semi-humid, and cloud forest landscape, at least 30,000 ha outside MUPAs).
 - A stable population of indicator species facilitated by the biological corridor as a result of enhanced connectivity.
 - Restored carbon stocks of threatened tropical forest over a 5-year period (i.e., project length):
 - a) tropical dry forest: 26,862 tCO₂-eq (1,000 ha rehabilitated);
 - b) tropical humid, semi-humid, and cloud forest: 35,816 tCO₂-eq (1,000 ha rehabilitated).
 - Sustained water flows in 10 watersheds.
- b. At least 25% reduction in humid, semi-humid, and cloud forest landscape deforestation: 137,127 tCO₂-eq over a 5-year period (i.e., project length) (baseline area = 30,000 ha; areal biomass).
- c. Increase in up to 15% in the management and technical capacity of 270 municipal officials and local communities in dry and humid forest landscapes as measured by capacity development indicators.

Output 2.1 – Land use planning, monitoring, and enforcement strengthened in landscapes around MUPAs:

2.1.1 – Strengthened institutional capacity of national and regional officials and field personnel to support the sustainable management and conservation of dry and humid forest production landscapes, the use of SFM/REDD+ methodologies, the quantification and evaluation of carbon (C) flows, and the development of strategies to conserve biodiversity.

121. The project will strengthen capacities of national and regional officials and field personnel (men and women) with regard to SLM, SFM, ENDE-REDD+, assessment of carbon flows, and biodiversity conservation. The training activities will be designed based on the results of an analysis of the skills and knowledge of the project themes (biodiversity conservation, SFM/REDD+, SLM, and climate change) that was completed during the PPG phase, as well as the results of the evaluation of the application of capacity development indicators (UNDP's Capacity Development Scorecard). The assessment of training needs will be complemented through structured interviews with PA staff from each of the 12 MUPAs. The training activities that will be developed are the following: a) design a training program that incorporate training modules for biodiversity conservation, ENDE-REDD+, SLM, and climate change; b)

conduct workshops and field training sessions for at least 22 field personnel, including PA staff); c) design and develop training guides (at least one for each topic); d) conduct national and international training tours to share knowledge and experiences among the areas of work of the project; and e) evaluate the impact of training through interviews and the application of UNDP's Capacity Development Scorecard. The scorecards will be applied twice during the life of the project: at the mid-point and end of the project.

122. The project will strengthen the skills of MARENA's Local Territorial Delegations (Rivas, Jinotega, Boaco, Chontales, and Chinandega) and MUPA personnel in the management and consolidation of biological corridors to create ecosystem connectivity between endangered tropical forest habitats outside of the MUPAs. Concepts regarding ecosystem structure and functionality of tropical dry, humid, semi-humid, and cloud forests will be reinforced, and skills will be developed for monitoring biodiversity that include changes in populations of indicator species, biodiversity resilience to climate change, and design of biological corridors and monitoring, following science-based guidelines. Staff from MARENA's Local Territorial Delegations will also be trained in assessing land degradation, including the use of methodologies for estimating soil loss and degradation resulting from unsustainable agricultural and cattle-ranching production practices and estimating water flows at the watershed level. Computer equipment (hardware, and software) and field measuring equipment (forestry, soils, and hydrology) will be provided to support the implementation of SLM, SFM, ENDE-REDD+, assessment of carbon flows, and biodiversity conservation activities at the local level. Finally, the staff will strengthen their understanding of ENDE-REDD+ and the related challenges and opportunities, the development of the baseline for the GEF-funded ENDE-REDD+ pilot project, the relationships between forests and climate change, and the assessment of carbon stocks, as well as other topics outlined in Nicaragua's R-PP.

123. The training will be delivered throughout project implementation, particularly during years 1 and 2, so that the skills required for the delivery of global benefits are in place in a timely manner. The project will use existing in-country capabilities and resources for the delivery of the training, including universities, research centers, and government agencies. Additionally, the project will make use of available training resources within the region (e.g., National Biodiversity Institute [INBio] and Center for Tropical Agricultural Research and Higher Education [CATIE], Costa Rica) and internationally (e.g., UN REDD+, FAO, and Internationale Weiterbildung und Entwicklung – InWEnt).

2.1.2 – Training and logistical support provided to municipal environment authorities, for implementing SFM, SLM, and CC mitigation measures, as well as their enforcement capabilities: compliance monitoring with land use planning structures; spatial and field surveys and other surveillance measures to assess compliance; and improved policing and capacity to sanction infractions.

124. Forty (40) municipal technical and management men and women staff from 15 municipalities in the prioritized dry and humid forest landscapes (Wiwili, El Cua, Somotillo, Villanueva, Morazán, El Viejo, San José, Camoapa, Boaco, Santa Lucía, Comalapa, Juigalpa, Cuapa, Moyogalpa, and Altagracia) will be trained through the project in SLM, SFM, and climate change mitigation techniques to facilitate the implementation of related activities and the enforcement of related norms. A training program will be designed based on a certificate course in ENDE-REDD+ (*diplomado*), which will provide dynamic and flexible training for deepening and updating knowledge about SLM, SFM, and climate change mitigation. The certificate in ENDE-REDD+ will be a long-distance/modular training program training and recognized academic institutions from the region (e.g., CATIE) will invited to deliver the training within Nicaragua. MARENA and the project team will work closely with the academic institution selected to deliver the training to define the specific contents of the certificate course in ENDE-REDD+. Additionally, the project will fund the participation of municipal environmental authorities (up to 25 people) in similar courses offered in Central America and/or Latin America.

125. The project will also provide logistical support to the 15 municipalities in the form of computer equipment (hardware, and software) and field measuring equipment (forestry, soils, and hydrology) to

enhance their skills as environmental authorities. By project end, the 15 municipalities will have improved skills and capabilities for land use planning and monitoring, SLM, SFM, and climate change monitoring at the field level, and improved policing and capability to penalize infractions.

126. Training will be delivered starting year 2 of project implementation and its impact will be assessed through interviews, document review, and follow-up conducted in the field about what was learned and through the application of the UNDP Capacity Development Scorecard (the scorecard will be applied twice during the life of the project: at the mid-point and end of the project).

2.1.3 – Municipal-level GIS mapping tool of SFM/SLM and BD benefits guide the development and implementation of land use plans and ecological zoning for the consolidation of biological corridors connecting MUPAs.

127. The project will put into place spatial and field-based tools that will enable the 15 municipalities with jurisdictions over the four prioritized biological corridors connecting the 12 project MUPAs to improve the development and implementation of land use plans and ecological zoning for the consolidation of the corridors, including the development of sustainable management plans for 10 watersheds in dry forest landscapes. These include a municipal-level GIS mapping tool to assess SFM, SLM and biodiversity benefits and an information management system that will store, manage, and make use of environmental data, including data from INAFOR's permanent sample plots (PSP) within the biological corridors. With the support of a computer and environmental information management expert, the existing computer/information platforms within the 15 municipalities will be evaluated to identify their needs. Based on this assessment, the project will strengthen or install an information platform (software, hardware, and data bases) within the environmental management units (EMUs) of each municipality, which will be interconnected to allow the exchange of information regarding SFM, SLM, and biodiversity conservation and that will allow access by the SINIA's regional nodes (Output 1.1.3). To facilitate the exchange and use of information, the project will also strengthen the SINIA's regional nodes by developing a SFM, SLM, and biodiversity module compatible with the information systems of each EMU.

128. Sustainable management plans for 10 watersheds in dry forest landscapes (Istiam River [Basin 69], Mayales River [Basin 69], Fonseca River [Basin 69], Estero Real River [Basin 58], Tuma River [Basin 55], Cúa River [Basin 53], Bocay River [Basin 53], Aquespalapa River [Basin 58], Viejo River [Basin 64], and El Obraje River [Basin 64]) will include guidelines for sustained flows and reduced soil degradation and desertification. The activities to achieve sustained water flows and the reduction of land degradation and desertification will be designed to reduce the degradation of the dry ecosystems, including the remaining tropical dry forest patches. The project will develop active restoration activities that include feasible actions implying manipulation of the system, whether they are through removal or introduction of material or the modification of the physical environment. These activities may include the following: a) vegetation management (e.g., direct seed placement, regeneration cores, and improved tree stocks) and b) management of the physical environment (e.g., gully management). The objectives of the activities are to increase water regulation capacity through the reduction of superficial runoff and the loss of soil. The development of the sustainable management plans for the 10 watersheds will involve a participatory process to bring together multiple stakeholders, including municipal authorities, land owners, government agencies (e.g., MAGFOR/INAFOR, INTA, National Water Authority [ANA], and INETER), MARENA's Division of Water Resources and Watersheds, and universities and research centers (e.g., UNA), and will include the installation of water gauges for monitoring water flows in the prioritized rivers during the first year of the project. The sustainable management plans for the 10 watersheds will be completed by year 2 of the project; the implementation of these plans will continue until project completion.

129. Finally, the EMU and SINIA staff will be trained for the effective operation and management of the GIS mapping tool and the information management system, including watershed modeling to assess water quantity and water quality, which will be in operation beginning in year 2 of project implementation.

2.1.4 – Municipal-level monitoring and enforcement systems facilitate decision-making and the assessment of SFM/SML and biodiversity benefits in dry and humid forest landscapes.

130. The project will implement monitoring and enforcement systems to assess SFM, SLM, and biodiversity benefits in dry and humid forest landscapes in western and north-central Nicaragua. The monitoring and enforcement systems will operate within the EMUs of the 15 municipalities that are prioritized by the project and will facilitate decision-making at the municipal level for improved environmental management and control. The development of the municipal-level monitoring systems will include: a) design and set up of the monitoring systems following existing national and project protocols for data-gathering and using the computer/information platforms of the GIS mapping tool and the information management system to be developed through project Output 2.1.3; b) train EMU and SINIA staff in data-gathering, database management, and reporting; c) conduct periodic data-gathering in selected landscapes of the prioritized municipalities, including the monitoring of the presence on indicator species; d) analyze information jointly with the project team and MARENA's territorial staff; and e) report the results to the various stakeholders local and regional stakeholders, particularly those participating in the implementation of integrated farm management plans (Output 2.2.1), the rehabilitation of degraded areas (Output 2.2.1), and in multi-sectoral collaborative agreements for the shared management of MUPAs (Output 1.2.2), as well as with other municipal and regional authorities. The indicators used for municipal-level monitoring systems will include those defined in the Strategic Results Framework (see Section 3.2 of this Project Document) to facilitate project monitoring and assess the overall impact of the project, including the consolidation of the biological corridors. MARENA will provide support to the project team and the EMU staff to ensure that monitoring protocols are followed and data systems are articulated according to SINIA standards so that information can be shared efficiently and contribute to national SFM, SLM, and biodiversity conservation indicators.

131. For the municipalities with jurisdiction within a 30,000-ha landscape of humid forests in the Peñas Blancas–Kilambé Corridor (north-central Nicaragua) where a GEF-funded ENDE-REDD+ pilot project will be implemented (Output 2.3.1), the project will implement a monitoring, reporting, and verification (MRV) system that will monitor carbon flows, including measures to monitor carbon emissions or removals due to land use and land cover (LU/LC) change due to deforestation, degradation, conversion, afforestation, and natural regeneration. The project will support the development of a protocol for establishing the GEF-funded ENDE-REDD+ pilot project baseline, leaks, permanence, under-performance, accounting of emissions reductions, and governance, among others. The protocol will include specific indicators, such as verification mechanisms and frequency of measurements. The protocol will be consistent with the ENDE-REDD+ national standards and readiness guidelines as established in Nicaragua's R-PP. The municipal-level MRV will be articulated to the ENDE-REDD+ national monitoring system and MARENA's Division of Climate Change GIS, and will operate within the environment of the GIS mapping tool and the information management system to be developed for the municipalities through Output 2.1.3 for assessing SFM benefits. EMU staff will be trained in all aspects related to MRV.

132. To facilitate the design of both the municipal-level monitoring and enforcement systems to facilitate the assessment of SFM, SLM and biodiversity benefits and the GEF-funded ENDE-REDD+ pilot project MRV system, workshops with the participation of national experts (MARENA, INAFOR, MAGFOR, INETER, and national universities) will be held at the national and regional levels to design and validate the systems. Subsequently, workshops will be held with groups of the municipalities (one per biological corridor) to receive their inputs and make arrangements for the implementation of the systems. The monitoring and enforcement and MRV systems will be in place by the end of year 2 of the project through the end of the project. During implementation, the municipalities will receive technical assistance

from the project team, MARENA, INAFOR, and MAGFOR, and from the team implementing the GEF-funded ENDE-REDD+ pilot project (Output 2.3.1).

Output 2.2 – Integrated farm management delivers multiple global environmental benefits:

2.2.1 – Integrated farm management plans specifying the spatial and temporal arrangements of different land uses across farms in dry and humid forest landscapes allow farmers to improve on-farm sustainability (including the implementation of agroforestry and silvopastoral systems) and improved ecosystem connectivity.

133. The project will promote BMPs to improve soil, forest, water, carbon, and biodiversity conservation in selected farms in production landscapes outside of the MUPAs. In addition to improving on-farm sustainability and farmers' well-being, BMPs will contribute to improving ecosystem connectivity. To this end the project will develop integrated farm management plans in each of the four prioritized landscapes and watersheds (Output 2.1.3) for at least 170 farms, including women-owned farms. The farms will be located in areas that are near forest remnants to maximize ecosystem connectivity benefits and in areas of importance for the protection of water sources, including areas that serve to recharge natural water reservoirs and the stabilization of stream and river banks.

134. The integrated farm management plans will include references to the importance of the dry and humid forest ecosystems and the environmental services and goods that they provide (e.g., reduced soil erosion, water regulation and storage, carbon storage, habitat for biodiversity, food production, timber and firewood, etc.), as well as the risks and threats associated with their degradation. In addition to the environmental benefits associated with sustainable farming, they will generate increased income for the landowners (or landholders) through increased production. In turn, the increased production will provide sustainability to these activities. As part of the support provided by the project to farmers, agreements will be established with the owners/users requiring them to actively maintain on-farm sustainable production practices beyond completion of the project.

135. The specific activities for the development of the integrated farm management plans are the following: a) select the participating farms through local workshops and field visits in each of the four prioritized landscapes and watersheds (Output 2.1.3); b) establish agreements for the implementation of BMPs (including agroforestry systems, silvopastoral systems); c) draft plans, including a biophysical and agroecological farm assessment to specify SFM and SLM activities to be implemented (i.e., BMPs); d) provide technical assistance for implementation of BMPs; and f) perform participatory monitoring and evaluation, including a synthesis of the lessons learned. The farmers' knowledge and local experiences (including knowledge from women in the communities) will be considered in the development of the integrated farm management plans. This includes making monitoring systems accessible that are farmer-friendly and rigorously monitor the impact of land management on soil quality (e.g., using bio indicators for soil quality)¹⁹ and estimates of soil erosion (Universal Soil Loss Equation – USLE)²⁰. Changes soil quality and soil erosion will be evaluated as part of the municipal-level monitoring system to assess SLM benefits in dry forest landscapes (Output 2.1.4).

136. Up to 240 community members and farmers (including women) will be trained for the implementation and monitoring of integrated farm management plans. The integrated farm management plans will be developed during years 1 and 2 of the project, and their implementation and monitoring will take place during years 2 through 5.

¹⁹ Rousseau, L. et al. 2013. Soil macrofauna as indicators of soil quality and land use impacts in smallholder agroecosystems of western Nicaragua. *Ecological Indicators* 27: 71-82.

²⁰ The USLE is a widely used mathematical model developed by the US Department of Agriculture (1965) that describes soil erosion processes: $A = RKLSCP$, where A = average annual soil loss; R = rainfall and runoff; K = soil erodibility; L = slope length; S = slope steepness; C = cover and management; and P = support practice.

2.2.2 – Two thousand ha (2,000) of dry and humid forests set asides enhanced through natural rehabilitation of degraded areas.

137. To enhance ecological connectivity between natural forest remnants in productive landscapes within four biological corridors and the existing MUPAs, the project will promote the rehabilitation of 2,000 ha of degraded areas. Forests will be set aside for natural regeneration and will be established in municipal and/or private lands through agreements between municipal authorities and/or landowners, the project, and MARENA. The rehabilitation of degraded areas through natural regeneration will follow established protocols developed by MARENA's ERS (e.g., natural regeneration management) and will include: a) management plans to be defined jointly with the municipal authorities and/or landowners participating in the rehabilitation activities; and b) forest, carbon, and biodiversity inventories to quantify the environmental benefits of the intervention. Inventories will be participative in nature and all related data will be available through the municipal information and monitoring systems (Outputs 2.1.3 and 2.1.4).

138. The selection of the degraded areas to be rehabilitated will be made during the first years of project implementation, during which a consultation process will take place with the landowners (private and or communal lands) and municipal authorities (local public lands) to establish the scope of activities that will be developed on their lands, based on the needs to restore dry and humid forest cover and soil structure and function. The agreements will be ratified through memorandums of understanding or signed contracts and will include the approval of the management plans and activities to be implemented, by all parties. The agreements will be established during the second year of the project and all related rehabilitation activities will be implemented through the end of the project, including the monitoring of global environmental benefits (e.g., forest cover, forest and soil carbon stocks, conservation of biodiversity, and improved ecosystems connectivity) and local environment benefits for landowners and municipalities (e.g., increase in water flows, reduced soil erosion and loss, increase in soil fertility and organic content, among other benefits). The natural rehabilitation of degraded areas, together with integrated farm management plans (Output 2.2.1) and sustainable management plans for 10 watersheds will improve ecological connectivity between existing MUPAs and dry forest patches in 25,000 ha of productive landscapes and of humid forest patches in a 30,000 ha productive landscapes. The natural rehabilitation of degraded areas and the associated environmental benefits will be achieved through co-financing, more specifically through partnerships for prosperity that MARENA will establish with MEFCCA and MAGFOR within the framework of the Adapting to Markets and Climate Change Project (NICADAPTA) to be implemented in the Department of Jinotega, including coffee and cocoa crops (humid forest landscapes), and the Livestock Development Program to be implemented in the Baoco and Chontales departments (dry forest landscapes).

Output 2.3 – Performance-based compensation mechanism for the wider landscape in place:

2.3.1 – One performance-based compensation mechanism in MUPA landscapes by means of ENDE-REDD+ provide a utilitarian incentive for the conservation of humid forest blocks covering 30,000 ha.

139. The project will implement a GEF-funded ENDE-REDD+ pilot project that will provide utilitarian incentives for the conservation of humid forest blocks covering 30,000 ha in the Peñas Blancas–Kilambé Corridor in north-central Nicaragua. The prioritized area for the GEF-funded ENDE-REDD+ pilot project will be analyzed against the criteria of the Jurisdictional and Nested REDD+ of the Verified Carbon Standard (VCS-JNR). The GEF-funded ENDE-REDD+ pilot project includes the lands of rural communities that are at risk of deforestation due to unplanned land use changes. Thus the project is within the Agricultural, Forest, and Other Land Uses category (AFOLU). In addition, the GEF-funded ENDE-REDD+ pilot project will comply with all guidelines and requirements of Nicaragua's ENDE. The development of the GEF-funded ENDE-REDD+ pilot project will consist of the following components, as described below.

140. First, an interinstitutional work group will be formed to include various national agencies (e.g., MARENA, INAFOR, and MAGFOR), regional and local authorities (e.g., municipalities), and CSOs

with have knowledge and interest in the development of ENDE-REDD+ activities in the prioritized area where the GEF-funded ENDE-REDD+ pilot project will be implemented. The key activities are:

- Conduct a workshop with institutions and organizations that are interested in establishing an alliance, as well as a work committee to develop a baseline for emissions from deforestation for the prioritized site. In addition, develop a SFM/REDD+ work plan with the participation of the benefitting municipalities and communities. This activity will be developed by the project team during the first year of project together with the institutions and organizations identified by the project team and MARENA. Synergies will be established with other stakeholders, processes, and financing resources so that the development of the GEF-funded ENDE-REDD+ pilot project is feasible in the prioritized municipalities.
- Establish agreements of inter-institutional cooperation for the development of the baseline in the prioritized site and for the development of a Project Description Document (PDD). This activity will be facilitated by the project team during the first year of project implementation.

141. Second, develop the emissions baseline or reference scenario for the prioritized site. The interinstitutional work group formed will contribute to the creation of the baseline, supplying available information. In addition, a guiding committee will be established to supervise and guide the work and establish the necessary linkages with the national and regional institutions to obtain political and technical support so that the process is articulated with the development of the ENDE-REDD+ in Nicaragua. The specific activities for the second phase of work are:

- Establishment of a technical group with experience in the REDD+ and baseline development to assist in the collection of data and to establish the baseline following the VCS-JNR requirements and the national methodological framework (ENDE).
- Collection of available data and information by the members of the institutional work group (changes in forest cover, current land use, carbon stocks, and spatial variables required for modeling deforestation, etc.) and identification of information gaps.
- Workshop to present the information gathered and gaps to the relevant stakeholders, to discuss the strategy for collecting missing information and to establish a work plan for such purpose.
- Generation/collection of the missing information (for example, GPS survey of access roads not registered in the digital maps obtained, measurement of carbon stocks, analysis of remote sensing images, etc.) by the participating institutions with support from the technical group.
- Development of a technical (literature review) and participatory (workshops) analysis of the agents and causes of deforestation.
- Integration of all information gathered in MARENA's Division of Climate Change GIS and the municipal-level GIS and monitoring and enforcement systems (Outputs 2.1.3 and 2.1.4) by the technical group.
- Generation of spatially explicit deforestation scenarios for the prioritized sites applying a methodology approved by the VCS-JNR and national protocols for ENDE-REDD+.
- Estimation of the baseline emissions associated with the deforestation scenario selected by the technical group.
- Validation and registration of the baseline scenario for the prioritized sites with VCS-JNR.

142. The above activities will be developed during the first and second years of project implementation; activities will be promoted by the project team with the participation of the agencies that form the inter-institutional work group (MARENA, INAFOR, municipalities, etc.). The validation of the baseline for the prioritized sites by VCS-JNR will be performed initially during the second year 2 of the project with a VCS evaluator.

143. Third, the project will work closely with authorities of the municipalities with jurisdiction over the prioritized site to review their forestry policies, systems of forest governance, needs for capacity strengthening, and other key issues. This information, together with the baseline information of the

prioritized region, will be considered in the development of a PDD for validation and verification. This procedure will be developed in accordance with the specifications established by a standard selected to be submitted to the VCS-JNR that includes the following activities:

- Detailed review of the prioritized sites: pre-feasibility analysis, Project Idea Note (PIN), and selection of the project.
- Consultation with interested parties and identification and training of local partners for project development. This will include planning workshops with the municipal authorities and representatives of community organizations and national and regional agencies (MARENA, INAFOR, and MAGFOR) to define the REDD+ intervention strategy in each site, including final definition of the GEF-funded ENDE-REDD+ pilot project site, identification of the potential proponents of the project, definition of the project activities, and their cost and financing mechanisms. The project's proponents will need to demonstrate that they have land ownership and rights over the GHG emissions reductions in order to receive the benefits. Potential conflicts over ownership rights to the emissions reductions or the mechanisms for performance-based compensation will be resolved following the national and local governance structure defined under ENDE.
- The GEF-funded ENDE-REDD+ pilot project activities will be defined in a participatory manner, with consideration provided for municipal policies and development plans and the plans and projects of other entities involved in the project sites. In addition, the following aspects will be considered: a) the distribution of costs and benefits among participants and proponents; b) project management (including its long-term financing); c) legal arrangements that are necessary to implement the project; d) the procedures for obtaining and documenting free, prior, and informed consent (FPIC) and to resolve conflicts; and e) the monitoring and reporting plan.
- Establishment of a Project Management Unit (PMU) at the local level. Given that the minimum duration of a REDD+ project (Avoided Unplanned Deforestation [AUD]-VCS) is 30 years, a PMU will be established that will be responsible for the implementation of pilot project activities, MRV, mechanisms for performance-based compensation, and promotion of activities to reduce deforestation in the selected site. The PMU will be established for the proponents of the GEF-funded ENDE-REDD+ pilot project with support from the GEF project team and MARENA.
- Analysis and development of the complete baseline for the project site, due diligence, baseline sections, and verified emissions reductions (VER) in the PDD. In addition, personnel will be trained to follow up on the project at monitoring points and biomass monitoring points and measurement plots.
- Completion of the remaining sections for the combined PDD of the VCS.
- Support for the validation process and response to the evaluation observations and registry.
- Payment of the validation and verification costs.
- Coordination and support for the activities developed by the local partners to reduce deforestation and the development of training sessions for monitoring.
- Collection and analysis of information from the monitoring process. Preparation for the VER from the VCS project; this will be done during the last year of the implementation of this GEF initiative.
- Request for the first emission of VCU for the prioritized site.
- Presentation of information to the national registry of REDD+ activities, in order to avoid double-counting with the sub-national system and the double-sale of certificates for reduction or capture.
- Performance-based compensation to GEF-funded ENDE/REDD+ pilot project local beneficiaries (landowners, including women) will be done following ENDE guidelines, including the implementation of the forest conservation incentive, which may include production inputs or plant material, technical assistance and training, and the cost of monitoring and follow-up. Performance-based compensation will be coordinated by MARENA's Division of Climate

Change and will be made through FONADEFO and will continue after project completion to ensure the sustainability of the GEF-funded ENDE/REDD+ pilot project activities.

144. The REDD+ selected methodology will be adapted to the needs of the specific sites where the methodology will be implemented and following ENDE guidelines. There are currently 11 VCS methodologies for the AFOLU section that have been approved, five of which are for REDD+ projects. The VM0015 methodology was chosen (methodology for estimating the reduction of GHG emissions derived from unplanned deforestation) from among these, considering that the elements included in this methodology are the most applicable to the project site and it is characterized as having a mosaic configuration system due to activities such as cattle-ranching, small-scale agriculture, and selective timber extraction. A description of the VM0015 methodology for VCS is included in Annex 8.6.

2.5. Key indicators, risks, and assumptions

145. The project's indicators are provided in Table 5. Detailed information on project indicators is included in Section 3: Results Framework of this Project Document. The risks that might prevent the project from being achieved are presented in Table 6.

Table 5 – Project indicators.

Objective / Outcome	Indicators	Goal (5 years)
Objective: Strengthened management effectiveness of Multiple Use Protected Areas (MUPAs) and the sustainable use of dry and humid forests in the wider landscape in western and north-central Nicaragua to ensure the flow of multiple ecosystem services, ensuring biodiversity conservation, SLM, and climate change mitigation from land use change	Improved management effectiveness of 12 existing MUPAs, measured by the METT scorecard (BD-1)	<ul style="list-style-type: none"> – Volcán Cosigüina NR: From 53 to 58 – Estero Padre Ramos NR: From 54 to 59 – Estero Real NR: From 38 to 42 – Apacunca Genetic Reserve: From 35 to 38 – Volcán Concepción NR: From 43 to 47 – Volcán Maderas NR: From 33 to 36 – Cerro Cumaica - Cerro Alegre NR: From 36 to 40 – Cerro Mombachito– La Vieja NR: From 13 to 14 – Sierra Amerrisque NR: From 33 to 36 – Macizos de Peñas Blancas NR: From 39 to 43 – Cerro Kilambé NR: From 39 to 43 – Istmo de Istiam-Peña Inculca NR: From 33 to 36
	Change in the annual average loss of soil (t/ha/year) in prioritized areas as a result of the implementation of integrated farm management plans in dry lands (LD-3)	– From 30.0 t/ha/year ²¹ to 24.0 t/ha/year (reduction by 20%)
	Carbon reserves resulting from Best Management Practices (BMPs) in LULUCF*/AFOLU, per forest type (CCM-5)	<ul style="list-style-type: none"> – Dry forest: From 0 to 83,421 tCO₂-e – Humid forest: From 0 to 247,916 tCO₂-e

²¹ The baseline of annual average loss of soil was estimated during the PPG phase based on: a) Instituto Nicaraguense de Estudios Territoriales (INETER) & Agencia Suiza para el Desarrollo y la Cooperación (COSUDE). 2005. Erosión Hídrica, Mapas de Amenazas. Recomendaciones técnicas para su elaboración; and b) Toruño, P. Experiencias nacionales de Nicaragua en el manejo de erosión hídrica en laderas mediante sistemas agroforestales. Revista Tecnología en Marcha, Vol. 21-1, Enero-Marzo 2008, P. 56-63. The intensity of erosion or soil loss in Nicaragua is classified as follow: a) low intensity: 5 – 12 t/ha/year; b) medium intensity: 12 – 25 t/ha/year; and c) high intensity: > 25 t/ha/year. For dry forest landscapes where extensive farming activities are dominant, an annual average loss of soil 30 t/ha/year was used. The rate of soil loss per year will be measured using the Universal Soil Loss Equation (USLE), which was used in the INETER & COSUDE (2005) study and is a widely used mathematical model that describes soil erosion processes: A = RKLSCP, where A = average annual soil loss; R = rainfall erosivity factor; L and S = topographic factors; and C and P = cropping management factors.

	*Conserve and improve carbon reserves in the selected forest areas	
	Avoided emissions (tCO ₂ -e) from deforestation in a humid, semi-humid, and cloud forest landscape during a 5-year period (SFM/REDD-1)	- 137,127 tCO ₂ -e
Outcome 1: Strengthened capacity and financial sustainability of the MUPAs in dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua	Change in the capacity of MARENA staff, measured by capacity development indicators (UNDP Capacity Development Scorecard: 30 officials trained, including women) a. Capacity for participation b. Capacity for the creation of, access to, and use of information and knowledge c. Capacity for the development of strategies, policy, and legislation d. Capacity for management and implementation e. Capacity for monitoring and evaluation T = Total	<u>MARENA:</u> a: 100% b: 100% c: From 78% to 90% d: From 83% to 90% e: From 83% to 90% T: From 81% to 90% <u>Territorial Delegations</u> - Rivas: From 62% to 77% (T) - Jinotega: From 60% to 75% (T) - Boaco: From 44% to 59% (T) - Chontales/Juigalpa: From 44% to 59% (T) - Chinandega: From 51% to 66% (T)
	Change in the financial gap (USD) to cover the basic management costs for 12 MUPAs as a result of new financial resources after 5 years	- From \$1,968,039 USD to \$610,667
	Total budget (USD) per year available for the management of 12 MUPAs by financial source after 5 years	- National government: From \$100,861.95 to \$121,034 (increase in 20% after 5 years) - Local government (municipalities): From \$280,282 to \$336,338 (increase in 20% after 5 years) - Generated revenues (visitors fees): From \$0 to \$300,000 after 5 years (average of \$60,000/year) - Private sources (NGO, private sector, others): From \$7,000 to \$600,000 USD after 5 years (average of \$120,000/year)
	Change in the forested area in the MUPAs (per type of ecosystem) by project end	- Dry forest: From 104,233 ha to 104,233 ha - Humid, semi-humid, and cloud forests: From 21,436 ha to 21,436 ha
	Change in number of hectares illegal logging of high-value timber in two (2) MUPAs	Baseline - 10% (deforestation declines each year by 2.5%; the baseline and target will be established during the first year of project implementation, the species to be assessed are included) - Cerro Kilambé NR: Sweetgum (<i>Liquidambar styraciflua</i>) and mahogany (<i>Swietenia macrophylla</i>) - Volcán Cosigüina NR: White Mangrove (<i>Laguncularia racemosa</i>)
	Change in the trade of vulnerable or endangered species as measure by	- Orange-fronted parakeet (<i>Aratinga canicularis</i>): From 35 to 17 individuals seized

	number of individuals seized as recorded by PA rangers in each MUPA per year	/year – Pacific parakeet (<i>Aratinga strenua</i>): From 41 to 20 individuals seized /year – Black iguana (<i>Ctenosauria similis</i>): From 51 to 25 individuals seized /year
	Change in the number of forest fires reported in the dry forest MUPAs	– From 109 events/year to 87 events/year (reduction by 20%)
	Continued presence of indicator species of biological group (birds and plants)	<u>Dry forest</u> – Birds: 2 species (<i>Procnias tricarunculata</i> , <i>Calocitta formosa</i>) – Plants: 2 species (<i>Albizia saman</i> , <i>Laguncularia racemosa</i>) <u>Humid, semi-humid, and cloud forest</u> – Birds: 2 species (<i>Pharomachrus mocinno</i> , <i>Vermivora chrysoptera</i>) – Plants: 2 species (<i>Quercus pubescens</i> , <i>Swietenia macrophyll</i>)
	Number of hectares in good management practices in LULUCF ²² adopted in buffer zones of 12 MUPAs	– From 0 ha to X ha, including 2,500 ha in agroforestry and silvopastoral systems (the target will be established during the first year of project implementation)
Outcome 2: Multiple global environmental benefits generated through SFM and SLM outside MUPAs	Area (ha) of biological corridors consolidated to improve connectivity between existing MUPAs and endangered tropical forest habitat in productive landscapes	– Dry forest: 25,000 ha (including 1,000 ha rehabilitated, and 1,250 in agroforestry and silvopastoral systems) – Humid, semi-humid, and cloud forest: 30,000 ha (including 1,000 ha rehabilitated, 1,250 in agroforestry and silvopastoral systems, and 399.55 ha of avoided deforestation)
	Continued presence of indicator species in the biological corridors	<u>Dry forest</u> – Golden-mantled Howling Monkey (<i>Alouatta palliata</i>) – Black Iguana (<i>Ctenosaura similis</i>) <u>Humid, semi-humid, and cloud forest</u> – Quetzal (<i>Pharomachrus mocinno</i>) – Tapir (<i>Tapirus bairdi</i>)
	Restored carbon stocks of threatened tropical forests at the end of 5 years (natural rehabilitation of degraded areas, agroforestry, and silvopastoral systems)	– Dry forest: 26,862 tCO ₂ -eq (1,000 ha rehabilitated) – Humid, semi-humid, and cloud forest: 35,816 tCO ₂ -eq (1,000 ha rehabilitated)
	Flow (m ³ /sec) in 10 prioritized watersheds as measured by water gauges to be installed in the prioritized rivers during the first year of the project	Equal to the baseline (the baseline will be established during the first year of project implementation, the prioritized watersheds are mentioned) 1. Istiam River (Basin 69): X 2. Mayales River (Basin 69): X 3. Fonseca River (Basin 69): X

²² LULUCF: good management practices with local communities to develop alternative livelihood methods to reduce emissions and sequester carbon, including agroforestry systems to build sinks on agricultural lands while allowing food production, and practices that sustain fertility in soils to prevent the cultivation of new lands currently under forest or other non-agricultural vegetation.

		<p>4. Estero Real River (Basin 58): X</p> <p>5. Tuma River (Basin 55): X</p> <p>6. Cúa River (Basin 53): X</p> <p>7. Bocay River (Basin 53): X</p> <p>8. Aquespalapa River (Basin 58): X</p> <p>9. Viejo River (Basin 64): X</p> <p>10. El Obraje River (Basin 64): X</p>
	Number of hectares protected through GEF-funded REDD+ practices during a 5-year period	– 30,000 ha (Year 1 – Reference emission levels established –; Year 2 – MRV system in place; Year 5 – verification of emission reductions)
	Avoided deforestation (ha) at the end of the project	– 399.55 ha ²³
	Number of sustainable production initiatives (beneficiaries differentiated by gender) that contribute to the reduction of deforestation for the GEF-funded ENDE-REDD+ pilot project.	– From 0 to X (target will determined during the first year of project implementation)
	<p>Change in the capacity of the municipal staff and communities measured by capacity development indicators (UNDP Capacity Development Scorecard: 270 municipal officials and local communities trained, including women)</p> <p>a. Capacity for participation</p> <p>b. Capacity for the creation of, access to, and use of information and knowledge</p> <p>c. Capacity to develop strategies, policies, and legislation</p> <p>d. Capacity for management and implementation</p> <p>e. Capacity for monitoring and evaluation</p> <p>T = Total</p>	<p><u>Municipalities</u> (average for 16 municipalities, individual baseline scores are included in Annex 8.8):</p> <p>a: From 43% to 53%</p> <p>b: From 30% to 40%</p> <p>c: From 50% to 60%</p> <p>d: From 52% to 62%</p> <p>e: From 10% to 30%</p> <p>T: From 37% to 50%</p> <p><u>Local communities:</u> (average for 16 CSOs individual baseline scores are included in Annex 8.8):</p> <p>a: From 17% to 27%</p> <p>b: From 17% to 27%</p> <p>c: From 31% to 41%</p> <p>d: From 0% to 15%</p> <p>e: From 0% to 15%</p> <p>T: From 15% to 30%</p>

Table 6 - Risks facing the project and the risk mitigation strategy.

Risk	Level*	Risk Mitigation Strategy
Limited benefits to farmers from conservation and SFM and SLM sustain pressure on	M	To mitigate this risk, the project will make use of conservation-based and SFM-based incentives (including performance-based payment plans) to promote the implementation of sustainable production practices. Farmers participating in these activities will be properly informed about the benefits of conservation and SFM and SLM and will benefit from related training. In addition, farmers will receive

²³ Since Nicaragua has not developed or validated a baseline or reference scenario for emissions at either the national or subnational levels, PPG estimates of emission reductions that will result from the implementation of a REDD+ pilot project were obtained using forest cover data provided by the Division of Protected Areas of the Ministry of Environment and Natural Resources (MARENA), as well as historical and current land use data maps developed for the Macizo de Peñas Blancas - Cerro Kilambé Biological Corridor (Bosawas Biosphere Reserve) by PPG consultants hired with GEF funds. Based on deforestation data for the 2000-2012-period, a deforestation rate of 1.6 percent was estimated and used for establishing deforestation projections until 2040. Based on these projections, a total of 1,598.19 ha will be deforested in 5 years without the GEF project and the total avoided deforestation with the GEF project will be 399.55 ha (a 25-percent reduction from the baseline).

PAs from competing land uses		assistance from the project for the development of integrated farm management plans that will specify the spatial and temporal arrangements of different land uses across farms, allowing farmers to improve on-farm sustainability.
Failures in the functioning of relations between PA staff and municipal authorities limits the integration of PA management with conservation efforts in the wider landscape	L	To promote collaboration between PA staff and municipal authorities, the project will make use of collaborative agreements that allow the joint management of PAs. By doing so, municipal authorities will be able to more easily integrate conservation efforts within and from outside of the PAs, while PA authorities will have a chance to buffer PAs more effectively. Both PA staff and municipal authorities will have access to information and monitoring systems that will facilitate the exchange of information and enable joint decision-making. Furthermore, the project will involve both parts in all stages of the project's design phase as a way to promote early collaboration and to build trust. During project implementation, the joint development and application of work plans and indicators will be promoted.
Poorly developed tenure conditions limit producers' eligibility for REDD+ and other incentives	M	In order to reduce the risk related to the lack of clarity regarding land property and use rights, the project will work closely with local governments to coordinate land titling, respecting all existing forms and regulations that guarantee those rights. In the cases where there is little clarity or conflict exists regarding property and use rights, the project will assume a conciliatory approach in order to arrive at the best solution possible for all parties without compromising the achievement of the project's outcomes.
Degradation of the tropical dry forest and loss of forest coverage as a consequence of extreme climatic events	L	The risks related to climate change may include more intense dry seasons and/or torrential rains associated with tropical storms and hurricanes. This could lead to increased forest degradation, including changes to plant communities or forest/ecosystem cover due to landslides, accelerated loss of soil, and desertification. The project's actions for sustainable forest and ecosystem management will translate into more solid and increased coverage, as well as healthier forests (for example, diversity of age classes and greater regenerative capacity) that are resilient to climate variability. In addition, there will be greater protection of the soil and regulation of hydric cycles that generate stable microclimatic conditions with benefits for their associated species and forests, as well as a reduction of vulnerability of local communities to climate change.

2.6. Financial modality

146. The financial support provided by GEF resources will consist of a grant to cover the incremental costs of the proposed activities. Therefore, GEF resources will be mainly directed toward technical assistance.

147. The project will be executed under National Implementation Modality (NIM) according to the standards and regulations for UNDP cooperation in Nicaragua; MARENA will be the Executing Entity. The costs of the incremental activities that are required to contribute to global benefits that will be financed by GEF are \$6,192,512 USD. A summary of the project's budget is presented in Table 7.

Table 7 – Total project budget.

Outcome	Budget (USD)	Percentage of Total Budget
Outcome 1.	3,133,527	50.60
Outcome 2.	2,764,104	44.64
Project management costs	294,881	4.76
TOTAL	6,192,512	100.00

2.7. Cost-effectiveness

148. The multifocal GEF strategy for strengthening the management effectiveness of MUPAs and the sustainable use of dry and humid forests in selected landscapes in western and north-central Nicaragua to ensure the flow of multiple ecosystem services will be more cost-effective in the short and long terms than the alternative approach, in which a weak institutional framework and limited planning and management capacities will prevail, thereby preventing the delivery of global environmental benefits. In line with the GEF Council's guidance on assessing the cost-effectiveness of projects (Cost-Effectiveness Analysis in GEF Projects, GEF/C.25/11, April 29, 2005), a qualitative approach to identifying the alternative with the best value and feasibility for achieving the project objective was used.

149. A strategy to improve management in order to increase the conservation, sustainable use of biodiversity, and maintenance of the ecosystem services of 12 existing MUPAs (Component 1) is likely to be far more cost-effective in the long term than the alternative approach that relies on a limited institutional and individual capacity for effective MUPA management and for reducing current threats to biodiversity. If this project is not implemented, the scenario that will prevail is one where the expansion of agriculture, cattle-ranching, and other non-sustainable land use practices will continue to contribute to the loss and degradation of the tropical dry and tropical humid forest ecosystems within the PAs. Additionally, the financial sustainability of the MUPAs will continue to lag behind in conservation and management needs and the MUPAs will continue to rely mostly on limited government funding. By strengthening the institutional capacity of MARENA at the national (Headquarters) and local levels (Territorial Delegations) through capacity-building for MUPA management and implementation of planning, monitoring, and enforcement strategies and tools to reduce threats (illegal logging, trade of vulnerable and endangered species, uncontrolled slash-and-burn adaptation), the GEF alternative will remove the barriers that limit effective MUPA management and the conservation of globally important biodiversity.

150. The return on investment of the GEF alternative with regard to improved MUPA management includes strengthening of procedures, roles, and responsibilities for surveillance and monitoring of sustainable uses and limits to natural resources extraction within the MUPAs, as well the establishment of multi-sectorial collaborative agreement that will sustain stakeholder participation in MUPA management. This strategy will reduce potential conflicts with MUPA users, which may prove to be costly in terms of the effort that will be required to overcome them, thereby undermining management effectiveness. In addition, the use of multiple tools and strategies to improve MUPA management will provide lessons learned and best practices for future management approaches, which may lead to cost savings throughout the NSPA. The implementation of an information system for sustainable use and management and conservation in MUPAs that will facilitate monitoring of threats to biodiversity will be cost-efficient since it will be articulated with the SINIA-MARENA and the National Biodiversity Information Subsystem, making use of already established protocols for data-gathering, database development, data processing, and reporting. This constitutes a lower investment than if the information system for sustainable use and management and conservation in MUPAs were to be developed outside of the already established national information systems environment.

151. The project's approach to the financial sustainability of the MUPAs will include securing new financial support from different sources including government and private funds, and funds leveraged by MUPA management partners. Government funding will include the implementation of Law 807/2012 regarding PAs visitors' entry fees, which will increase MUPA revenues from tourism. The project will build on the country's increasing tourism industry to attract more visitors to the MUPAs, and will develop the administrative procedures to ensure a more effective reinvestment of visitor revenues and related fees to help cover the management costs. Currently, MARENA is not taking advantage of these financial mechanisms to support MUPA management, or they are inefficiently implemented such as in the case of

PA entry fees. Without the project, it is very likely that this will continue to be the case with limited biodiversity conservation benefits.

152. The strategy to deliver multiple global environmental benefits through SFM and SLM outside MUPAs (Component 2), rather than the alternative (“business as usual”), will ensure the effective cooperation between national environmental authorities, local environmental authorities, local communities, and farm owners, generating benefits regarding biodiversity, forest, and soil conservation, and climate change mitigation. The return on investment includes the avoided deforestation of tropical humid forest to be protected through a GEF-funded ENDE-REDD+ pilot project during a 5-year period (30,000 ha), which otherwise would have been lost given that the alternate scenario does not consider effective mechanisms to reduce deforestation. In addition, the alternate scenario does not consider the development of land use planning strategies at the landscape and farm levels to address non-sustainable forest and land management in the prioritized landscapes and to guarantee the flow of ecosystem services, including improved ecosystem connectivity, reduction of GHG, stable carbon stocks, stabilization and conservation soils, reduction of erosion, water regulation and storage, and improved quality of life for the local communities and farmers. The GEF-funded ENDE-REDD+ pilot project, to be implemented through Component 2, will employ principles and procedures that are being defined in the country within the National Strategy for Avoided Deforestation (ENDE) context as outlined in Nicaragua’s R-PP, including the financial mechanism to be administered by FONADEFO; thus, contributing to national efforts counted towards reducing deforestation. In this context, the GEF-funded ENDE-REDD+ pilot project (nested within ENDE) has been conceived, in addition to delivering benefits locally, as a specific GEF investment that will generate lessons learned and tools that will contribute to the implementation of ENDE in other landscapes around the country in the near future.

2.8. Sustainability

Environmental sustainability

153. The ecological sustainability of the project will be achieved through the implementation of actions to enable the protection of MUPAs and tropical dry and humid forests in selected landscapes. This will be achieved by improving the management effectiveness of 12 existing MUPAs and the development and/or updating of their management with the participation of multiple stakeholders so that their inputs and perspectives regarding the conservation and sustainability of biodiversity are taken into account, which is a fundamental aspect for the long-term viability of the PAs. Additionally, through multi-sectoral collaborative agreements for shared management of the MUPAs, which will contribute to reducing threat to biodiversity and PAs, local participation will be further ensured giving greater assurance that the project actions will be ecologically sustainable. Project actions directed to improving enforcement and the monitoring of threats will provide MUPA managers (e.g., MARENA, PA staff, and co-managers) with the tools that will facilitate short- and long-term decision-making for the sustainability of the project’s environmental benefits associated with effective PA management. BMPs for forest and soil conservation will be incorporated into municipal/landscape- and farm-level planning processes, thereby reducing tropical dry forest deforestation and degradation and reducing and preventing desertification in critical dry areas. Through the establishment of long-term agreements with landowners and municipalities in the four prioritized landscapes (i.e., biological corridors) for the implementation of BMP (including the implementation of sustainable agroforestry and silvopastoral systems) and the restoration of degraded forested areas, soil loss will be reversed, water regulation will be improved, carbon stocks will be stabilized, and overall ecosystem connectivity will be enhanced. This will result in consolidated biological corridors that facilitate horizontal and vertical mobility to stabilize wildlife populations and provide better protection against climate variability. Finally, a GEF-funded ENDE-REDD+ pilot project for a 30,000-ha landscape of tropical humid forest is projected for a 30-year time period, which will reduce deforestation far beyond the life of the project.

Social sustainability

154. Social sustainability will be achieved primarily through the direct participation of multiple local stakeholders (municipalities; local communities; family, community and life boards; landowners; and private sector groups) in the planning and implementation of biodiversity conservation, MUPA planning and management, BMPs for SFM and SLM, and climate change mitigation strategies to be implemented through the project. Participation in planning and implementation processes will develop new knowledge, skills, and will empower the project beneficiaries for the appropriation of actions and their ability to interact with other stakeholders beyond project completion. Social sustainability will also be achieved through the long-term economic and social benefits that result from the project, including the implementation of sustainable silvopastoral and agroforestry systems that contribute to food security for farmers and their families as well as generate additional household income. The social sustainability of the project will also be achieved through the incorporation of the gender aspect. During the PPG phase, groups of women in the prioritized municipalities were identified as part of the project's consultation process. They were inquired about their interests, expectations, and participation in the project, to ensure that the distribution of benefits will be equitable.

155. The GEF-funded ENDE-REDD+ pilot project activities will be implemented following the REDD+, UNDP, and Nicaragua's ENDE social safeguards. The GEF-funded ENDE-REDD+ pilot project will have a solid basis for its social sustainability beginning with the design phase (PPG), during which consultation processes were begun at the local level. These process will continue during the project implementation phase, including the development of the PDD, to ensure effective citizen participation (including community and territorial level participation) so that GEF-funded ENDE-REDD+ activities will be delivered the expected long-term social benefits, including tenure security, improved livelihoods, and enhanced forest governance, among others.

Institutional sustainability

156. The basis for institutional sustainability lies in strengthening the capacity of MARENA staff to improve the management effectiveness of Nicaragua's MUPAs, and to design, implement, monitor, and enforce biodiversity, soil, and forest conservation and their sustainable use in the wider landscape. MARENA's institutional capacity will be strengthened at the headquarter and territorial levels through training and by providing its staff with specific tools to improve planning, management, and enforcement (e.g., updated management plans for 12 MUPAs, procedures for monitoring and enforcing SFM and SLM, an information system to facilitate decision-making regarding MUPAs and monitor threats, and patrolling protocols) to build a more solid institution. To complement the capacity-building, MARENA's existing administrative systems, institutional structures, and the staff supporting the operational framework will be strengthened to ensure a more effective coordination between the headquarters and the Local Territorial Delegations (Rivas, Jinotega, Boaco, Chontales, and Chinandega) to address threats to the PAs and biodiversity. Strengthened working relationships through multi-sectoral collaboration agreements for MUPA management between MARENA and private sectors, local NGOs, CSOs, and local governments provide an additional guarantee for institutional sustainability and future collaborative efforts for the conservation of biodiversity through MUPAs.

157. The project will also strengthen the individual and institutional capacity of the 15 municipalities with jurisdictions over the four prioritized biological corridors connecting the 12 project MUPAs, improving land use planning and ecological zoning for the consolidation of the corridors. The municipalities will also have a set of tools and logistical support in place (e.g., GIS mapping tool, monitoring and enforcement system, and MRV system) to facilitate decision-making and the assessment of SFM, SLM, and biodiversity conservation benefits and the development of the inventories of GHG emissions and carbon stocks for the municipalities implementing GEF-funded ENDE-REDD+ activities. This, together with improved support from MARENA to the municipal authorities for implementing SFM and SLM practices outside MUPAs, will facilitate inter-institutional communication and coordination, thereby contributing further to the institutional sustainability of the project.

158. At the local level, institutional sustainability will be guaranteed through the increased knowledge gained by local stakeholders, including farmers, about biodiversity conservation, ENDE-REDD+, and BMPs for SFM and SLM, which will facilitate the implementation and follow-up of the actions foreseen for the project in production landscapes outside MUPAs and will be the basis for future local initiatives. Finally, the GEF-funded ENDE-REDD+ pilot project will develop an institutional structure following ENDE's guidelines that will allow local stakeholders to continue to implement forest conservation actions well beyond project completion.

Financial sustainability

159. Financial sustainability will be achieved through a strategy for securing the financial sustainability of MUPAs that includes increased government and private funds (i.e., PA visitors' entry fees – Law 807/2012), and funds leveraged by MUPA management partners (including participants in multi-sectoral collaborative agreements). This strategy will diversify MUPA funding, which currently depends mostly on limited central government budgets, and will contribute to significantly reducing the financial gap of the MUPAs and providing more stable medium- and long-term financial resources. The financial sustainability of the project also lays in the economic benefit to local farmers as the result of the development and implementation of integrated farm management plans, including agroforestry and silvopastoral systems.

160. With regard to the GEF-funded ENDE-REDD+ pilot project to be implemented in a 30,000-ha humid forest landscape, the first verification of reduced emissions will be made during the final year of the project; it is estimated that 137,127 tCO₂-e emissions could be avoided during the five years of the project's life. Performance-based compensations as part of the GEF-funded ENDE-REDD+ pilot project will be made through FONADEFO, which will manage the financial mechanism to ensure the long-term sustainability of the GEF-funded ENDE-REDD+ pilot project and the national REDD+ strategy (i.e., ENDE).

2.9. Replicability

161. The strengthening of the management effectiveness of the MUPAs and the sustainable use of dry and humid forests in the wider landscape in western and north-central Nicaragua to ensure the flow of multiple ecosystem services will have an impact on various levels. At the local level, the project will may be replicated in other municipalities where deforestation and degradation of dry and humid forests must be reversed. In particular, the project will generate knowledge and lessons learned regarding land use planning and ecological zoning in landscapes surrounding PAs that will contribute to conservation of forest remnants, biodiversity, soil, as well as to sustain water flows and reserves, which are critical to maintain local production systems and economies. At the farm level, actions for the implementation of integrated farm plans that will allow farmers to improve on-farm sustainability through BMPs for soil and forest conservation have the potential to be replication to the extent that they generate environmental and economic benefits for farmers through sustainable agroforestry and silvopastoral practices, as well as through the rehabilitation of degraded areas that will contribute to restore soils and farm productivity.

162. At the regional and national levels, actions for strengthening the management of MUPAs and their financial sustainability will provide tools and skills to MARENA's Division of Protected Areas (and Local Territorial Delegations) that can be replicated in other PAs around the country. Similarly, the GEF-funded ENDE-REDD+ pilot project will provide important lessons for the replication of similar efforts in other parts of the country and will make important contributions to the implementation of Nicaragua's strategy to reduce deforestation.

163. The project will also have the potential to be replicated and provide lessons learned at the international level. Similar initiatives are in process in other countries of Latin America and the Caribbean (for example, Honduras, Guatemala, and Colombia). In addition, the implementation of SFM/REDD+ and SLM activities will provide lessons learned about reducing deforestation and preventing desertification in

the dry lands of the region and at the global level. The project will make use of the tools made available by UNDP-GEF (i.e., information networks, forums, and documentation and publications) for their dissemination. Project costs for disseminating knowledge and lessons learned are \$9,000 USD (an average of \$1,800 per year, including GEF and co-financing funds) and have been properly budgeted as part of the project’s monitoring and evaluation (M&E) plan.

3. STRATEGIC RESULTS FRAMEWORK AND GEF INCREMENT

3.1. Incremental Cost Analysis

Global and National objectives

164. The global environmental benefits to be delivered through project are presented below:

Global Environmental Benefits
<ol style="list-style-type: none"> 1. Improved management effectiveness of 12 existing MUPAs. 2. Threats facing 12 MUPAs (non-sustainable agriculture and cattle-ranching, illegal logging, trade of vulnerable and endangered species, and forest fires) are reduced across an area of 178,441.93 ha. 3. 104,233 ha of dry forest habitat and 21,436 ha of humid, semi-humid, and cloud forest habitat secured. 4. Stable numbers of key species of biological groups (mammals, birds, and plants), including the protection of endangered wildlife and plant species such as <i>Cocodrilos acutus</i>, <i>Lepidochelys olivácea</i>, <i>Chelonia mydas agassizii</i>, <i>Eretmochelys imbricata</i>, <i>Dermodochelys coriácea</i>, <i>Pharomachrus mocinno</i>, <i>Cebus capucinus</i>, <i>Ara macao</i>, <i>Amazona auropalliata</i>, and <i>Ateles geoffroyi</i>.
<ol style="list-style-type: none"> 1. Ecosystem connectivity: <ul style="list-style-type: none"> ✓ 25,000 ha of dry forest in biological corridors improve ecosystem resilience to climate change and provide refuge for globally important biodiversity in dry forest landscapes. ✓ 30,000 ha of humid, semi-humid, and cloud forest landscape in biological corridors improve ecosystem resilience to climate change and provide refuge for globally important biodiversity in a humid/semi-humid/cloud forest landscape. 2. Carbon sequestration²⁴: <ul style="list-style-type: none"> ✓ 1,000 ha of dry forests rehabilitated over a 5-year period (i.e., project length): 26,862 tCO₂-eq. ✓ 1,250 ha of sustainable agroforestry and silvopastoral systems in dry forest landscapes over a 5-year period (i.e., project length): 56,558.5 tCO₂-eq. ✓ 1,000 ha of humid/semi-humid/cloud forest rehabilitated over a 5-year period (i.e., project length): 35,816 tCO₂-eq. ✓ 1,250 ha of sustainable agroforestry and silvopastoral systems in a humid/semi-humid/cloud forest landscape over a 5-year period (i.e., project length): 74,973 tCO₂-eq. 3. Avoided emissions: <ul style="list-style-type: none"> ✓ Emissions reduction from deforestation of tropical humid forests: 137,127 tCO₂ over a 5-year period (399.55 ha of avoided deforestation) 4. Sustained water flows and forest cover in 10 watersheds.

Baseline Scenario

²⁴ The methodology for the calculations of the expected carbon-related environmental benefits used as a basis biomass estimates developed by Nicaragua’s National Forestry Institute (INAFOR) as part of the National Forestry Inventory (IFN) 2007-2008. According to the MARENA (2013: Readiness Preparation Proposal [R-PP]), the IFN followed guidelines, methods, and standard parameters suggested by the Intergovernmental Panel on Climate Change (IPCC) and regional sources. Thus, the values of carbon stocks in forests (standing biomass, close forests) of the project areas are the following: a) 93.6 tons of carbon per hectare (tC/ha) for humid forests and b) 32.7 tC/ha for the dry forests. For modified and open forests, 50% of these values were used based on expert opinion.

165. Under the “business as usual” scenario, important programs will be developed; however, these programs alone will not overcome the barriers that currently prevent the effective management of MUPAs, the implementation of SLM, SFM, and the sustainable use of dry and humid forests in selected landscape in western and north-central Nicaragua to ensure the flow of multiple ecosystem services and biodiversity conservation (including the consolidation of biological corridors), sustainable land and forest management, and climate mitigation from land use change. The baseline programs are divided into two areas, which are in line with the project’s two outcomes. These two areas of work are described below and are planned for the 2015-2019 time period.

166. Strengthened capacity and financial sustainability of the MUPAs in four selected forest landscapes of Nicaragua. Existing and planned investments for baseline programs and activities for the 2014-2019 time period are estimated at \$7,000,000 USD, which includes an investment by MARENA of over a 5-year period for PA management.

167. Environmental benefits generated through sustainable forest and land management outside MUPAs. Existing and planned investments for baseline programs and activities for the 2014-2019 time period are estimated at \$31,273,000 USD. Baseline activities include: a) an investment of \$2,300,000 USD through the project *Integrated management of watersheds, water and sanitation* (PIMCHAS, Phase 3), implemented by MARENA with financial support from the Government of Canada to improve management and use of water resources in semi-arid areas of northern Nicaragua; b) an investment of \$13,000,000 USD through the *Environmental program for disaster risk and climate change management* with funding from the IADB and the NDF to improve risk management indicators at the municipal level and increase the value of agricultural production for the program beneficiaries; c) an investment of \$3,200,000 USD from the project *Reducing poverty by enhancing the resilience of vulnerable populations and their livelihoods in Nicaragua* funded by the SDC and implemented by UNDP with MARENA as the implementing partner – the project aims to reduce the poverty in Las Segovias region (northern Nicaragua) by enhancing the resilience of vulnerable populations and their livelihoods to climate change; d) an investment of \$10,273,000 USD for the Implementation of ENDE-REDD+ (Nicaragua's R-PP); and e) an investment of \$2,500,000 USD by FONADEFO/INAFOR in support of reforestation activities and the development of PES.

GEF Alternative to Generate Global Benefits

168. Despite the important contribution of the existing and planned baseline programs and projects, they will not be sufficient for strengthening the management effectiveness of MUPAs or the sustainable use of dry and humid forests in the wider landscape of western and north-central Nicaragua; nor are they sufficient for ensuring the flow of multiple ecosystem services, biodiversity conservation, SLM, or climate change mitigation from land use change. A **GEF alternative scenario** will help to remove the barriers that prevent Nicaragua from strengthening MUPAs’ management to conserve core areas nested in a wider landscape where multiple environmental benefits are delivered by SFM and SLM, biodiversity conservation, and climate change mitigation in western and north-central Nicaragua. The proposed GEF intervention to achieve this objective consists of two interrelated components that will contribute to strengthening the capacity and financial sustainability of selected MUPAs and the delivery of multiple environmental benefits within and outside these areas. A description of the benefits of the GEF alternative scenario follows.

169. The alternative GEF scenario will **strengthen the capacity and financial sustainability of MUPAs in dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua.** Incremental financing will be in the amount of \$15,463,957USD; \$3,133,527 USD will be provided by the GEF and \$12,330,430 USD will be provided by co-financing sources. Co-financing for this project component will be provided by UNDP (\$99,000 USD), National Tourism Institute (INTUR) (\$10,660,000 USD), and MARENA (\$1,571,430 USD).

170. Additionally, the alternative GEF scenario will deliver **multiple global environmental benefits through SFM and SLM outside of the MUPAs**. Incremental financing will be in the amount of \$9,398,119 USD; \$2,764,104 USD will be provided by the GEF and \$6,634,015 USD will be provided by co-financing sources. Co-financing for this project component will be provided UNDP (\$220,000 USD), MARENA (\$2,785,445 USD), and INAFOR (\$2,380,950 USD).

171. System Boundary: The GEF alternative will improve the management effectiveness of 12 existing MUPAs in three tropical dry forest landscapes and one tropical humid/semi-humid/cloud forest landscape in western and north-central Nicaragua, respectively, contributing to the conservation of biodiversity and reducing threats across an area of 178,441.93 ha. In addition, it will deliver multiple global environmental benefits through sustainable forest and land management outside the MUPAs, and enhance connectivity between existing forest remnants in order to consolidate four biological corridors (Chinandenga-Rivas Dry Forest Corridor, Cumaica Cerro Alegre–Mombachito Cerro La Vieja–Sierra Amerrisque Biological Corridor, Lake Nicaragua Islands Corridor, and Peñas Blancas–Kilambé Corridor). Finally, a GEF-funded ENDE-REDD+ pilot project will provide the incentives required for the conservation of tropical humid forest blocks within a 30,000-ha landscape, reducing GHG emissions and deforestation in north-central Nicaragua.

172. Incremental costs summary: The incremental cost matrix presented below summarizes baseline costs and incremental activity costs for each project outcome. The total baseline amounts to **\$38,273,000 USD**. The costs of the incremental activities required to contribute to global benefits include **\$6,192,512 USD** to be funded by the GEF and **\$19,919,718 USD** to be provided by co-financers, for a total of **\$26,112,230 USD**. All project co-financers have stated their commitment to the project through written signed letters.

173. In summary, the GEF Alternative has a total cost of **\$64,385,230 USD**, 9.62% of which will be provided by GEF (excluding PPG resources). A summary of the GEF Alternative follows.

	Baseline (US\$)		Alternative		Increment (US\$)	
Outcome 1: Strengthened capacity and financial sustainability of the MUPAs in dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua	MARENA: PA management	7,000,000	GEF	3,133,527	GEF	3,133,527
			Co-financing	12,330,430	Co-financing	12,330,430
			UNDP	99,000		
			INTUR	10,660,000		
			MARENA	1,571,430		
			Baseline	7,000,000		
	Subtotal baseline	7,000,000	Subtotal alternative	22,463,957	Subtotal increment	15,463,957
Outcome 2: Multiple global environmental benefits generated through SFM and SLM outside of the MUPAs	PIMCHAS-MARENA (Phase 3): improve management and use of water resources in semi-arid areas of northern Nicaragua	2,300,000	GEF	2,764,104	GEF	2,764,104
			Co-financing	6,634,015	Co-financing	6,634,015
			UNDP	220,000		
			MARENA	2,785,445		
	IADB-NDF funded Project: Environmental program for disaster risk and climate change management	13,000,000	INAFOR	2,380,950		
	Swiss Cooperation and UNDP funded Project: Reduction of Vulnerability and Adaptation to Climate Change in the Region of the Segovias	3,200,000	MEFCCA	1,247,620		
MARENA: Implementation of ENDE-REDD+ (Nicaragua's R-PP)	10,273,000					

	FONADEFO/INAFOR: reforestation and the development of PES	2,500,000	Baseline	31,273,000		
	Subtotal baseline	31,273,000	Subtotal alternative	40,671,119	Subtotal increment	9,398,119
Project Management	NA		GEF	294,881	GEF	294,881
			Co-financing	955,273	Co-financing	955,273
			UNDP	16,000		
			INTUR	540,000		
			MARENA	217,843		
			INAFOR	119,050		
			MEFCCA	62,380		
			Baseline	0		
	Subtotal baseline:	0	Subtotal alternative	1,254,357	Subtotal increment:	1,254,357
TOTAL			Total GEF	6,192,512	Total GEF	6,192,512
			Total Co-financing	19,919,718	Total Co-financing	19,919,718
			Total Baseline	38,273,000		
	TOTAL BASELINE	38,273,000	TOTAL ALTERNATIVE	64,385,230	TOTAL INCREMENT	26,112,230

3.2. Project Results Framework

	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
<p>Project Objective: Strengthened management effectiveness of the Multiple Use Protected Areas (MUPAs) and the sustainable use of dry and humid forests in the wider landscape in western and north-central Nicaragua to ensure the flow of multiple ecosystem services, ensuring biodiversity conservation, SLM, and climate change mitigation from land use change</p>	<p>Improved management effectiveness of 12 existing MUPAs, as measured by the METT scorecard (BD-1)</p>	<ul style="list-style-type: none"> - Volcán Cosigüina NR: 53 - Estero Padre Ramos NR: 54 - Estero Real NR: 38 - Reserva Genética Apacunca Genetic Reserve: 35 - Volcán Concepción NR: 43 - Volcán Maderas NR: 33 - Cerro Cumaica - Cerro Alegre NR: 36 - Cerro Mombachito- La Vieja NR: 13 - Sierra Amerrisque NR: 33 - Macizos de Peñas Blancas NR: 39 - Cerro Kilambé NR: 39 - Istmo de Istiam-Peña Inculca NR: 33 	<ul style="list-style-type: none"> - Volcán Cosigüina NR: 58 - Estero Padre Ramos 59 - Estero Real NR: 42 - Apacunca Genetic Reserve: 38 - Volcán Concepción: 47 - Volcán Maderas NR: 36 - Cerro Cumaica - Cerro Alegre NR: 40 - Cerro Mombachito- La Vieja NR: 14 - Sierra Amerrisque NR: 36 - Macizos de Peñas Blancas NR: 43 - Cerro Kilambé NR: 43 - Istmo de Istiam-Peña Inculca NR: 36 	<ul style="list-style-type: none"> - Updated METT scorecards - (Tracking Tool for BD-1) - Project evaluation reports: final and mid-term evaluations 	<ul style="list-style-type: none"> - Continued interest by the Nicaraguan Government (national and local), civil society, and the private sector in improving the management of the MUPAs
	<p>Change in the annual average loss of soil (t/ha/year) in prioritized areas as a result of the implementation of integrated farm management plans in dry lands (LD-3)</p>	<ul style="list-style-type: none"> - 30.0 t/ha/year 	<ul style="list-style-type: none"> - 24.0 t/ha/year (reduction by 20%) 	<ul style="list-style-type: none"> - Updated Tracking Tool for LD projects - Field verification reports - Project evaluation reports (PIR/APR): mid-term and final evaluations 	<ul style="list-style-type: none"> - Willingness of the national-level decision-makers and local stakeholders to promote and implement best practices for SLM, management in LULUCF/AFOLU, and SFM
	<p>Carbon reserves resulting from Best Management Practices (BMPs) in LULUCF*/AFOLU, per forest type (CCM-5)</p>	<ul style="list-style-type: none"> - Dry forest: 0 tCO₂-e - Humid forest: 0 tCO₂-e 	<ul style="list-style-type: none"> - Dry forest: 83,421 tCO₂-e - Humid forest: 247,916 tCO₂-e 	<ul style="list-style-type: none"> - Field verification and evaluation reports - Updated Tracking Tool for climate change mitigation projects 	<ul style="list-style-type: none"> - Sampling efforts are optimal - Environmental variability (including climate change) is

	*Conserve and improve carbon reserves in the selected forest areas			– Project evaluation reports: PIR/APR, mid-term and final evaluations	within the normal range										
	Avoided emissions (tCO ₂ -e) from deforestation in a humid, semi-humid, and cloud forest landscape during a 5-year period (SFM/REDD-1)	– 0 tCO ₂ -e	– 137,127 tCO ₂ -e	– Updated Tracking Tool for SFM/REDD+ projects – Carbon flow monitoring system reports											
Outcome 1: Strengthened capacity and financial sustainability of the MUPAs in dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua	Change in the capacity of MARENA staff, measured by capacity development indicators (UNDP Capacity Development Scorecard: 30 officials trained, including women)	<u>MARENA:</u> a: 100% b: 100% c: 78% d: 83% e: 83% T: 81%					<u>MARENA:</u> a: 100% b: 100% c: 90% d: 90% e: 90% T: 90%					– Updated Capacity Development Scorecard – Project evaluation reports – Data bases with records of the training events	– National technical staff apply their new knowledge and abilities in a satisfactory manner – There is stability in the human resources within the institution that benefits from the training activities		
		<u>Territorial Delegations</u>					<u>Territorial Delegations</u>								
	a. Capacity for participation	Rivas	Jinotega	Boaco	Chontales / Jugalpa	Chinandega	Rivas	Jinotega	Boaco	Chontales / Jugalpa	Chinandega				
	b. Capacity for the creation of, access to, and use of information and knowledge	a	67%	78%	22%	44%	44%	a	82%	93%	37%			59%	59%
	c. Capacity for the development of strategies, policy, and legislation	b	53%	47%	47%	47%	40%	b	68%	62%	62%			62%	55%
	d. Capacity for management and implementation	c	67%	67%	44%	67%	67%	c	82%	82%	59%			82%	82%
	e. Capacity for monitoring and evaluation	d	67%	50%	50%	50%	50%	d	82%	65%	65%			65%	65%
	T = total	e	67%	67%	67%	67%	67%	e	82%	82%	82%			82%	82%
	Change in the financial gap (USD) to cover the basic management costs for 12 MUPAs as a result of new financial resources after 5 years	T	62%	60%	44%	53%	51%	T	77%	75%	59%			68%	66%
	Total budget (USD) per	– \$1,968,039 USD					– \$610,667 USD							– Updated Financial Sustainability Scorecard – Data bases with financial and accounting information from the	– Stable national and international economic conditions allow a stable flow of additional financial resources – Favorable
	– National government:					– National government:									

year available for the management of 12 MUPAs by financial source after 5 years	\$100,861.95 – Local government: \$280,282 – Generated revenues (visitors fees): \$0 – Private sources (NGO, private sector, etc.): \$7,000	\$121,034 (increase in 20% after 5 years) – Local government: 336,338 (increase in 20% after 5 years) – Generated revenues (visitors fees): \$300,000 after 5 years (average of \$60,000/year) – Private sources (NGO, private sector, others): \$600,000 USD after 5 years (average of \$120,000/year)	MUPAs – Reports/records of income from economic compensation for multiple environmental services related to ENDE-REDD – Project evaluation reports: PIR/APR, mid-term and final evaluations	conditions for economic compensation – Favorable market for sale and purchase of carbon credits
Change in the forested area in the MUPAs (per type of ecosystem) by project end	– Dry forest: 104,233 ha – Humid, semi-humid, and cloud forest: 21,436 ha	– Dry forest: 104,233 ha – Humid, semi-humid, and cloud forest: 21,436 ha	– GIS/Maps – Field verification notes – Technical reports and publications	– Biodiversity monitoring incorporated as part of the MUPA management activities in forest landscapes of the western and north-central regions of Nicaragua – Effective coordination among the national and local authorities and civil society for monitoring and control – Agreement among the governmental, private sector, and civil society stakeholders in the participatory management of the MUPAs
Change in number of hectares of illegal logging of high-value timber in two (2) MUPAs	– Cerro Kilambé NR: Sweetgum (<i>Liquidambar styraciflua</i>) and mahogany (<i>Swietenia macrophylla</i>) – Volcán Cosigüina NR: White Mangrove (<i>Laguncularia racemosa</i>) (the baseline will be established during the first year of project implementation, the species to be assessed are included)	– Baseline - 10% (deforestation declines each year by 2.5%)	– Monitoring, control, and surveillance reports – Databases on seizures, forfeitures and sanctions	
Change in the trade of vulnerable or endangered species as measure by number of individuals seized as recorded by PA rangers in each MUPA per year	– Orange-fronted parakeet (<i>Aratinga canicularis</i>): 35 individuals seized /year – Pacific parakeet (<i>Aratinga strenua</i>): 41 individuals seized /year – Black iguana (<i>Ctenosauria similis</i>): 51 individuals seized /year	– Orange-fronted parakeet (<i>Aratinga canicularis</i>): 17 individuals seized /year – Pacific parakeet (<i>Aratinga strenua</i>): 20 individuals seized /year – Black iguana (<i>Ctenosauria similis</i>): 25 individuals seized /year		
Change in the number of forest fires reported in the	– 109 events/year	– 87 events/year (reduction by 20%)	– Monitoring, control, and surveillance	

	dry forest MUPAs			reports – Databases/maps of forest fires	
	Continued presence of indicator species for biological groups (birds and plants)	<u>Dry forest</u> – Birds: 2 species (<i>Procnias tricarunculata</i> , <i>Calocita formosa</i>) – Plants: 2 species (<i>Albizia saman</i> , <i>Laguncularia racemosa</i>) <u>Humid, semi-humid, and cloud forest</u> – Birds: 2 species (<i>Pharomachrus mocinno</i> , <i>Vermivora chrysoptera</i>) – Plants: 2 species (<i>Quercus pubescens</i> , <i>Swietenia macrophyll</i>)	<u>Dry forest</u> – Birds: 2 species (<i>Procnias tricarunculata</i> , <i>Calocita formosa</i>) – Plants: 2 species (<i>Albizia saman</i> , <i>Laguncularia racemosa</i>) <u>Humid, semi-humid, and cloud forest</u> – Birds: 2 species (<i>Pharomachrus mocinno</i> , <i>Vermivora chrysoptera</i>) – Plants: 2 species (<i>Quercus pubescens</i> , <i>Swietenia macrophyll</i>)	– Monitoring reports/databases and field notes – Parcels for monitoring forest species	– There are no substantial changes in land use/coverage – Sampling efforts are optimal – Environmental variability is within the normal range
	Number of hectares in good management practices in LULUCF adopted in buffer zones of 12 MUPAs,	– 0 ha	– X ha, including 2,500 ha in agroforestry and silvopastoral systems (the target will be established during the first year of project implementation)	– Field verification and evaluation reports – Updated Tracking Tool for climate change mitigation projects – Project evaluation reports: PIR/APR, mid-term and final evaluations	– Sampling efforts are optimal – Environmental variability (including climate change) is within the normal range

Outputs:

1.1. Planning and monitoring strengthened in 12 MUPAs through:

- a) Approved management plans for 12 existing MUPAs, defining conservation measures to address threats; defining sustainable off-take limits and specifying management targets, and indicators of success and needs for delivering PA functions
- b) Procedures, roles and responsibilities defined for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions for grazing, agriculture, and other acceptable production activities.
- c) Information system for sustainable use and management (forest products, agriculture, and grazing) and conservation in MUPAs strengthens decision-making processes and facilitates compliance and monitoring of threats to BD.

1.2. Management and enforcement framework in place for 12 MUPAs:

- a) Capacity built within MARENA to effectively deliver PA management functions across MUPAs in dry forest and humid, semi-humid, and cloud forest landscapes.
- b) Multi-sectoral collaborative agreements for shared management of MUPAs define access areas for sustainable use of forest products and off-takes, BD-friendly production methods, agreed-to management measures, and monitoring and enforcement mechanisms.

c) Strengthening of enforcement (targeting illegal logging, trade of vulnerable and endangered species, uncontrolled slash-and-burn); improved national and local PA authorities' information systems for monitoring threats; protocols for patrolling and reporting malfeasance; capacity to sanction infractions.

d) Sustainable production practices to prevent deforestation in the buffer zones of protected areas.

1.3. Finance in place for 12 MUPAs:

a) New financial resources available for PA management derived from government and private funds (i.e., PAs visitors' entry fees – Law 807/2012), and funds leveraged by MUPA management partners (NGOs, private sectors, local governments), among other sources.

b) Effective deployment of funds and human resources to address threats to MUPAs.

c) Cost-effective administration (including financial management and personnel administration) at MARENA's Headquarters and in Local Territorial Delegations.

Outcome 2: Multiple global environmental benefits generated through SFM and SLM outside of the MUPAs	Area (ha) of biological corridors consolidated to improve connectivity between existing MUPAs and endangered tropical forest habitat in productive landscapes	<ul style="list-style-type: none"> – Dry forest: 0 ha – Humid, semi-humid, and cloud forest: 0ha 	<ul style="list-style-type: none"> – Dry forest: 25,000 ha (including 1,000 ha rehabilitated, and 1,250 in agroforestry and silvopastoral systems) – Humid, semi-humid, and cloud forest: 30,000 ha (including 1,000 ha rehabilitated, 1,250 in agroforestry and silvopastoral systems, and 399.55 ha of avoided deforestation) 	<ul style="list-style-type: none"> – GIS: maps showing connectivity and coverage – Field verification reports/notes 	<ul style="list-style-type: none"> – Effective coordination and agreement among national, local, and civil society officials for the development of conservation strategies in landscapes around the MUPAs
	Continued presence of indicator species in the biological corridors	<u>Dry forest</u> <ul style="list-style-type: none"> – Golden-mantled Howling Monkey (<i>Alouatta palliata</i>) – Black Iguana (<i>Ctenosaura similis</i>) <u>Humid, semi-humid, and cloud forest</u> <ul style="list-style-type: none"> – Quetzal (<i>Pharomachrus mocinno</i>) – Tapir (<i>Tapirus bairdi</i>) 	<u>Dry forest</u> <ul style="list-style-type: none"> – Golden-mantled Howling Monkey (<i>Alouatta palliata</i>) – Black Iguana (<i>Ctenosaura similis</i>) <u>Humid, semi-humid, and cloud forest</u> <ul style="list-style-type: none"> – Quetzal (<i>Pharomachrus mocinno</i>) – Tapir (<i>Tapirus bairdi</i>) 	<ul style="list-style-type: none"> – Monitoring reports/databases – Population censuses and field notes 	
	Restored carbon stocks of threatened tropical forests at the end of 5 years	<ul style="list-style-type: none"> – Dry forest: 0 tCO₂-eq (0 ha) – Humid, semi-humid, and cloud forest: 0 tCO₂-eq (0 ha) 	<ul style="list-style-type: none"> – Dry forest: 26,862 tCO₂-eq (1,000 ha rehabilitated) – Humid, semi-humid, and cloud forest: 35,816 tCO₂-eq (1,000 ha rehabilitated) 	<ul style="list-style-type: none"> – Field measurements/notes – Carbon flow monitoring reports – Project evaluation reports: PIR/APR, mid-term and final evaluations 	<ul style="list-style-type: none"> – Sampling efforts are optimal
	*Natural rehabilitation of degraded areas				
Flow (m ³ /sec) in 10 prioritized watersheds as measured by water gauges	1. Istiam River (Basin 69): X 2. Mayales River (Basin	Target equal to the baseline. 1. Istiam River (Basin 69): X 2. Mayales River (Basin 69):	<ul style="list-style-type: none"> – Hydrological monitoring reports/databases 	<ul style="list-style-type: none"> – Sampling efforts are optimal Environmental 	

	to be installed in the prioritized rivers during the first year of the project	69): X 3.Fonseca River (Basin 69): X 4. Estero Real River (Basin 58): X 5. Tuma River (Basin 55): X 6. Cúa River (Basin 53): X 7. Bocay River (Basin 53): X 8. Aquespalapa River (Basin 58): X 9. Viejo River (Basin 64): X 10. El Obraje River (Basin 64): X (the baseline will be established during the first year of project implementation, the prioritized watersheds are mentioned)	X 3.Fonseca River (Basin 69): X 4. Estero Real River (Basin 58): X 5. Tuma River (Basin 55): X 6. Cúa River (Basin 53): X 7. Bocay River (Basin 53): X 8. Aquespalapa River (Basin 58): X 9. Viejo River (Basin 64): X 10. El Obraje River (Basin 64): X	– Project evaluation reports: PIR/APR – Mid-term and final evaluations	variability (including climate change) is within the normal range
	Number of hectares protected through REDD+ practices during a 5-year period	– 0	– 30,000 ha (Year 1 – Reference emission levels established –; Year 2 – MRV system in place; Year 5 – Verification of emission reductions)	– Maps showing forest cover, deforestation and degradation, and carbon stocks (just one verification at the end of Year 5) – Field measurements/notes	– Conditions exist for implementation of ENDE-REDD+ – Maps are optimal
	Avoided deforestation (ha) at the end of the project	– 0	– 399.55 ha	– Carbon flow monitoring reports – Updated tracking tool for SFM/REDD+	
	Number of sustainable production initiatives (beneficiaries differentiated by gender) that contribute to the reduction of deforestation for the GEF-funded ENDE-REDD+ pilot project.	– 0	– X (target will determined during the first year of project implementation)		
	Change in the capacity of the municipal staff and	<u>Municipalities</u> (average for 16 municipalities,	<u>Municipalities:</u> a: 53%	– Updated Capacity Development	

	<p>communities measured by capacity development indicators (UNDP Capacity Development Scorecard: 270 municipal officials and local communities trained, including women)</p> <p>a. Capacity for participation</p> <p>b. Capacity for the creation of, access to, and use of information and knowledge</p> <p>c. Capacity to develop strategies, policies, and legislation</p> <p>d. Capacity for management and implementation</p> <p>e. Capacity for monitoring and evaluation</p> <p>T = Total</p>	<p>individual scores are included in Annex 8.8):</p> <p>a: 43%</p> <p>b: 30%</p> <p>c: 50%</p> <p>d: 52%</p> <p>e: 10%</p> <p>T: 37%</p> <p><u>Local communities</u> (average for 16 CSOs individual baseline scores are included in Annex 8.8):</p> <p>a: 17%</p> <p>b: 17%</p> <p>c: 31%</p> <p>d: 0%</p> <p>e: 0%</p> <p>T: 15%</p>	<p>b: 40%</p> <p>c: 60%</p> <p>d: 62%</p> <p>e: 30%</p> <p>T: 47%</p> <p><u>Local communities:</u></p> <p>a: 27%</p> <p>b: 27%</p> <p>c: 41%</p> <p>d: 15%</p> <p>e: 15%</p> <p>T: 30%</p>	<p>Scorecard</p> <ul style="list-style-type: none"> - Project evaluation reports - Databases with records of the training events 	
--	--	--	--	--	--

Outputs

2.1. Land use planning, monitoring and enforcement strengthened in landscapes around MUPAs:

- a) Strengthened institutional capacity of national and regional officials and field personnel to support the sustainable management and conservation of dry and humid forest production landscapes, the use of SFM/REDD+ methodologies, the quantification, and evaluation of carbon flows, and the development of strategies to conserve biodiversity.
- b) Training and logistical support provided to municipal environment authorities, for implementing SFM, SLM, and climate change mitigation measures, as well as their enforcement capabilities: compliance monitoring with land use planning structures; spatial and field surveys and other surveillance measures to assess compliance; and improved policing and capacity to sanction infractions.
- c) Municipal-level GIS mapping tool of SFM/SLM and biodiversity benefits guide the development and implementation of land use plans and ecological zoning for the consolidation of biological corridors connecting MUPAs.
- d) Municipal-level monitoring and enforcement systems facilitate decision-making and the assessment of SFM, SLM, and biodiversity benefits in dry and humid forest landscapes

2.2. Integrated farm management delivers multiple global environmental benefits:

- a) Integrated farm management plans specifying the spatial and temporal arrangements of different land uses across farms in dry and humid forest landscapes allow farmers to improve on-farm sustainability (including the implementation of agroforestry and silvopastoral systems) and improved ecosystem connectivity:
- b) Two thousand hectares (2,000) of dry and humid forests set asides enhanced through natural rehabilitation of degraded areas.

2.3. Performance-based compensation mechanism for the wider landscape in place:

- a) One performance-based compensation mechanism in MUPA landscapes by means of ENDE-REDD+ provide a utilitarian incentive for the conservation of humid forest blocks covering 30,000 ha.

4. TOTAL BUDGET AND WORKPLAN

Award ID:	00083775	Project ID(s):	00092085
Award Title:	Nicaragua: Strengthening the resilience of multiple-use protected areas to deliver multiple global environmental benefits		
Business Unit:	NIC10		
Project Title:	Strengthening the resilience of multiple-use protected areas to deliver multiple global environmental benefits		
PIMS no.	5125		
Implementing Partner (Executing Agency)	Ministry of Environment and Natural Resources (MARENA)		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See Budget Note:
COMPONENT 1:	MARENA		GEF	71300	Local Consultants	55,875	49,875	39,000			144,750	1
				71400	Contractual Services Individuals	48,000	48,000	48,000	48,000	48,000	240,000	2
				71600	Travel	40,100	36,600	5,000	5,000	8,500	95,200	3
				72100	Contractual Services Companies	417,450	417,450	379,950	362,000	362,000	1,938,850	4
				72200	Equipment and Furniture	97,500	97,500				195,000	5
				72400	Communic. & Audio Visual Equip	2,500	2,500	2,500	2,500	2,500	12,500	6
				72500	Supplies	3,165	3,165	3,165	3,166	3,166	15,827	7
				72800	Information Technology Equipmt	22,000					22,000	8
				73400	Rental & Maint of Other Equip	26,800	26,800	26,800	26,800	26,800	134,000	9
				74200	Audio Visual & Print Production Cost	21,500	19,500	5,000			46,000	10
				75700	Training, Workshops and Confer	117,200	157,200	5,000	5,000	5,000	289,400	11
				Total Component 1	852,090	858,590	514,415	452,466	455,966	3,133,527		
COMPONENT 2 (INCLUDES MONITORING AND EVALUATION COSTS)	MARENA		GEF	71300	Local Consultants	42,000	42,000				84,000	12
				71400	Contractual Services Individuals	48,000	48,000	48,000	48,000	48,000	240,000	13
				71600	Travel	42,375	42,375	17,800	17,800	17,800	138,150	14
				72100	Contractual Services Companies	264,470	285,720	173,720	173,720	173,720	1,071,350	15

				72200	Equipment and Furniture	50,000	50,000				100,000	16
				72300	Materials & Goods			195,500	195,500	195,500	586,500	17
				72400	Communic. & Audio Visual Equip	3,500	3,500	3,500	3,500	3,500	17,500	18
				72500	Supplies	3,797	3,797	3,797	3,797	3,796	18,984	19
				72800	IT Equipment	90,000					90,000	20
				74200	Audio Visual & Print Production Cost	5,000	15,000	2,000			22,000	21
				75700	Training, Workshops and Confer	118,200	118,200	12,000			248,400	22
					Sub-Total Component 2	667,342	608,592	456,317	442,317	442,316	2,616,884	
				71200	International Consultants			14,700		19,600	34,300	23
				71300	Local Consultants	2,000	2,000	11,800	2,000	17,300	35,100	24
				71400	Contractual Services Individuals			10,950		11,950	22,900	25
				71600	Travel			150		170	320	26
				72100	Contractual Services Companies	9,280	9,280	9,280	9,280	9,280	46,400	27
				72500	Supplies	3,000	500	2,000	500	2,200	8,200	28
					Sub-Total M&E	14,280	11,780	48,880	11,780	60,500	147,220	
					Total Component 2	681,622	620,372	505,197	454,097	502,816	2,764,104	
PROJECT MANAGEMENT	MARENA		GEF	71400	Contractual Services Individuals	36,000	36,000	36,000	36,000	36,000	180,000	29
				71600	Travel	5,600	5,600	5,600	5,600	5,600	28,000	30
				72200	Equipment and Furniture	36,350	550	1,850	550	550	39,850	31
				72400	Communic. & Audio Visual Equip	1,000	1,000	1,000	1,000	1,000	5,000	32
				72500	Supplies	906	906	906	906	907	4,531	33
				73400	Rental & Maint of Other Equip	3,500	3,500	3,500	3,500	3,500	17,500	34
				74500	Miscellaneous Expenses	4,000	4,000	4,000	4,000	4,000	20,000	35
					Total Project Management	87,356	51,556	52,856	51,556	51,557	294,881	
PROJECT TOTAL						1,621,068	1,530,518	1,072,468	958,119	1,010,339	6,192,512	

Total Budget Summary

Donor Name	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)
GEF	1,621,068	1,530,518	1,072,468	958,119	1,010,339	6,192,512
National Forestry Institute (INAFOR)	500,000	500,000	500,000	500,000	500,000	2,500,000
Nicaraguan Tourism Institute (INTUR)	3,200,000	2,000,000	2,000,000	2,000,000	2,000,000	11,200,000
Ministry of Families, Community, Co-operatives, and the Associative Economy (MEFCCA)	250,000	250,000	500,000	150,000	160,000	1,310,000
Ministry of Environment and Natural Resources (MARENA)	2,229,771	1,120,542	724,405	250,000	250,000	4,574,718
UNDP	67,000	67,000	67,000	67,000	67,000	335,000
TOTAL	7,867,839	5,468,060	4,863,873	3,925,119	3,987,339	26,112,230

Project Budget Notes

Atlas Category	Atlas Code	Budget Notes
Outcome 1. Strengthened capacity and financial sustainability of the MUPAs in dry forest and humid, semi-humid, and cloud forest landscapes of western and north-central Nicaragua		
1. Local Consultants	71300	<p>a) Biodiversity Monitoring Expert. Draft handbook for the monitoring of biodiversity indicator species for different types of ecosystems in priority areas. Total cost: \$6,000; 16 weeks at \$375/week.</p> <p>b) Environmental Education Expert (3): (i) outline and implement an awareness raising program, including the design of materials, to raise consciousness about the importance of collaborative management for achieving biodiversity conservation goals in 12 MUPAs; (ii) outline and implement an awareness raising program regarding permitted activities and restrictions in each of the MUPAs and the reduction of threats, including forest fires; and (iii) raise awareness about biodiversity and ecosystem services values. Total cost: \$117,000; 468 weeks at \$250/week (during 3 years)</p> <p>c) Information Systems Expert: (i) improve national and local PA authorities' information systems for monitoring threats; and (ii) assess LU/LC change for the incorporation of results into MUPA planning and management Total cost: \$21,750; 58 weeks at \$375/week.</p>
2. Contractual Services - Individuals	71400	<p>a) PA Planning Expert/Technical Project Coordinator. Support to strengthened capacity and financial sustainability of the MUPAs in selected landscapes/corridors. Total cost: \$30,000; 15 months at \$2,000/month.</p> <p>b) Monitoring and Evaluation Specialist: Management/assessment of Project SSE, project indicators (Results Framework) and Tracking Tools. Total cost: \$60,000; 30 months at \$2,000/month.</p> <p>c) Field technicians (5): field support to strengthen capacity and financial sustainability of the MUPAs in selected landscapes/corridors, including: (i) review existing legislation (Regulation of PAs and Biodiversity Act) and identify procedures and regulations required for defining procedures, roles, and responsibilities defined for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions; and (ii) draft and operational handbook for the Committees for the Protection, Care, Conservation, and Collaboration of Protected Areas, and an operational handbook for the prevention and control of environmental violations. Total cost: \$150,000; 150 months at \$1,000/month.</p>

3. Travel	72300	Travel costs for 5 Territorial Delegations (MARENA) and is directed towards supporting activities referenced in the communication and environmental education program, updating business plans in the MUPAs, field delineation of the five biological corridors, implementation of the environmental regulation in the MUPAs, patrolling for forest fire control and assessing changes in land use in the 12 MUPAs. Total cost: \$95,200; \$19,040 /year during 5 years.
4. Contractual Services - Companies	72100	a) Information system for sustainable use, management, and conservation in MUPAs (strengthening SINIA's PA regional nodes). Total cost: \$75,000. b) Environmental education activities in MUPAs to raise awareness about biodiversity and ecosystem services values. Total cost: \$53,850 c) Sustainable production practices to prevent deforestation in the buffer zones of protected areas, including agroforestry and silvopastoral systems to enhance carbon stocks (grants to stakeholders who will carry out the community environmental projects directed towards creating economic alternatives that reduce deforestation and support forest conservation in core areas or buffer zones of the MUPAs. Total cost: \$ 1,810,000.
5. Equipment and Furniture	72200	a) Equipment and materials for patrolling and surveillance of 12 MUPAs. Total cost: \$75,000; \$6,250/MUPA. b) Vehicles (4). Total cost: \$120,000; \$30,000/vehicle.
6. Communic. & Audio Visual Equip	72400	Communications related to strengthening the capacity and financial sustainability of the project's 12 MUPAs. Total cost: \$12,500; \$2,500/year for 5 years.
7. Supplies	72500	Office and field supplies related to strengthening the capacity and financial sustainability of the project's 12 MUPAs. Total cost \$15,827; \$3,165.40/year for 5 years.
8. Information Technology Equipmt.	72800	a) Computers to improve biodiversity information systems and monitoring of management plans of MUPAs in five of MARENA's Territorial Delegations. Total cost: \$12,000; \$2,000/unit for 6 units. b) Software to improve national and local PA authorities' information systems for monitoring threats. Total cost: \$10,000.
9. Rental & Maint of Other Equip	73400	a) Gas for vehicles (4). Total cost: \$54,000; \$2,700/year/vehicle during 5 years. b) Maintenance & Insurance of vehicles (4). Total cost: \$80,000; \$4,000/year/vehicle during 5 years.
10. Audiovisual & Print Production Cost	74200	a) Publications related to procedures, roles, and responsibilities defined for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions. Total cost: \$10,000; \$5,000/year (years 1 and 2). b) Materials to raise consciousness about the importance of collaborative management for achieving biodiversity conservation goals in 12 MUPAs. Total cost: \$9,000/year; \$4,500/year (year 1 and 2). c) Materials to raise awareness about permitted activities and restrictions in each of the MUPAs and the reduction of threats, including forest fires. Total cost: \$10,000/year; \$5,000/year (year 1 and 2). d) Protocols for reporting information gathered in the field regarding patrolling and enforcement. Total cost: \$2,000 (year 1). e) Materials for marketing and promotional campaigns to raise public awareness about visiting Nicaragua's MUPAs. Total cost \$15,000; \$5,000/year (years 1 through 3).
11. Training, Workshops and Confer	75700	a) Strengthened capacity of MARENA to effectively deliver PA management functions across MUPAs. Total cost: \$113,100; \$56,550/year (years 1 and 2). b) Workshops and meetings for the participatory update/development and approval of management plans for 12 existing MUPAs. Total cost: \$69,300; \$34,650/year (years 1 and 2). c) Workshops and meetings for the development of procedures and regulations for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions. Total cost: \$10,000, \$5,000/year (years 1 and 2).

		<p>d) Training workshops for the implementation of procedures and regulations for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions. Total cost: \$20,000, \$5,000/biological corridor (year 2, one per biological corridor).</p> <p>e) Workshops, meetings, and consultations with key stakeholders for the development of multi-sectoral collaborative agreements for shared management of 12 MUPAs. Total cost: \$18,000; \$9,000/year (years 1 and 2).</p> <p>f) Workshops and meetings for the implementation and follow-up and evaluation of multi-sectoral collaborative agreements for shared management of 12 MUPAs. Total cost: \$15,000; \$5,000/year (years 3, 4, and 5).</p> <p>g) Training workshops for fire prevention and control (farmer-to-farmer methodology). Total cost: \$20,000; \$5,000/biological corridor (year 2).</p> <p>h) Workshops and meetings for the development of patrolling protocols for 12 MUPAs. Total cost: \$24,000; \$2,000 MUPA (years 1 and 2).</p>
Outcome 2. Multiple global environmental benefits generated through sustainable forest and land management outside MUPAs.		
12. Local Consultants	71300	Local consultants for the development of sustainable management plans for 10 watersheds in dry forest landscapes. Total cost: \$84,000; \$42,000/year for 2 years.
13. Contractual Services Individuals	71400	<p>a) PA Planning Expert/Technical Project Coordinator: Support the delivery of multiple global environmental benefits generated through SFM and SLM outside MUPAs. Total cost: \$30,000; 15 months at \$2,000/month.</p> <p>b) Monitoring and Evaluation Specialist: Management/assessment of Project SSE, project indicators (Results Framework) and Tracking Tools. Total cost: \$60,000; 30 months at \$2,000/month.</p> <p>c) Field technicians (5): field support to the delivery of multiple global environmental benefits generated through SFM and SLM outside MUPAs, including technical assistance and follow-up to sustainable management plans. Total cost: \$150,000; 150 months at \$1,000/month.</p>
14. Travel	71600	Travel costs for 5 Territorial Delegations (MARENA) and is directed towards supporting: a) activities for the baseline survey process related to the stakeholders participating in the financing of the FONADEFO within the Biological Corridor between Macizo de Peñas Blancas and Cerro Kilambé; b) develop farm plans for sustainable land management in the biological corridor between Boaco and Chontales; and c) monitoring implementation of the management plans of the 10 sub-watersheds located in the following four biological corridors: Malacatoya River and Fonseca River in Boaco; Mayales River in Chontales; El Cuá-Yaoska, Tuma-Wasaka, Bocay, and Yakalwas Rivers in Jinotega; Estero Real River and Obraje River in Chinandega; and Istiam River in Rivas. Total cost: \$138,150; \$27,630/year during 5 years.
15. Contractual Services - Companies	72100	<p>a) Strengthened capacity of national and regional officials and field personnel in SFM/REDD+, SLM, climate change mitigation, and conservation of biodiversity. Total cost: \$85,000 for 5 years.</p> <p>b) Training to municipal environment authorities, for implementing SFM, SLM, and CC mitigation measures. Total cost: \$85,000 for 4 years.</p> <p>c) Municipal-level GIS mapping tool to assess SFM/SLM and biodiversity benefits. Total cost: \$75,000; \$5,000/municipality (years 1 and 2)</p> <p>d) Municipal-level monitoring and enforcement systems to assess SFM, SLM, and biodiversity benefits. Total cost: \$66,500; \$3,500/unit (15 municipalities and 4 SINIA Nodes) (years 1 and 2).</p> <p>e) Monitoring, reporting, and verification (MRV) system for a 30,000-ha GEF-funded ENDE-REDD+ pilot project (humid forest landscape). Total cost: \$40,000 (years 1 and 2).</p> <p>f) Design and implementation of a GEF-funded ENDE-REDD+ pilot project (includes one verification). Total cost: \$719,850</p>

		for 5 years.
16. Equipment and Furniture	72200	a) Field measuring equipment (forestry, soils, hydrology, and biodiversity) for 5 Local Territorial Delegations. Total cost: \$25,000; \$5,000/delegation. b) Field measuring equipment (forestry, soils, hydrology, and biodiversity) for 15 municipalities. Total cost: \$75,000; \$5,000/municipality.
17. Materials & Goods	72300	Material and goods for the implementation of sustainable management activities for 10 watersheds in dry forest landscapes. Total cost: \$586,500; \$195,500/year for 3 years.
18. Communication and audiovisual equipment	72400	Communications related to the delivery of multiple global environmental benefits generated through SFM and SLM outside MUPAs. Total cost: \$17,500; \$3,500/year for 5 years.
19. Supplies	72500	Office and field supplies related to the delivery of multiple global environmental benefits generated through SFM and SLM outside MUPAs. Total cost \$18,984; \$3,796.80/year for 5 years.
20. IT Equipment	72800	a) Computer equipment to improve information systems for forests, soils, and water sources in biological corridors in five of MARENA's Territorial delegations. Total cost: \$10,000, \$2,000/unit. b) Printers for 5 Local Territorial Delegations. Total cost: \$2,500, \$500/unit. c) Software for 5 Local Territorial Delegations. Total cost: \$10,000; \$2,000/delegation. d) Computer equipment for 15 municipalities to store information related to stakeholders and communities regarding community initiatives and reduction of deforestation in biological corridors. Total cost: \$30,000; \$2,000/unit. e) Printers for 15 municipalities. Total cost: \$7,500, \$500/unit. f) Software for 15 municipalities. Total cost: \$30,000, \$2,000/unit.
21. Audiovisual & Print Production Cost	74200	a) Publication of sustainable development plans for 10 watersheds in dry forest landscapes. Total cost: \$10,000 (year 2). b) Training materials related to municipal-level GIS mapping tool. Total cost: \$6,000 (years 1 and 2). c) Training materials related to data gathering, database management, and reporting. Total cost: \$6,000 (years 1, 2, and 3).
22. Training, Workshops and Confer	75700	a) Workshops and meetings for the development of sustainable management plans for 10 watersheds in dry forest landscapes. Total cost: \$78,000; \$39,000/year (years 1 and 2). b) Workshops and meetings for the development of integrated farm management plans. Total cost: \$52,000; \$26,000/year (years 1 and 2). c) Training sessions for community members and farmers for the implementation of integrated farm management plans. Total cost: \$39,400; \$19,700/year (years 1 and 2). d) Workshops and meetings for the selection of degraded areas and development of rehabilitation plans. Total cost: \$18,000; \$9,000/year (years 1 and 2). e) Training workshops for the use of a municipal-level GIS mapping tool. Total cost: \$25,000; \$12,500/year (years 1 and 2) f) Train workshops for EMU and SINIA staff in data gathering, database management, and reporting. Total cost: 36,000 (years 1, 2, and 3).
M&E		
23. International Consultants	71200	a) Mid-term project evaluation: Total cost: \$14,700; 3.5 weeks at \$4,200/week. b) Final project evaluation. Total cost: \$19,600; 4 weeks at \$4,900/week.

24. Local Consultants	71300	a) Mid-term project evaluation: Total cost: \$9,800; 3.5 weeks at \$2,800/week. b) Final project evaluation. Total cost: \$13,300; 4 weeks at \$3,325/week. c) Review and systematization of lessons learned and best practices. Total cost: \$5,000; \$1,000/yr. d) Terminal report. Total cost: \$2,000. e) Technical reports on specific issues or areas of activity of the project. Total cost: \$5,000; \$1,000/yr.
25. Travel	71600	a) Travel costs for mid-term evaluation. Total cost: \$10,950. b) Travel costs for final evaluation: Total cost \$11,950.
26. Supplies	72500	Supplies for mid-term (\$150) and final (\$170) evaluations. Total cost: \$320.
27. Audits	74100	External audit (5). Total cost: \$46,400, \$9,280/yr.
28. Training, Workshops and Confer	75700	a) Project Inception Workshop. Total cost \$2,500. b) Mid-term (\$1,500) and final evaluation (\$1,700) related workshops. Total cost: \$3,200. c) Project board meetings. Total cost: \$2,500; \$500/yr.
Project Management		
29. Contractual Services Individuals	71400	a) Technical Project Coordinator: project planning, day-to-day management of project activities, project reporting, maintaining key relationships with stakeholders. Total cost: \$60,000; 30 months at \$2,000/month b) Accounting-Finance Specialist. Responsible for financial management of the project, accounting, purchasing, and reporting. Total cost: \$120,000; 60 months at \$2,000/month.
30. Travel	71600	Support the technical and administrative coordination and oversight of the project; programming weekly meetings in the 5 Territorial Delegations; trips to the field to supervise community and FONADEFO-financed projects; and participation in the meetings held with the Institutional Monitoring Committee and the Territorial Delegations in the MARENA's headquarters. Total cost: \$28,000; \$5,600/year during 5 years.
31. Equipment and Furniture	72200	a) Video beam. Total cost: \$500. b) Digital camera. Total cost: \$400, \$200/unit c) Four (4) computers to be used by the project technical staff strengthening each of MARENA's Territorial Delegations. Total cost: \$5,200, \$1,300/unit. d) One (1) printer. Total cost: \$1,000. e) IT supplies & maintenance. Total cost: \$2,750; \$550/year during 5 years. f) Vehicle. Total cost: \$30,000.
32. Communic. & Audio Visual Equip	72400	Communications related to project management. Total cost: \$5,000; \$1,000/year for 5 years.
33. Supplies	72500	Office supplies related to project management. Total cost: \$4,531; \$906.20/year for 5 years.
34. Rental & Maint of Other Equip	73400	Gas. Total cost: \$17,500; \$3,500/year during 5 years.
35. Miscellaneous Expenses	74500	Maintenance & Insurance. Total cost: \$20,000; \$4,000/year during 5 years.

5. MANAGEMENT ARRANGEMENTS

174. The project will be executed following UNDP guidelines for NIM and is an integral part of the UN Development Action Framework Action Plan (UNDAF) (2013-2017) signed between the GoN and the UN in May 15, 2013. The signing of the UNDAF (2013-2017) constitutes a legal endorsement by the GoN.

175. To ensure UNDP's accountability for programming activities and use of resources while fostering national ownership, the appropriate management arrangements and oversight of UNDP programming activities will be established. The management structure will respond to the project's needs in terms of direction, management, control, and communication. The project's structure will be flexible in order to adjust to potential changes during project execution. The UNDP Project Management structure consists of roles and responsibilities that bring together the various interests and skills involved in, and required by, the project.

176. The UNDP will act as the Implementing Entity for this project. As a part of the Steering Committee (SC), UNDP brings to the table a wealth of experience working with the GoN in the area of biodiversity conservation, SLM, SFM, and climate change, and is well-positioned to assist in both capacity-building and institutional strengthening. The UNDP Country Office (UNDP-CO) and UNDP/GEF Regional Coordination Unit (RCU) in Panama will be responsible for transparent practices, appropriate conduct, and professional auditing. Staff and consultants will be contracted according to the established rules and regulations of the United Nations and all financial transactions and agreements will similarly follow the same rules and regulations.

177. The project will be executed by MARENA, as the Implementing Partner. Accordingly, MARENA will sign the grant agreement with UNDP on behalf of the GoN and will be responsible for the coordination and management of the project and will monitor compliance with Work Plans as the basis for project execution. MARENA will coordinate work with other institutions collaborating on this project and will be the sole project manager.

178. The Executive Secretary of MARENA will serve as the National Project Director. He/she will be assigned to provide general project oversight to the project and will represent the interest of the GoN during project implementation. In addition, the Director of the Natural Patrimony of MARENA will act as General Project Coordinator (GPC) and will be responsible for coordinating the interaction between the Project Implementation Unit (PIU) and MARENA, and other national institutions. Terms of Reference for the GPC are included in Annex 8.2 of this Project Document.

179. The project will support a Technical Coordinator, an Accounting-Finance Specialist, and a Monitoring and Evaluation Specialist to provide direct day-to-day project implementation. The duration of the project will be five (5) years.

5.1. UNDP Support Services

180. UNDP will provide support to the Project Board by carrying out objective and independent project supervision and follow-up duties. Experts of the Environment Programme at the UNDP Regional Services Centre for Latin America and the Caribbean in Panama will participate when necessary in key project meetings, consultations, events, and analysis of technical reports and others.

181. The fee for General Management Support (GMS) for Global Environment Facility Projects is 9.5%. GMS are services which are not directly attributable to project inputs or activities and is charged in programmes funded wholly or partially from Other Resources, GMS encompasses general oversight and management functions of UNDP Headquarter and Country Office units, and include the following specific services:

- Project identification, formulation, and appraisal
- Determination of execution modality and local capacity assessment
- Briefing and de-briefing of project staff and consultants
- General oversight and monitoring, including participation in project reviews
- Receipt, allocation and reporting to the donor of financial resources
- Thematic and technical backstopping through Bureaus
- Systems, IT infrastructure, branding, knowledge transfer

182. MARENA will follow the rules and procedures detailed in the UNDP NIM Manual for program execution. The UNDP will provide support to the National Project Director and the General Project Coordinator, in order to maximize the program's impact as well as the quality of its products. Moreover, it will be responsible for administering resources in accordance with the specific objectives defined in the program Document, and in keeping with the key principles of transparency, competitiveness, efficiency, and economy. The financial management and accountability for the resources allocated, as well as other activities related to the execution of program activities will be undertaken under the direct supervision of the UNDP Country Office.

5.2. Collaborative arrangements with related projects

183. Steps will be taken by the project's Steering Committee to promote the interaction between the implementation team and Project Coordinators who are managing related projects and ensure the coordination and synchronization of efforts as well as promote cross-fertilization, where possible. Collaborative mechanisms with specific projects were outlined in Section 2.3. *Design principles and strategic considerations* of this Project Document.

5.3. Inputs to be provided by all partners

184. The framework for the administrative, technical, and financial execution of the Project is based on the organizational framework of MARENA. The execution of the project will be supported by a Technical Coordination Committee; and, as established by MARENA, the Project's General Coordinator will be the Director of the Ministry's Department of Natural Patrimony.

185. The execution of the Project in the territories will be carried out through the organizational framework of MARENA, with permanently placed delegations in Jinotega, Boaco, Chontales, Rivas, and Chinandega. MARENA's departmental delegates will be responsible for the operation of the Project within their territories, and will be supported by the municipal governments and the INAFOR territorial delegations. Technical support for the delegates will be provided by contracted technical staff for each component.

186. MARENA will be part of the project's SC and will participate technically and operationally in the development of the two components of the Project.

5.4. Audit arrangements

187. The project will be audited in accordance with the UNDP Financial Regulations and Rules and applicable audit policies

5.5. Agreement on intellectual property rights and use of logo on the project's deliverables

188. In order to accord proper acknowledgement to GEF and UNDP for providing funding, the GEF and UNDP logos should appear on all relevant project publications and project hardware, among other items. Any citation on publications regarding projects funded by UNDP and GEF should also accord proper acknowledgment to both UNDP and GEF.

189. In accordance with standard UNDP procedures, all resources and equipment gained through project support remain the property of UNDP until project closure, at which time these resources may be transferred to MARENA. The General Project Coordinator will supervise the correct use and maintenance of these resources and equipment.

5.6. Roles and responsibilities of the parties involved in project management

190. **The Steering Committee (SC)** is the group responsible for making management decisions for the project by consensus when guidance is required by the General Project Coordinator. Responsibilities of the SC include making recommendations for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, the SC decisions should be made in accordance with standards that ensure development results, best value for the money, fairness, integrity, transparency, and effective international competition.

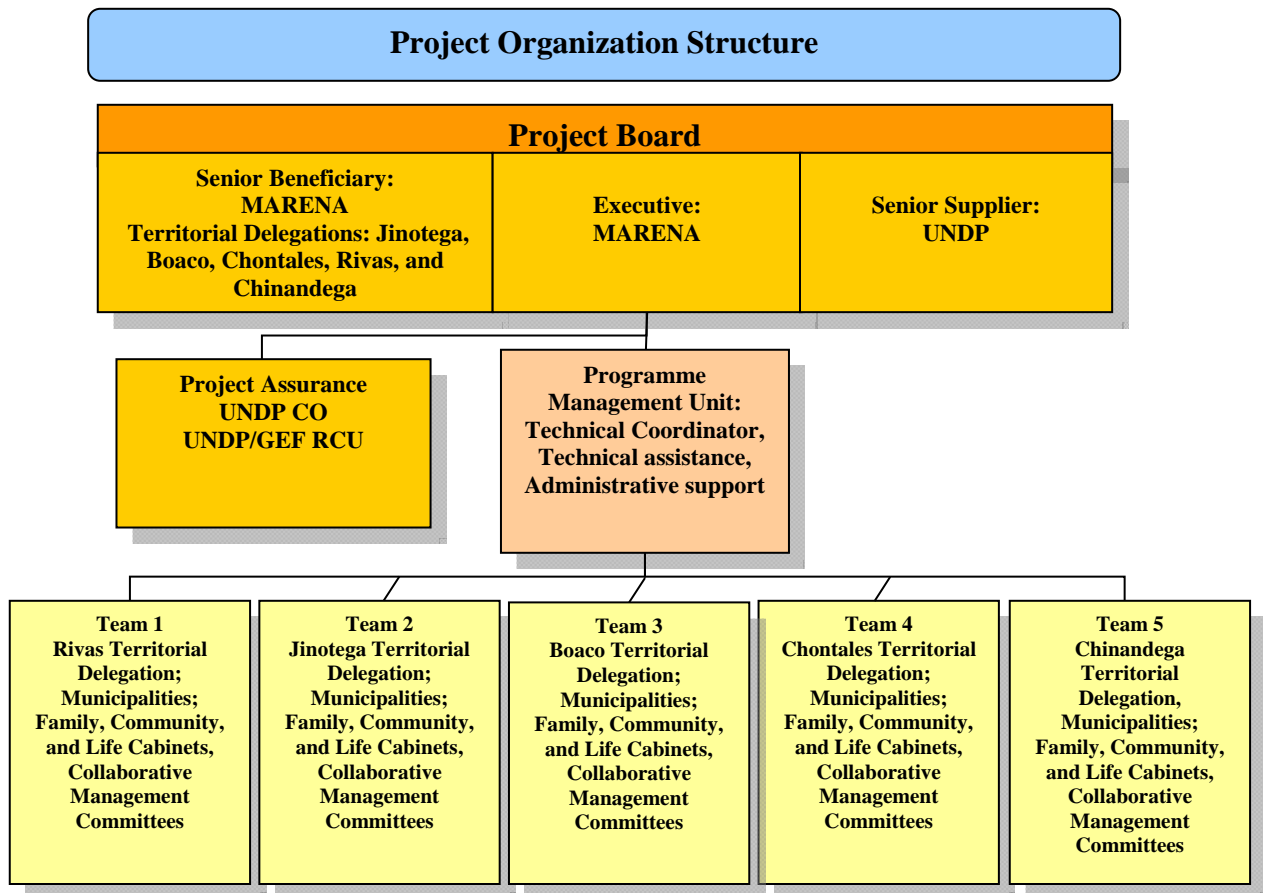
191. The SC is consulted by the General Project Coordinator to make decisions when the General Project Coordinator's tolerances (normally in terms of time and budget) have been exceeded (flexibility). The SC ensures that required resources are committed and arbitrates any conflicts within the project or negotiates a solution to any problems between the project and external entities.

192. The SC will be composed of MARENA (Director of the Natural Patrimony and Directors of Territorial Delegations: Jinotega, Boaco, Chontales, Rivas, and Chinandega), and UNDP. The SC will meet once every six months; however, additional meetings may be scheduled based on the project's needs. The General Project Coordinator and the UNDP CO will be responsible for convening and planning the SC meetings.

193. The **Technical Project Coordinator (TPC)** will be contracted by MARENA following the principles of transparency and equal opportunities for everybody, and will be financially supported by project funds. The TPC will run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints/tolerances laid down by the SC. The TPC's prime responsibility is to ensure that the project delivers the outputs specified in this Project Document, to the required standards of quality and within the specified constraints of time and cost. Terms of Reference for the TPC are included in Annex 8.2 of this Project Document.

194. The TPC will receive support from an Accounting-Finance Specialist and a Monitoring and Evaluation Specialist, which will be financially supported by project funds. Terms of Reference for these support staff are included in Annex 8.2 of this Project Document.

195. **Project Assurance:** Project assurance is the responsibility of each SC member; however, the role can be delegated. The project assurance role supports the SC by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management and that milestones are achieved. Project assurance is independent of the PC; therefore, the SC cannot delegate any of its assurance responsibilities to the PC. The UNDP Environment, Energy, and Risk Management Officer and the UNDP/GEF RCU in Panama will also hold the role of project assurance.



6. MONITORING FRAMEWORK AND EVALUATION

196. Project M&E will be conducted in accordance with the established UNDP and GEF procedures and will be provided by the project team and the UNDP-CO with support from the UNDP/GEF RCU in Panama City. The Project Results Framework in Section 3 provides performance and impact indicators for project implementation along with their corresponding means of verification. The M&E plan includes an inception report, project implementation reviews, annual review reports, mid-term and final evaluations, and audits. The following sections outline the principle components of the M&E plan and indicative cost estimates related to M&E activities. The project's M&E plan will be presented and finalized in the Project Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Project Inception Phase

197. A **Project Inception Workshop (IW)** will be held within the first three (3) months of project start-up with the full project team, relevant GoN counterparts, co-financing partners, the UNDP-CO, and representation from the UNDP-GEF RCU, as well as UNDP-GEF headquarters as appropriate.

198. A fundamental objective of this IW will be to help the project team to understand and take ownership of the project's goal and objectives, as well as finalize preparation of the project's first annual work plan on the basis of the Project Results Framework and GEF Tracking Tools (BD, LD, CCM, and

SFM/REDD+). This will include reviewing the results framework (indicators, means of verification, and assumptions), imparting additional detail as needed, and on the basis of this exercise, finalizing the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.

199. Additionally, the purpose and objective of the IW will be to: a) introduce project staff to the UNDP-GEF team that will support the project during its implementation, namely the CO and responsible RCU staff; b) detail the roles, support services, and complementary responsibilities of UNDP-CO and RCU staff in relation to the project team; c) provide a detailed overview of UNDP-GEF reporting and M&E requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), as well as Mid-term and Final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNDP project-related budgetary planning, budget reviews including arrangements for annual audit, and mandatory budget re-phrasings.

200. The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines and conflict resolution mechanisms. The Terms of Reference (ToR) for project staff and decision-making structures will be discussed, as needed, in order to clarify each party's responsibilities during the project's implementation phase. The IW will also be used to plan and schedule the Tripartite Committee (TC) Reviews.

Monitoring Responsibilities and Events

201. A detailed schedule of project review meetings will be developed by the project management in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: a) tentative timeframes for TC Reviews, Steering Committee (or relevant advisory and/or coordination mechanisms); and b) project-related M&E activities.

202. **Day-to-day monitoring** of implementation progress will be the responsibility of the TPC based on the project's AWP and its indicators, with support of the M&E Expert of the Project. The TPC will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion. The TPC will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the IW with support from UNDP-CO and assisted by the UNDP-GEF RCU. Specific targets for the first-year implementation progress indicators together with their means of verification will be developed at this workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the AWP. Targets and indicators for subsequent years will be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

203. Measurement of impact indicators related to global benefits will occur according to the schedules defined through specific studies that are to form part of the project's activities and specified in the Project Results Framework.

204. **Periodic monitoring** of implementation progress will be undertaken by the UNDP CO through quarterly meetings with the project implementation team, or more frequently as deemed necessary. This will allow parties to take stock of and to troubleshoot any problems pertaining to the project in a timely fashion to ensure the timely implementation of project activities. The UNDP CO and UNDP-GEF RCU, as appropriate, will conduct yearly visits to the project's field sites, or more often based on an agreed upon schedule to be detailed in the project's Inception Report and AWP to assess first-hand project progress. Any other member of the Steering Committee can also take part in these trips, as decided by the Steering Committee. A Field Visit Report will be prepared by the UNDP CO and circulated no less than one month after the visit to the project team, all Steering Committee members, and UNDP-GEF.

205. **Annual monitoring** will occur through the **TC Reviews**. This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to TC review at least once every year. The first such meeting will be held within the first twelve (12) months of the start of full implementation. The project proponent will prepare an APR and submit it to UNDP CO and the UNDP-GEF regional office at least two weeks prior to the TC for review and comments.

206. The APR will be used as one of the basic documents for discussions in the TC. The TPC will present the APR to the TC, highlighting policy issues and recommendations for the decision of the TC participants. The TPC will also inform the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary. The TC has the authority to suspend disbursement if project performance benchmarks are not met. Benchmarks will be developed at the IW, based on delivery rates and qualitative assessments of achievements of outputs.

207. The **Terminal TC Review** is held in the last month of project operations. The TPC is responsible for preparing the Terminal Report and submitting it to UNDP-CO and to UNDP-GEF RCU. It shall be prepared in draft at least two months in advance of the TC meeting in order to allow review, and will serve as the basis for discussions in the TC meeting. The terminal TC review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learned can be captured to feed into other projects being implemented.

Project Monitoring Reporting

208. The TC, in conjunction with the UNDP-GEF extended team, will be responsible for the preparation and submission of the following reports that form part of the monitoring process and that are mandatory.

209. A **Project Inception Report (IR)** will be prepared immediately following the IW. It will include a detailed First Year/AWP divided in quarterly timeframes detailing the activities and progress indicators that will guide implementation during the first year of the project. This work plan will include the dates of specific field visits, support missions from the UNDP CO or the RCU or consultants, as well as timeframes for meetings of the project's decision-making structures. The IR will also include the detailed project budget for the first full year of implementation, prepared on the basis of the AWP, and including any M&E requirements to effectively measure project performance during the targeted 12-month timeframe. The IR will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions, and feedback mechanisms of project-related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. When finalized, the IR will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to the IR's circulation, the UNDP CO and UNDP-GEF's RCU will review the document.

210. The **Annual Project Report (APR)** is a UNDP requirement and part of UNDP CO central oversight, monitoring, and project management. It is a self-assessment report by the project management to the CO and provides input to the country office reporting process and the Results-Oriented Annual Report (ROAR), as well as forming a key input to the TC Review. An APR will be prepared on an annual basis prior to the TC review, to reflect progress achieved in meeting the project's AWP and assess performance of the project in contributing to intended outcomes through outputs and partnership work. The format of the APR is flexible but should include the following sections: a) project risks, issues, and adaptive management; b) project progress against pre-defined indicators and targets, c) outcome performance; and d) lessons learned and best practices.

211. The **Project Implementation Review** (PIR) is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for one year, a PIR must be completed by the CO together with the project management. The PIR can be prepared any time during the year and ideally prior to the TC review. The PIR should then be discussed in the TC meeting so that the result would be a PIR that has been agreed upon by the project, the Implementing Partner, UNDP CO, and the RCU in Panama. The individual PIRs are collected, reviewed, and analyzed by the RCU prior to sending them to the focal area clusters at the UNDP-GEF headquarters. In light of the similarities of both APR and PIR, UNDP-GEF has prepared a harmonized format for reference.

212. Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform and the risk log should be regularly updated in ATLAS based on the initial risk analysis included in Annex 8.1.

213. **Specific Thematic Reports** focusing on specific issues or areas of activity will be prepared by the project team when requested by UNDP, UNDP-GEF, or the Implementing Partner. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learned exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

214. A **Project Terminal Report** will be prepared by the project team during the last three (3) months of the project. This comprehensive report will summarize all activities, achievements, and outputs of the project; lessons learned; objectives met or not achieved; structures and systems implemented, etc.; and will be the definitive statement of the project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's activities.

215. **Technical Reports** are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List detailing the technical reports that are expected to be prepared on key areas of activity during the course of the project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive and specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national, and international levels. Technical Reports have a broader function and the frequency and nature is project-specific.

216. **Project Publications** will form a key method of crystallizing and disseminating the results and achievements of the project. These publications may be scientific or informational texts on the activities and achievements of the project in the form of journal articles or multimedia publications. These publications can be based on Technical Reports, depending upon the relevance and scientific worth of these reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and (in consultation with UNDP, the GoN, and other relevant stakeholder groups) will also plan and produce these publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget

Independent Evaluation

217. The project will be subjected to at least two independent external evaluations as follows:

218. An independent **Mid-Term Evaluation** will be undertaken at exactly the mid-point of the project lifetime. The Mid-Term Evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency, and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation, and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, ToR, and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The ToR for this Mid-Term Evaluation will be prepared by the UNDP-CO based on guidance from the UNDP-GEF RCU. The management response of the evaluation will be uploaded to the UNDP corporate systems, in particular the UNDP Evaluation Resource Center (ERC). All GEF Tracking Tools for the project will also be completed during the mid-term evaluation cycle.

219. An independent **Final Evaluation** will take place three months prior to the terminal Steering Committee meeting, and will focus on the same issues as the Mid-Term Evaluation. The Final Evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP ERC. The ToR for this evaluation will be prepared by the UNDP-CO based on guidance from the UNDP-GEF RCU. All GEF Tracking Tools for the project will also be completed during the final evaluation.

Audit Clause

220. The project will be audited in accordance with the UNDP Financial Regulations and Rules and applicable audit policies

Learning and Knowledge Sharing

221. Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums. In addition, the project will participate, as relevant and appropriate, in UNDP-GEF sponsored networks, organized for Senior Personnel working on projects that share common characteristics. UNDP-GEF RCU has established an electronic platform for sharing lessons between the project managers. The project will identify and participate, as relevant and appropriate, in scientific, policy-based, and/or any other networks, which may be of benefit to project implementation through lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identifying and analyzing lessons learned is an ongoing process, and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered not less frequently than once every twelve (12) months. UNDP-GEF shall provide a format and assist the project team in categorizing, documenting, and reporting on lessons learned. Specifically, the project will ensure coordination in terms of avoiding overlap, sharing best practices, and generating knowledge products of best practices for SFM, SLM, climate change mitigation, and biodiversity conservation with the current projects of Nicaragua's portfolio.

M&E work plan and budget

Type of M&E activity	Responsible Parties	Budget US\$*	Time frame
Inception Workshop	• General Project Coordinator	GEF: \$2,500	Within first two

Type of M&E activity	Responsible Parties	Budget US\$*	Time frame
	<ul style="list-style-type: none"> • UNDP CO • UNDP GEF 	COF: \$2,000	months of project start-up
Inception Report	<ul style="list-style-type: none"> • Project Team • UNDP CO 	None	Immediately following IW
Measurement of Means of Verification of project results	<ul style="list-style-type: none"> • UNDP GEF Regional Technical Advisor/Project Coordinator will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members 	To be determined during the initial phase of implementation of the project and the IW.	Start, mid-point, and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	<ul style="list-style-type: none"> • Oversight by General Project Coordinator • Project Team 	No separate M&E cost: to be absorbed within salary and travel costs of project staff	Annually prior to ARR/PIR and to the definition of annual work plans
APR and PIR	<ul style="list-style-type: none"> • General Project Coordinator and Team • UNDP-CO • UNDP-GEF 	None	Annually
Tripartite Committee Reviews and Reports	<ul style="list-style-type: none"> • GoN counterparts • UNDP CO • UNDP GEF RCU 	None	Annually, upon receipt of APR
Project Board Meetings	<ul style="list-style-type: none"> • General Project Coordinator • UNCP-CO • GoN representatives 	GEF: \$2,500 COF: \$3,000	Two times per year
Quarterly progress reports	<ul style="list-style-type: none"> • General Project Coordinator and Team 	None	Quarterly
Technical reports	<ul style="list-style-type: none"> • General Project Coordinator and Team • Hired consultants as needed 	GEF: \$5,000 COF: \$4,000	To be determined by Project Team and UNDP-CO
Mid-term Evaluation	<ul style="list-style-type: none"> • General Project Coordinator and Team • UNDP- CO • UNDP-GEF RCU • External Consultants (i.e., evaluation team) 	GEF: \$37,100 COF: \$8,000	At the mid-point of project implementation
Final Evaluation	<ul style="list-style-type: none"> • General Project Coordinator and Team • UNDP- CO • UNDP-GEF RCU • External Consultants (i.e. evaluation team) 	GEF: \$46,720 COF: \$13,000	At least three months before the end of project implementation
Terminal Report	<ul style="list-style-type: none"> • Project Team • UNDP-CO • Hired consultants as needed 	GEF: \$2,000 COF: \$2,000	At least three months before the end of the project
Lessons learned	<ul style="list-style-type: none"> • General Project Coordinator and 	GEF: \$5,000	Yearly

Type of M&E activity	Responsible Parties	Budget US\$*		Time frame
	Team <ul style="list-style-type: none"> • UNDP-GEF RCU (suggested formats for documenting best practices, etc.) 	COF: \$4,000		
Audit	<ul style="list-style-type: none"> • UNDP-CO • General Project Coordinator and Team 	GEF: \$46,400 (\$9,280 per year)		Yearly
Visits to field sites	<ul style="list-style-type: none"> • UNDP-CO • UNDP-GEF RCU (as appropriate) • GoN representatives 	No separate M&E cost: paid from IA fees and operational budget		Yearly
TOTAL INDICATIVE COST (*Excluding project team staff time and UNDP staff and travel expenses)		GEF	\$147,220	
		COF	\$36,000	
		Total	\$183,220	

7. LEGAL CONTEXT

222. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement (SBAA) between the GoN and the UNDP, signed by the parties on July 20, 1998 and approved by Decree No. 17-2000 (March 29, 2000). The host country implementing agency shall, for the purpose of the SBAA, refer to the government co-operating agency described in that Agreement.

223. The UNDP Resident Representative in Nicaragua is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes: a) revision of, or addition to, any of the annexes to the Project Document; b) revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation; c) mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and d) inclusion of additional annexes and attachments only as set out here in this Project Document.

224. This document, together with the CPAP, which was signed by the GoN and UNDP and is incorporated by reference, constitutes a Project Document as referred to in the SBAA. All CPAP provisions apply to this document.

225. Consistent with the Article III of the SBAA, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner.

226. The Implementing Partner shall: a) put into place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried out; and b) assume all risks and liabilities related to the Implementing Partner's security and the full implementation of the security plan.

227. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required herein shall be deemed a breach of this agreement.

228. The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism, and that the recipients of any amounts provided by UNDP herein do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

8. ANNEXES

8.1. Risk Analysis

Project Title: Strengthening the resilience of multiple-use protected areas to deliver multiple global environmental benefits	Award ID: 00083775	Date: October 2014
--	---------------------------	---------------------------

#	Description	Date Identified	Type	Probability and Impact	Countermeasures/ Management Response	Owner	Submitted, Updated By	Last Update	Status
1	Limited benefits to farmers from conservation and SFM and SLM sustain pressure on PAs from competing land uses	January 18, 2013 (at PIF)	Socioeconomic	Enter probability on a scale from 1 (low) to 5 (high) P = 3 Enter impact on a scale from 1 (low) to 5 (high) I = 3	To mitigate this risk, the project will make use of conservation-based and SFM-based incentives (including performance-based payment plans) to promote the implementation of sustainable production practices. Farmers participating in these activities will be properly informed about the benefits of conservation and SFM and SLM and will benefit from related training. In addition, farmers will receive assistance from the project for the development of integrated farm management plans that will specify the spatial and temporal arrangements of different land uses across farms, allowing farmers to improve on-farm sustainability.	MARENA	UNDP CO, MARENA	At CEO Endorsement	Risk continues to persist
2	Failures in the functioning of relations between PA staff and	January 18, 2013 (at PIF)	Institutional	Enter probability on a scale from 1 (low) to 5 (high)	To promote collaboration between PA staff and municipal authorities, the project will make use of collaborative agreements that	MARENA	UNDP CO, MARENA	At CEO Endorsement	Risk continues to persist

	municipal authorities limits the integration of PA management with conservation efforts in the wider landscape			P = 2 Enter impact on a scale from 1 (low) to 5 (high) I = 2	allow the joint management of PAs. By doing so, municipal authorities will be able to more easily integrate conservation efforts within and from outside of the PAs, while PA authorities will have a chance to buffer PAs more effectively. Both PA staff and municipal authorities will have access to information and monitoring systems that will facilitate the exchange of information and enable joint decision-making. Furthermore, the project will involve both parts in all stages of the project's design phase as a way to promote early collaboration and to build trust. During project implementation, the joint development and application of work plans and indicators will be promoted.				
3	Poorly developed tenure conditions limit producers' eligibility for REDD+ and other incentives	January 18, 2013 (at PIF)	Legal	Enter probability on a scale from 1 (low) to 5 (high) P = 3 Enter impact on a scale from 1 (low) to 5 (high) I = 3	In order to reduce the risk related to the lack of clarity regarding land property and use rights, the project will work closely with local governments to coordinate land titling, respecting all existing forms and regulations that guarantee those rights. In the cases where there is little clarity or conflict exists regarding property and use rights, the project will assume a conciliatory approach in	MARENA	UNDP CO, MARENA	At CEO Endorsement	Risk continues to persist

					order to arrive at the best solution possible for all parties without compromising the achievement of the project's outcomes.				
4	Degradation of the tropical dry forest and loss of forest coverage as a consequence of extreme climatic events	January 18, 2013 (at PIF)	Environmental	<p>Enter probability on a scale from 1 (low) to 5 (high) P = 2</p> <p>Enter impact on a scale from 1 (low) to 5 (high) I = 2</p>	The risks related to climate change may include more intense dry seasons and/or torrential rains associated with tropical storms and hurricanes. This could lead to increased forest degradation, including changes to plant communities or forest/ecosystem cover due to landslides, accelerated loss of soil, and desertification. The project's actions for sustainable forest and ecosystem management will translate into more solid and increased coverage, as well as healthier forests (for example, diversity of age classes and greater regenerative capacity) that are resilient to climate variability. In addition, there will be greater protection of the soil and regulation of hydric cycles that generate stable microclimatic conditions with benefits for their associated species and forests, as well as a reduction of vulnerability of local communities to climate change.	MARENA	UNDP CO, MARENA	At CEO Endorsement	Risk continues to persist

8.2. Terms of Reference for Key Project Staff

The following are the indicative ToR for the project management staff. The PIU will be supervised by the General Project Coordinator and will be staffed by a full-time Technical Project Coordinator, a full-time Accounting-Finance Specialist, and a full-time Monitoring and Evaluation Specialist all of whom will be nationally-recruited positions. The ToR for these positions will be further discussed with UNDP's CO and will be fine-tuned during the IW so that roles and responsibilities and UNDP GEF reporting procedures are clearly defined and understood. Also, during the IW the ToR for specific consultants and sub-contractors will be fully discussed and, for those consultancies to be undertaken during the first six months of the project, full ToR will be drafted and selection and hiring procedures will be defined.

The **General Project Coordinator** will be the Director of the Natural Patrimony of MARENA. S/he will be directly responsible for the Project's execution and will serve as the direct link between MARENA and the UNDP, the participating entities in the Project, and MARENA's territorial delegations. S/he will be provided with technical support by MARENA's staff and technical and administrative staff to be hired by the project. The Project's General Coordinator primary responsibilities will be the following:

- Review and present the Project Execution Plan (PEP) and the Annual Work Plans (AWP) to the Project's Technical Committee for their comments prior to approval by the highest authority within MARENA or whomever acts on his/her behalf;
- Review and present the annual Budget and the Project's Acquisitions Plan to the Project's Technical Committee so that it may issue comments prior to the approval by the highest authority within MARENA or whomever acts on his/her behalf;
- Request that the Department of Acquisitions of MARENA implement the processes for public bid and contract, in accordance with UNDP guidelines;
- Approve the requests for payment made to the General Financial Administration Department (DGAF, according to its Spanish acronym);
- Present, through the DGAF, financial status updates for the Project in accordance with the deadlines set forth by UNDP;
- Present, through the DGAF, requests for financial disbursement and their corresponding justification of expenses and eligible payments. These requests shall be prepared and presented in accordance with UNDP guidelines. The GEF's grant resources shall be managed in accordance with the procedures agreed upon by UNDP.
- Review and present progress reports to the Project's Technical Committee in accordance with the UNDP and GEF guidelines as set forth in the Project Document, so that the Technical Committee may issue comments prior to approval from the highest authority of MARENA or whoever acts on his/her behalf.
- Monitor compliance of the Contract Clauses set forth in the Project Document and all interinstitutional agreements and contracts established as part of the execution of the Project;
- Adjust and approve the updating of the SRAs' menu and request a "no objection" from UNDP;
- Periodically review compliance with the agreed upon goals of the Project's results;
- Request disbursements from UNDP and appropriately oversee the functioning of the monitoring system;
- Direct the planning, development, and organization of the Project's operational plans and activities.

- Contract external auditing services in accordance with UNDP Policies and Regulations and present the corresponding audit reports;
- Oversee compliance of any agreements established with participating entities of the Project and with the co-financing entities.

The **Technical Project Coordinator** shall be a consultant hired by MARENA, having a degree in forestry engineering, agronomy, biology, or other related subjects. The Technical Coordinator will be located in MARENA's Climate Change Division. A Master's degree in natural resources management, climate change, sustainable forest management, sustainable land management, project management, and/or project management is desired. S/he should have 10 years of professional experience and 5 years of experience in the management/coordination/advisor of similar projects in the public sector. His/her primary responsibilities will be the following:

- Create, update, and oversee the annual programming of activities necessary to achieve the results that have been established;
- Contract the required goods and services; provide technical support for the management of these contracts;
- Appropriately manage the Project and supervise the associated activities and contracts, maintaining the supporting documentation;
- Prepare financial disbursement requests in coordination with the DGAF;
- Oversee the Project's Monitoring, Follow-up, and Evaluation System (SIMOSE, according to its Spanish acronym), including the Project's impact indicators, which are contained in the Results Framework and Tracking Tools for biodiversity (BD), land degradation (LD), climate change mitigation (CCM), and sustainable forest management/REDD+ (SFM/REDD+), in accordance with GEF requirements.
- Periodically prepare reports on the progress in achieving the goals of the agreed-upon results. MARENA will make this information publicly available through all of its institutional means;
- Maintain strict coordination with MARENA's departmental delegations for operation of the Project, with the mayoral offices, and with all public sector and cooperating institutions related to the Project's execution;
- Prepare reports in accordance with UNDP and GEF guidelines, indicating (among other things) progress in the compliance with the indicators contained in the project's results framework, the project's financial performance, and compliance with the contract clauses;
- Provide technical support to the General Project Coordinator in the planning and management of activities, support the development of a semiannual work plan, as well as the efficient management of the work plan;
- Manage, update, and provide during meetings the necessary documentation for facilitating decision-making by the General Project Coordinator.
- Facilitate the flow of information authorized by the General Project Coordinator among the different internal and external layers of the Project;
- Facilitate and provide technical support for the organization of meetings and preparing presentations requested by the General Project Coordinator, with the team of specialists working at the central level, the departmental delegates, and cooperating organizations that are financing the project;
- Support the development of meeting notes and agreements from the most important meetings of the General Project Coordinator and those that s/he stipulates, UNDP, and other entities associated with

the project, and other general meetings between the Coordinator and government officials, taking notes on all agreements that arise from these meetings;

- Distribute in a timely manner the minutes from the meetings between the group of specialists with the Project General Coordination and/or departmental delegates;
- Receive and review the quality of the documentation to be signed by the General Project Coordinator;
- Support the General Project Coordinator during work meetings as required, as well as during field activities and meetings; and
- Perform other functions as they are required by the General Project Coordinator, related to the execution of the Project.

The **Accounting-Finance Specialist** shall be a professional with a degree in the areas of finance, accounting, or business management, with 5 years of work experience; of which 3 years shall be in administrative, financial, and accounting management of projects and/or programs in the public sector. The consultant shall be located in the Financial Administration Division of MARENA. His/her primary responsibilities shall be the following:

- Create daily and monthly receipts for the Project to log accounting transactions in a timely manner;
- Review supporting documentation for check requests; ensuring they are properly accounted and registered;
- Develop monthly bank reconciliation reports for the costs incurred by the Project, which must be carried out no more than 15 days after the month in which they are reconciled;
- Maintain updates of the Project's accounting logs, including checks on the Project's fixed costs, and carry out periodic programmed inventories;
- Log and update the execution of the Project budget;
- Provide support to the Head of the Ministry's Accounting Department for effective strategic coordination of the Project's accounting component;
- Support internal audits by MARENA and external auditing firms when they are performing reviews during the life of the Project;
- Develop the Financial Status updates of the Project and any other financial information required by UNDP and the GEF. This includes the Project's financial plan for monitoring and execution. The financial plan is a fundamental element for preparing requests for payment and justification of fund;
- Implement the recommendations contained in the internal and external audit reports on the financial and accounting operations of the Project;
- Manage the computerized Integrated System of Project Management (SIGFAPRO, according to its Spanish acronym) to register and monitor the Project's financial accounting operations;
- Update and organize the documentation archive that supports the accounting logs for the Project and all financial resources;
- Turn over all accounting logs to date to any replacement, before definitively leaving your duties;
- Complete any other task with regard to the Project that the Head of the Financial Department or the Director of the DGAF of MARENA should require of you; and
- Comply with the obligations stipulated in the Internal Monitoring Technical Guidelines (NTCI, according to its Spanish acronym) of the Office of the Comptroller of the Republic of Nicaragua.

The **Monitoring and Evaluation Specialist** shall be a professional with a degree in economics, engineering, business management, or other similar areas with a focus on project monitoring and evaluating. S/he shall have 10 years of experience, at least 5 years of which shall be in project monitoring and evaluation. Experience in data analysis, publications and/or reports based on field data are desired. The consultant shall be located in the Planning Department of MARENA. His/her primary functions shall be the following:

- Responsible for the proper functioning of the Project Monitoring and Evaluation System (SSE, according to its Spanish acronym), including the Project impact indicators contained in the Project's Results Framework and Tracking Tools for biodiversity (BD), land degradation (LD), climate change mitigation (CCM), and sustainable forest management/REDD+ (SFM/REDD+) in accordance with the GEF requirements.
- Coordinate with the different technical and administrative units of MARENA to program the different phases of the process. Establish in the AWP the necessary time and resources to comply with the SSE objectives.
- Coordinate the preparation of forms, questionnaires, tickets, and other tools for collecting information in the field within the framework of the SSE and the Project.
- Provide support to the Technical Project Coordinator in preparing the reports required by UNDP and the GEF, indicating, among other things, the progress in complying with the indicators shown in the results framework, the financial performance of the program, and compliance with contract clauses;
- Provide support to the Technical Project Coordinator in creating, updating, and supervising the yearly programming for activities that are necessary to achieve the results that have been set forth;
- Develop progress reports regarding the analysis of information stored in the data base.
- Prepare the terms of reference for the intermediate and final evaluations of the Project.

8.3. Capacity Assessment

Pursuant to the UN General Assembly Resolution 56/201 on the triennial policy review of operational activities for development of the United Nations system, UNDP, UNICEF, UNFPA and WFP (UNDG ExCom Agencies) adopted a common operational framework for transferring cash to government and non-government Implementing Partners. Its implementation will significantly reduce transaction costs and lessen the burden that the multiplicity of UN procedures and rules creates for its partners.

Financial regulation.27.02 (Definitions) of the UNDP Financial Regulations and Rules (FRR) defines National Implementation Modality (NIM) as: "The overall management of UNDP programme activities in a specific programme country carried out by an eligible national entity of that country." National implementation is used when there is adequate capacity in the national authorities to undertake the functions and activities of the programme or project.

National implementation is considered to be the norm since it is expected to contribute most effectively to:

- Greater national self-reliance by effective use and strengthening of the management capabilities, and technical expertise of national institutions and individuals, through learning by doing;
- Enhanced sustainability of development programmes and projects by increasing national ownership of, and commitment to development activities;
- Reduced workload and integration with national programmes through greater use of appropriate national systems and procedures.

The Agencies will assess the risks associated with transactions to an Implementing Partner, before initiating cash transfers under the harmonized procedures. Two types of assessments are required:

- **Macro Assessment:** In order to ensure adequate awareness of the Public Financial Management (PFM) environment within which Agencies will provide cash transfers to Implementing Partners, a review of existing assessments of the PFM system will be conducted. This review is expected to be undertaken once per programme cycle, preferably during Common Country Assessment (CCA) preparation, and may be updated whenever significant changes in the country's governance system are noticed. The Macro Assessment findings provide information on the national context that is useful for each Micro Assessment. The findings related to the national audit system establish whether the audit system can be relied on to conduct the required audits of Implementing Partners who receive cash transfers. The Macro Assessment does not include an overall risk rating.
- **Micro Assessment:** This assesses the risks related to cash transfers to the partner and is done once every programme cycle, or whenever a significant change in the Implementing Partner's organizational management is noticed. Assessments should be done for partners (government or NGO) that receive or are expected to receive cash transfers above an annual amount (usually US\$ 100,000 combined from all Agencies). The micro assessment reviews the Implementing Partner's system of accounting, reporting, auditing, and internal controls.

The Macro and Micro Assessments serve two objectives:

- **Development objective:** The assessments help Agencies and the Government to identify strengths and weaknesses in the PFM system and the financial management practices of individual Implementing Partners, and identify areas for capacity development.
- **Financial management objective:** The assessments help Agencies identify the most suitable resource *transfer* modality and procedures, and scale of assurance activities to be used with each Implementing Partner.

After assessing the national procurement and financial systems and the capacity of implementing partners, UNDP will adopt a risk management approach and select the most suitable funds transfer modality. In addition, UNDP will define steps to ensure the proper use of the funds provided. This will approach will ensure greater convergence between the assistance provided and the priorities and needs of each country.

Micro Assessment: MARENA

Based on the operating guidelines provided above, a micro assessment was performed from October to November 2012 to evaluate MARENA's financial management capacity. The evaluation included a validation visit to MARENA's headquarters after the agency completed a financial management questionnaire. The visit had the following objectives: a) to verify the basis on which MARENA answered affirmatively or negatively each of the questions of "Checklist B": Questionnaire on financial and procurement management; b) to identify the internal project risks related to financial management: management of funds, staffing, accounting policies and procedures, internal audit, external audit, reporting and monitoring, security of information systems, and procurement processes; c) to define the modality of cash transfer; d) to define the procurement procedures to be used; and e) to identify the training needs for the Implementing Partner, if necessary.

The methodology used for the micro assessment²⁵ is aligned with the corporate procedures established by the UN as part of the assessment of institutional capacity, which in summary consists of the use of verification questionnaires for the different areas that are to be assessed. Once the Agency under evaluation fills out the questionnaire, a visit is made to validate the information provided in the

²⁵ This methodology, which is based on the key points of UNDP's practice note on capacity assessment and scores, applies the OECD-DAC Methodology.

questionnaire. The visit includes an introduction during which the purpose and methodology of the assessment are outlined, the structures of the working groups by area are defined, and additional details about the information provided are obtained, including any supporting documentation. Finally, the key findings are shared with all of the participants of the assessment.

The results of the micro assessment indicate that after years of efforts to strengthen procurement management processes, Nicaragua now has a unified system in place that is strengthened by a regulatory framework for Public Sector Procurement Management, a governing body, implementing agencies with a system for internal and external auditing, and a technological platform to promote the democratization of information, among other advancements. This system is properly aligned with the minimum standards and principles set forth in the financial regulations of the UNDP.

It was concluded in the micro-assessment that in the area of **financial management, MARENA has a low risk level** for management processes for fund management, staffing, accounting policies and procedures, internal auditing, external auditing, and reporting and information systems. With regard to **procurement processes, MARENA has a moderate risk level.**

8.4. Stakeholder Involvement Plan

During the PPG phase of the project, key national and local stakeholders participated in planning and project design workshops and several smaller focus group sessions and meetings. Other participants included the project team, UNDP CO, and staff from the MARENA. Descriptions of the PPG phase participatory process are presented below.

Project Results Framework Workshop. The Results Framework Workshop was held from June 24-25, 2014, in the city of Managua. The objectives of this workshop were: a) to define the Results Framework, including the revised project outputs, indicators, baseline information, goals, verification mechanisms, and assumptions; b) to develop the preliminary definition of the project's activities for each outcome/output; c) to define a preliminary budget for the project, including the co-financing; and d) to update the PPG phase Work Plan.

The participants in the PPG Phase Inception Workshop included staff from MARENA, UNDP CO, and the PPG project team.

Stakeholder Participation Plan for the Project Implementation Phase

Objectives of the Stakeholder Participation Plan: The creation of the stakeholder participation plan had the following objectives: a) to validate with local stakeholders, the proposed project activities, including the results framework; b) to identify the basic roles and responsibilities of the main participants in the project; c) to ensure full knowledge of those involved concerning the progress and obstacles in project development and to take advantage of the experience and skills of the participants to enhance project activities; and d) to identify key instances in the project cycle where stakeholder involvement would occur. The ultimate purpose of the stakeholder participation plan will be the long-term sustainability of the project outcomes, based on transparency and the effective participation of the key stakeholders.

During the PPG phase, multiple stakeholders were involved in the project design process, including local governments (municipal environmental units, members of municipal councils, and Deputy Mayors), local offices of government agencies (MAGFOR, MARENA, National Institute of Technology [INATEC], ANA, Ministry of Families, Community, Co-operatives and the Associative Economy [MEFCCA], Ministry of Health, and INTA), universities, agriculture and cattle-ranching sectors, rural teachers, local NGOs, and 16 community organizations. The participants came from the core and buffer zones of the 12 MUPAs and from within the four biological corridors that are prioritized by the project. Their knowledge about local environmental and social factors aided the identification of activities that will contribute to the consolidation of the biological corridors and the effective management of the MUPAs.

Summary of Stakeholder Roles in Project Implementation:

Stakeholders	Project Implementation Role	Role in relation to Components
Ministry of Environment and Natural Resources (MARENA)	<p>MARENA manages the NSPA and will guide and provide support for all actions related to SFM, biodiversity conservation, PA management, reduction of land degradation, and CC mitigation (Components 1 and 2). It is the project’s Executing Entity.</p> <p>MARENA’s Local Territorial Delegations are the governing bodies of the PAs at the local level. The Local Territorial Delegations of Rivas, Jinotega, Boaco, Chontales, and Chinandega will play a central role in the development and implementation of the planning, management, monitoring, and enforcement frameworks for the 12 MUPAS prioritized by the project (Component 1). These MUPAs will benefit through training, equipment, and the implementation of information management tools for improving MUPA management effectiveness.</p>	C1 and C2
Municipalities (15)	<p>The municipalities (Wiwili, El Cua, Somotillo, Villanueva, Morazán, El Viejo, San José, Camoapa, Boaco, Santa Lucía, Comalapa, Juigalpa, Cuapa, Moyogalpa, and Altagracia) will actively participate in the planning and management of the MUPAs and their associated biological corridors (Component 1); these efforts will bring local benefits through biodiversity conservation and a sustainable flow of goods and services. The municipalities will be direct beneficiaries of the project in terms of receiving training in REDD+, SFM, SLM, and biodiversity conservation. By project’s end, the municipalities will be equipped with the technical tools (GIS-mapping tool and monitoring and enforcement system) to support decision-making and the assessment of SFM, SLM, and biodiversity conservation in dry and humid forest landscapes (Component 2).</p>	C1 and C2
Civil Society Organizations (CSOs)	<p>The CSOs include Family, Community, and Life Cabinets, which play a key role in the monitoring and control of PAs and their buffer zones, and serve as liaisons between the PA authorities and community members (Component 1). In addition, NGOs such as the Centro de Entendimiento con la Naturaleza (CEN) provide support to PA management and may be part of multi-sectoral collaborative agreements for the shared management of MUPAs (Component 1).</p>	C1
Local communities, including farmers	<p>Local communities living within the prioritized landscapes will actively participate in the development and updating of the MUPAs’ management plans, as well as in defining procedures, roles, and responsibilities for monitoring, surveillance, and enforcement of sustainable off-takes for forest products, and land use prescriptions for grazing, agriculture, and other acceptable production activities (Component 1). In addition, through Component 2, local communities (including men and women farmers) will implement BMPs to improve soil productivity, maintain forest coverage, and conserve biodiversity, including the implementation of sustainable agroforestry and silvopastoral systems. The local communities will be the beneficiaries of training, technical assistance, and</p>	C1 and C2

	performance-based compensation as a result of the implementation of an GEF-funded ENDE-REDD+ pilot project.	
Universities	Universities involved with the project include the Universidad Centroamericana of Nicaragua (UCA), National Autonomous University of Nicaragua (UNAN), and the National Agrarian University (UNA). These universities will play a central role in strengthening the capacity of MARENA's staff, including the Local Territorial Delegations (Rivas, Jinotega, Boaco, Chontales, and Chinandega) and PA staff, in planning, management, financial sustainability, and monitoring of PAs and biodiversity conservation (Component 1). In addition, the universities will provide technical support to the municipalities for the development of municipal-level planning, monitoring and enforcement systems to facilitate the assessment of SFM, SLM and biodiversity benefits and the GEF-funded ENDE-REDD+ pilot project MRV system (Component 2).	C1 and C2
Private sectors	The private sectors include cooperatives or producer associations (agriculture and cattle-ranching) and tourism businesses associated with the PAs. These groups will be part of the multi-sectoral collaborative agreements and management committees that supervise biodiversity conservation, support the effective management of the MUPAs considering the wider landscape, and ensure compliance with the sustainable use of forest products and off-takes and the use of biodiversity-friendly production methods (Component 1).	C1
Attorney General's Office, the National Police, and the Army	These control and enforcement agencies will protect and provide support for the actions of government agencies and will investigate violations of environmental laws and regulations. The Army is the main provider of logistics for fire suppression operations. These agencies will provide support for the enforcement of sustainable off-takes for forest products, and land use prescriptions for grazing, agriculture, and other acceptable production activities in the MUPAs (Component 1). Additionally, these agencies will participate in the development of an operational handbook for the prevention and control of environmental violations in MUPAs.	C1
Farming and Forestry Ministry (MAGFOR) and the National Forestry Institute (INAFOR)	The coordination of actions with MAGFOR and INAFOR will promote SFM and SLM and improve the management effectiveness of buffer zones of MUPAs (Component 2). As part of the institutional framework for the readiness and implementation of the ENDE-REDD+, MAGFOR/INAFOR will play a central role in providing technical support for implementation and monitoring of the GEF-funded ENDE-REDD+ pilot project (Component 2). In addition, performance-based compensation, as part of the GEF-funded ENDE-REDD+ pilot project, will be made through FONADEFO, which is a financial mechanism administered by INAFOR for fundraising and management of financial resources to support forestry programs and projects to promote SFM, increase economic development, conservation of natural resources, develop markets for PES, and the protection of the environment.	C2

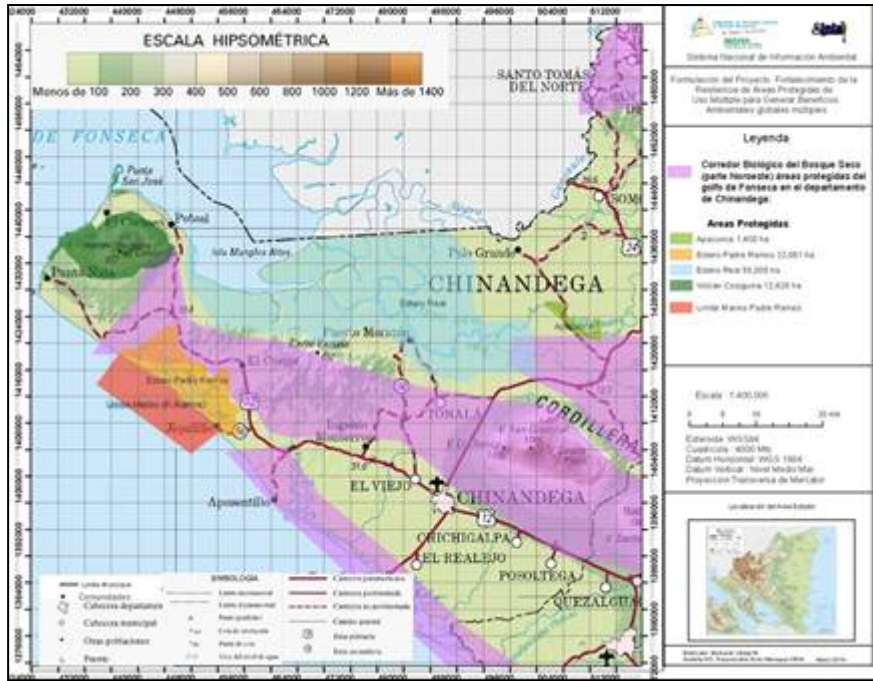
Participation Mechanisms: Three key phases for stakeholders' participation have been identified for the implementation phase of the project: planning, implementation, and evaluation. **Project planning** will include annual meetings with key stakeholders (local communities, municipal authorities, private sectors, etc.) during which annual goals will be set for each component of the project. These annual planning meetings will also serve to specify the activities that are to be funded through each co-financing source. **Project implementation** will take place according to the annual plans that are approved by the SC, which will be formed by the following agencies: MARENA, MARENA's Territorial Delegations in Jinotega, Boaco, Chontales, Rivas, and Chinandega, and the UNDP CO. The UNDP CO will be the Executing Agency. Local stakeholders (e.g., municipalities; Family, Community, and Life Cabinets; and members of collaborative management committees) will influence the project through their participation in the implementation of specific activities. **Project evaluation** will occur annually with the participation of key stakeholders at the end of each planning year and previous to defining the annual plan for the following year of project implementation. Also, mid-term and final evaluations will be carried out as part of the project cycle. Due to the independent nature of these evaluations, they will be key moments during the project's life when stakeholders can express their views, concerns, and assess whether the project's outcomes are being achieved and if necessary, define the course of correction.

8.5. Tracking Tool

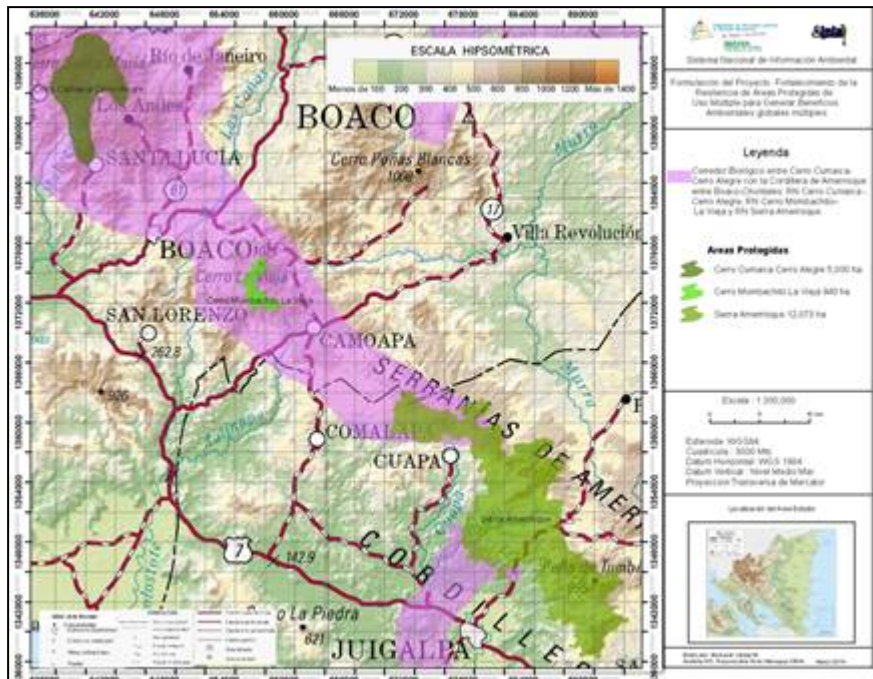
The tracking tools related with the project (BD, CC, LD, and SFM/REDD+) are included in separate files.

8.6. Prioritized Biological Corridors.

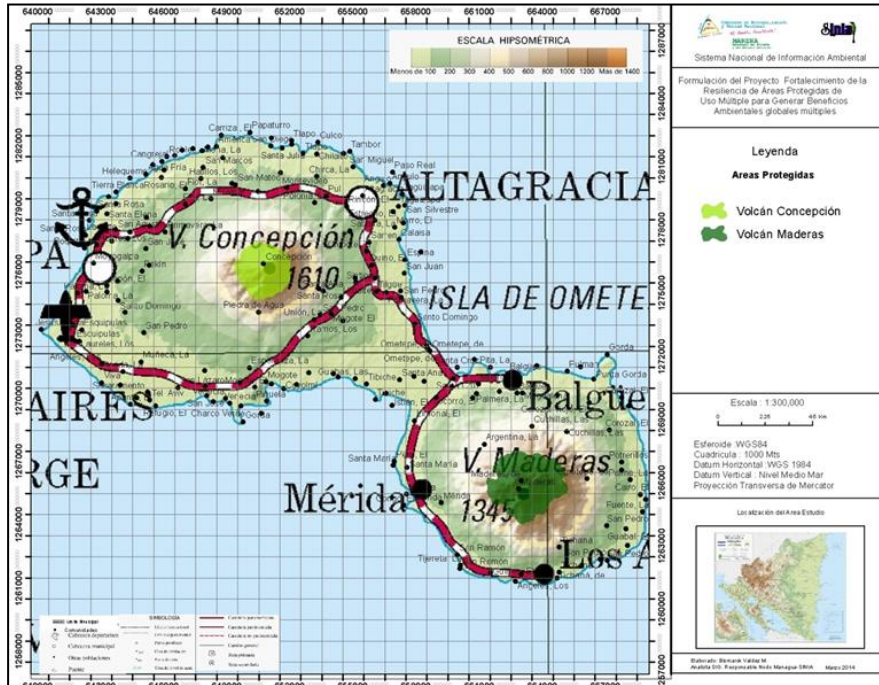
Chinandenga–Rivas Dry Forest Corridor



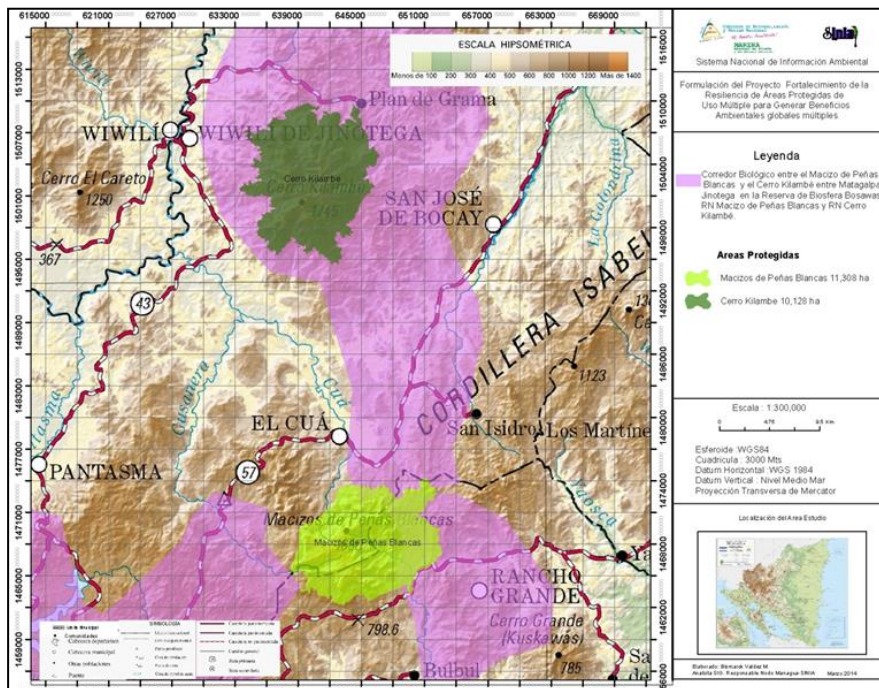
Cerro Cumaica Cerro Alegre–Mombachito Cerro La Vieja–Sierra Amerrisque Biological Corridor



Lake Nicaragua Islands Corridor



Peñas Blancas–Kilambé Corridor



8.7. VCS methodology VM0015²⁶

Description of the proposed REDD+ methodology

The methodology proposed for the REDD+ project is VCS methodology VM0015. This methodology was developed on behalf of the World Bank (BioCarbon Fund) and the Brazilian Foundation for Sustainable Amazonas. VM0015 is for estimating and monitoring GHG emissions of project activities for avoid unplanned deforestation. It also gives the option to account for carbon stock enhancements in degraded forests that would be deforested in the baseline case. Credits for reducing GHG emissions from avoided degradation, however, are excluded in this methodology because VCS considers the avoidance of emissions from degradation as a different category of activity (requiring different types of carbon accounting methodologies).

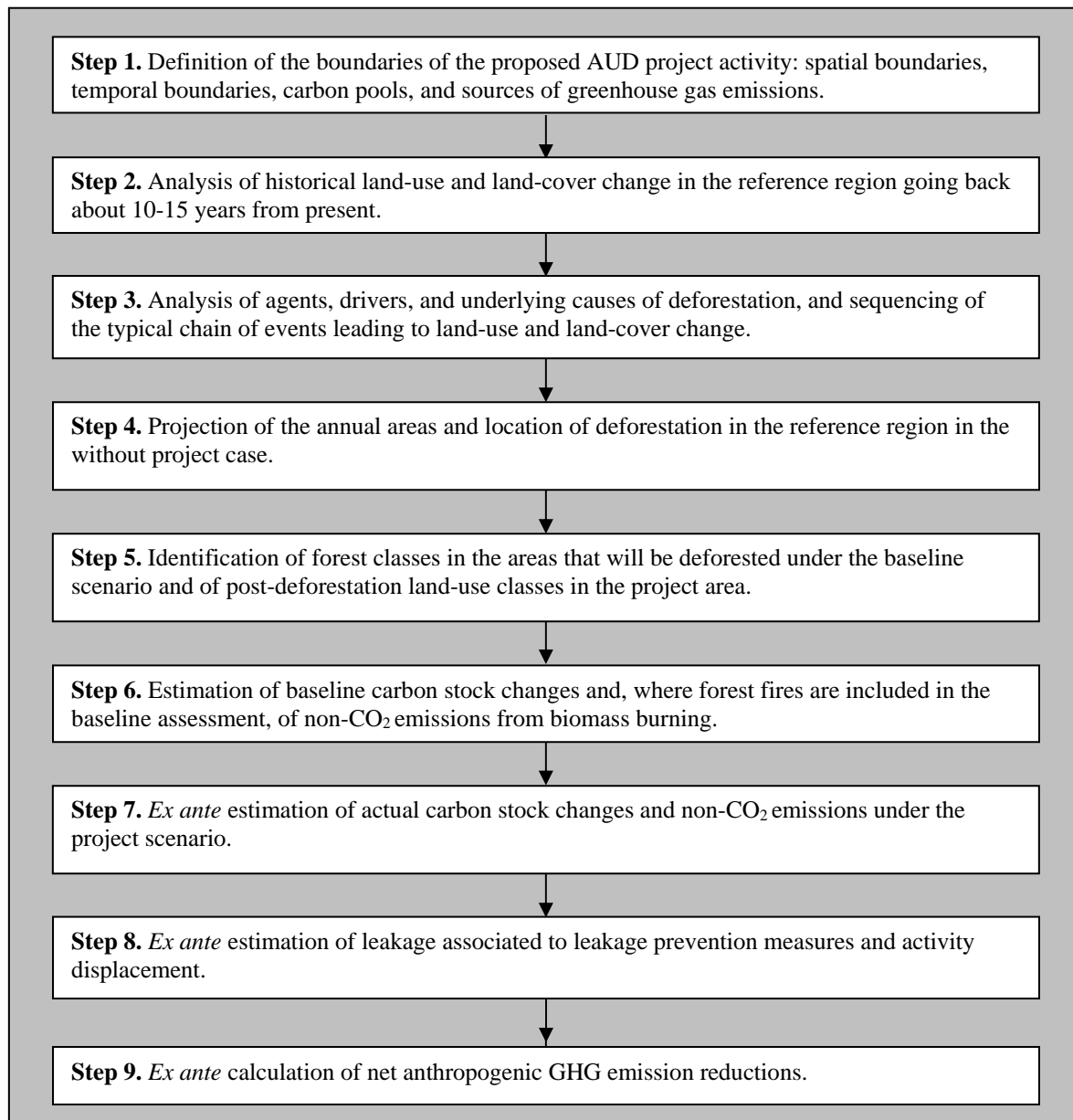
The methodology has no geographic restrictions and is applicable globally under the following conditions:

- a) Baseline activities may include planned or unplanned logging for timber, fuel-wood collection, charcoal production, and agricultural and grazing activities as long as the category is unplanned deforestation according to the most recent VCS AFOLU guidelines.
- b) Project activities may include one or a combination of the eligible categories.
- c) The project area can include different types of forest, such as, but not limited to, old-growth forest, degraded forest, secondary forests, planted forests, and agro-forestry systems meeting the definition of “forest.”
- d) At project commencement, the project area shall include only land qualifying as “forest” for a minimum of 10 years prior to the project start date.
- e) The project area can include forested wetlands (such as bottomland forests, floodplain forests, mangrove forests) as long as they do not grow on peat. Peat is defined as organic soils with at least 65% organic matter and a minimum thickness of 50 cm. If the project area includes forested wetlands growing on peat (e.g. peat swamp forests), the methodology would not be applicable in that area.

The methodology VM0015 involves nine steps that must be implemented sequentially in order to bring a project to successful validation and registration under the VCS. These are summarized below.

²⁶ Most of the text presented in this section has been copied from the summary description of VM0015, which is available at www.v-c-s.org.

Steps of the proposed methodology (Source: VCS, VM0015)



8.8. Stakeholder Capacity Development Assessment

a. Capacity for participation; b. Capacity for the creation of, access to, and use of information and knowledge; c. Capacity for the development of strategies, policy, and legislation; d. Capacity for management and implementation; e. Capacity for management and implementation; T = total.

Municipalities (%)

	a	b	c	d	e	T
Environmental Unit of Wiwilí	56	40	42	50	38	51
Environmental Unit of El Cuá	56	40	42	50	38	44
Environmental Unit of Somotillo	44	27	67	50	0	38
Environmental Unit of Villa Nueva	44	27	67	50	0	38
Environmental Unit of Puerto Morazán	44	27	67	50	0	38
Environmental Unit of El Viejo	44	27	67	50	0	38
Environmental Unit of San José de los Remates	33	20	33	50	0	27
Environmental Unit of Camoapa	33	20	33	50	0	27
Environmental Unit of Boaco	33	20	33	50	0	27
Environmental Unit of Santa Lucía	33	20	33	50	0	27
Environmental Unit of La Libertad	56	33	44	50	0	38
Environmental Unit of Camoapa	56	33	44	50	0	38
Environmental Unit of San Francisco de Cuapa	56	33	44	50	0	38
Environmental Unit of Juigalpa	56	33	44	50	0	38
Environmental Unit of Moyogalpa	33	40	56	50	33	40
Environmental Unit of Altigracia	33	40	56	50	33	40

CSOs (%)

	a	b	c	d	e	T
CSO 1: Cerro Kilambé	11	20	17	0	0	13
CSO 2: Macizo de Peñas Blancas	11	20	17	0	0	12
CSO 3: Estero Real	11	13	44	0	0	16
CSO 4: Apacunca	11	13	44	0	0	16
CSO 5: Estero Real	11	13	44	0	0	16
CSO 6: Cosigüina/Padre Ramos/Estero Real	11	13	44	0	0	16
CSO 7: Cerro Cumaica / Cerro Alegre	22	20	33	0	0	18
CSO 8: Cerro Cumaica / Cerro Alegre	22	20	33	0	0	18
CSO 9: Cerro Cumaica / Cerro Alegre	22	20	33	0	0	18
CSO 10: Cerro Cumaica / Cerro Alegre	22	20	33	0	0	18
CSO 11: Serranías de Amerrisque	0	0	0	0	0	0
CSO 12: Serranías de Amerrisque	22	20	33	0	0	18
CSO 13: Serranías de Amerrisque	22	20	33	0	0	18
CSO 14: Serranías de Amerrisque	22	20	33	0	0	18
CSO 15: Volcán Concepción	22	20	22	0	0	18
CSO 16: Volcán Madera	22	20	22	0	0	18

