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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED GRANT

IN THE AMOUNT OF
US$5.94 MILLION

TO THE

FONDO MUNDIAL PARA LA NATURALEZA (WWF COLOMBIA)

FOR A

ORINOQUIA INTEGRATED SUSTAINABLE LANDSCAPES PROJECT

July 23, 2019

Environment & Natural Resources Global Practice
Latin America And Caribbean Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective June 30, 2019)

Currency Unit =	
3,193 COP =	US$1
US$ 0.00031 =	COP 1

GOVERNMENT FISCAL YEAR
January 1 – December 31

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ABBREVIATIONS AND ACRONYMS

AUNAP	National Authority of Aquaculture and Fisheries (*Autoridad Nacional de Acuicultura y Pesca*)
ARPA	Amazon Region Protected Areas Program
BTM	Bita Ramsar Site – Tuparro Biosphere Reserve Mosaic
CAR	Regional Autonomous Corporation (*Corporación Autónoma Regional)*
CBD	Convention on Biological Diversity
CCM	Piedemonte Cocuy - Cinaruco Mosaic
CI	Conservation International
CONPES	National Council for Economic and Social Policy *(Consejo Nacional de Política Económica y Social)*
CoP	Conference of the Parties
CORMACARENA	Corporation for the Sustainable Development of the Special Management Area La Macarena *(Corporación para el Desarrollo Sostenible del Área de Manejo Especial La Macarena)*
CORPORINOQUIA	Orinoquia Autonomous Regional Corporation *(Corporación Autónoma Regional de la Orinoquia)*
CPF	Country Partnership Framework
CRDA	Regional Centers for Environmental Dialogue *(Centros Regionales de Diálogo Ambiental)*
DNMI	National Integrated Management District *(Distrito Nacional de Manejo Integrado)*
DNP	National Planning Department (*Departamento Nacional de Planeación)*
EICDGB	Integrated Strategy to Control Deforestation and Manage Forests *(Estrategia Integral de Control a la Deforestación y Gestión de los Bosques)*
ELN	National Liberation Army *(Ejército de Liberación Nacional)*
EMS	Ecological Main Structure
ERP	Enterprise Resource Plan
ESA	Environmental and Social Assessment
ESCP	Environmental and Social Commitment Plan
ESS	Environmental and Social Standards
FAP	Forest Action Plan
FARC	Alternative Revolutionary Force of the Common (formerly Revolutionary Armed Forces of Colombia*) (Fuerza Alternativa Revolucionaria del Común – previous known as Fuerzas Armadas Revolucionarias de Colombia)*
FCPF	Forest Carbon Partnership Facility
FM	Financial Management
FMA	Financial Management Assessment
FMS	Financial Management Specialist
FONTUR	National Tourism Fund (*Fondo Nacional de Turismo*)
GDP	Gross Domestic Product
GEB	Global Environmental Benefits

GEF	Global Environment Facility
GoC	Government of Colombia
GRM	Grievance Redress Mechanism
HECO	Heritage Colombia *(Herencia Colombia)*
IAvH	Alexander Von Humboldt Biological Resources Research Institute *(Instituto de Investigación de Recursos Biológicos Alexander von Humboldt)*
IBRD	International Bank for Reconstruction and Development
IDB	Inter-American Development Bank
IDEAM	Institute of Hydrology, Meteorology and Environmental Studies *(Instituto de Hidrología, Meteorología y Estudios Ambientales)*
ILM	Integrated Landscape Management
IP	Indigenous Peoples
IPPF	Indigenous Peoples Planning Framework
ISFL	Initiative for Sustainable Forest Landscapes
ITPS	Incentive for Sustainable Productive Transformation *(Incentivo para las Transformación Productiva Sostenible).*
MADR	Ministry of Agriculture and Rural Development *(Ministerio de Agricultura y Desarrollo Rural)*
MADS	Ministry of the Environment and Sustainable Development *(Ministerio de Ambiente y Desarrollo Sostenible)*
MoU	Memorandum of Understanding
M&E	Monitoring and Evaluation
MPI	Multidimensional Poverty Index
NDP	National Development Plan
NORECCO	Orinoquia Regional Climate Change Node *(Nodo Regional de Cambio Climático de la Orinoquia)*
OECD	Organization for Economic Cooperation and Development
OSIL	Orinoquia Sustainable Integrated Landscapes
OT	Territorial management *(Ordenamiento Territorial)*
PA	Protected Areas
PAB	Biodiversity Strategy and Action Plan *(Plan de Acción Nacional de Biodiversidad)*
PDET	Development Program with a Territorial Approach *(Programa de Desarrollo con Enfoque Territorial)*
PDO	Project Development Objective
PEMO	Orinoco Watershed Management Plan (*Plan Estratégico de la Macro Cuenca del Orinoco*)
PES	Payment for Ecosystem Services
PFP	Project Finance for Permanence
PIU	Project Implementation Unit
PNGIBSE	National Policy for the Integral Management of Biodiversity and its Ecosystem Services *(Política Nacional para la Gestión Integral de la Biodiversidad y sus Servicios Ecosistémicos)*
PNN	Natural National Parks of Colombia (*Parques Nacionales Naturales*)

POMCA	Watershed management plans (*Plan de Manejo y Ordenación de Cuenca*)
POT	Land Management Plans *(Plan de Ordenamiento Territorial)*
PRICCO	Regional Integrated Climate Change Plan for Orinoquia *(Plan Regional Integral de Cambio Climático)*
PSC	Project Steering Committee
PSR	Pressure-State-Response
RNSC	Civil Society Natural Reserves *(Reservas Naturales de la Sociedad Civil)*
RRI	Comprehensive Rural Reform *(Reforma Rural integral)*
RUNAP	Unique National Registry of Protected Areas (*Registro Unico Nacional de Areas Protegidas*)
SCD	Strategic Country Diagnostic
SIAC	Colombian Environmental Information System *(Sistema de Información Ambiental de Colombia)*
SIB	Biodiversity Information System *(Sistema de Información en Biodiversidad)*
SINA	National Environmental System *(Sistema Nacional Ambiental)*
SINAP	National System of Protected Areas *(Sistema Nacional de Áreas Protegidas)*
SIRAP	Regional System of Protected Areas *(Sistema Regional de Áreas Protegidas)*
TC	Technical Committee
TFA	Tropical Forest Alliance
UNFCCC	United Nations Framework Convention for Climate Change
USAID	United States Agency for International Development
WBG	World Bank Group
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Colombia	Orinoquia Integrated Sustainable Landscapes	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P167830	Investment Project Financing	Moderate

GEF Focal Area

Biodiversity

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
08-Aug-2019	30-Jun-2023

Bank/IFC Collaboration

No

Proposed Development Objective(s)

To promote representation of Orinoquia wetlands and savanna lands in land-use planning instruments and landscape

connectivity in selected project areas.

Components

Component Name	Cost (US$, millions)
Effective integration of environmental considerations at appropriate scales in territorial and sector planning	1.64
Landscape management for connectivity and resilience in priority biodiversity and ecosystem services areas	4.02
Project Management, Implementation, Coordination, Communication, Monitoring and Evaluation	0.27

Organizations

Borrower:	World Wildlife Fund Colombia
Implementing Agency:	World Wildlife Fund Colombia

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	36.02
Total Financing	36.02
of which IBRD/IDA	0.00
Financing Gap	0.00

DETAILS

Non-World Bank Group Financing

Counterpart Funding	10.09
Borrower/Recipient	2.03
National Government	0.20
Local Sources of Borrowing Country	0.51
Non-Government Organization (NGO) of Borrowing Country	7.35
Trust Funds	25.94

Global Environment Facility (GEF)	5.94
BioCFplus Initiative for Sustainable Forest Landscapes	20.00

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2020	2021	2022	2023	2024
Annual	0.83	0.90	1.35	1.34	1.52
Cumulative	0.83	1.73	3.08	4.41	5.94

INSTITUTIONAL DATA

Practice Area (Lead)

Environment & Natural Resources

Contributing Practice Areas

Gender Tag

Does the project plan to undertake any of the following?	
a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial

6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Substantial
9. Other	
10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Schedule 2, Section I.C.1. To facilitate the carrying out of the Project, the Recipient shall sign with MINAMBIENTE, PNN and Corporinoquia, no later than two months after the Effective Date and thereafter maintain the Implementation Agreement during the implementation of the Project, on terms and conditions acceptable to the Bank.

Conditions

Article V, Section 5.01. This Agreement shall not become effective until evidence satisfactory to the Bank has been furnished that the execution and delivery of this Agreement on behalf of the Recipient have been duly authorized or ratified by all necessary administrative or corporate action.

I. STRATEGIC CONTEXT

A. Country Context

1. **Over the past decade, Colombia has maintained historically high growth rates,** supported by sound macroeconomic policies, trade integration and favorable external conditions. Significant structural reforms since the early 1990s, combined with important trade agreements, have led to a modernization of the economy. Prudent macroeconomic management has also helped to improve resilience. As a result, the Colombian economy maintained an average Gross Domestic Product (GDP) growth of 4.8 percent in the past decade, more than 1 percentage point above the average of the three previous decades (3.5 percent).[1]

2. **Colombia's progress in reducing poverty has been remarkable.** Over the 2002-2017 period, extreme poverty more than halved from 17.7 percent to 7.4 percent, while moderate poverty fell from 49.7 percent to 26.9 percent. This reduction was driven by rural areas where poverty incidence fell by 2.6 percentage points from 38.6 percent to 36.0 percent between 2016 and 2017. Colombia has achieved a significant decrease in its official Multidimensional Poverty Index (MPI)—down from 49 percent in 2003 to 17.8 percent in 2016.

3. **Colombia's natural capital is abundant.** The country is characterized by a diverse geography, a variety of landscapes and ecosystems, and considerable renewable and non-renewable resources. Hosting close to 10 percent of the planet's biodiversity, Colombia ranks second among the countries containing the greatest biodiversity in the world[2], with almost 62,829 species registered.[3] It ranks seventh in the world in terms of area covered by tropical forests[4], and mineral and hydrocarbons reserves, and abundant water resources contribute to the country's wealth[5]. A sustainable growth model that ensures the protection of the country's natural capital base, prevents externalities associated with the costs of its degradation, contributes to competitiveness, and prevents the impacts of natural disasters and climate change has been gradually embedded into Colombia's policy process.

4. **To address environmental costs and the depletion of natural capital, the Government of Colombia (GoC) is consolidating efforts to position the country's natural wealth as a source of sustainable development, economic growth and social inclusion.** As stated above, Colombia is generously endowed with forests, water, biodiversity and mineral resources. The exploitation of its natural capital (mainly oil and non-renewables mining, as well as lands, savannas and forests) has been and continues to be a crucial part of the country's economic development. Sustainable management of its natural capital and the reversion of the current depletion rate have become a key

[1] The World Bank Group (2015): Colombia Systematic Country Diagnostic (SCD); http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/07/01/090224b082fc8bd3/1_0/Rendered/PDF/Colombia000Systematic0country0diagnostic.pdf, p.86

[2] Convention on biological diversity

[3] *http://www.gbif.org/analytics/country/CO/about*; http://reporte.humboldt.org.co/biodiversidad/2017/index.html : It ranks first in the world in terms of number of bird species (1,909 species), and orchid species (4,270 species), second in butterfly species (3,274 species), amphibian species (814 species), freshwater fish species (1,494 species) and plant species (28,000 species), and third in terms of palm species (289 species) and reptiles (537 species).

4 Ministerio de Ambiente y Desarrollo Sostenible - MADS. 2018. Bosques territorios de vida. Estrategia Integral de Control a la Deforestación y Gestión de Bosques.

5 On average, between 1995 and 2014, 15 percent of the country's total wealth is based on its natural capital. This is similar to the contribution of natural capital to the region's wealth (17 percent) but considerably higher than for OECD countries (3 percent).

priority, expressed in the National Council for Economic and Social Policy (CONPES) 3934 of 2018, which sets out a long-term green growth vision.

5. Colombia is a signatory to the Convention on Biological Diversity (CBD), approved by Law 165 of 1994, and is committed to permanently reviewing its public policies and adopting measures for the protection of its biological diversity. In response to this commitment, the Ministry of Environment and Sustainable Development (MADS) in a participatory process, formulated in 2012 the National Policy for the Integral Management of Biodiversity and its Ecosystem Services (PNGIBSE). The PNGIBSE seeks to maintain and improve the resilience of socio-ecological systems, at the national, regional, local and cross-border levels, considering change scenarios and through the joint, coordinated and concerted action of the State, the productive sector (agricultural producers and the private sector) and civil society.

6. The Government of Colombia has taken on a proactive role in climate change and biodiversity policies. The GoC at the UNFCCC Conference of the Parties CoP-21 in Paris committed to zero net deforestation in the Amazon by 2020, to end the loss of natural forests by 2030, and to taking 10 concrete adaptation and mitigation measures including, by 2020, increasing land and marine protected areas (PA) to 17 percent and 10 percent, respectively, to integrate the under-represented and the most threatened ecosystems. To support this, a Memorandum of Understanding (MoU) was signed amongst MADS, National Natural Parks of Colombia (PNN), Wildlife Conservation Society (WCS), World Wildlife Fund (WWF), among other partners for the creation of Heritage Colombia (HECO) to support the establishment of new and stable financial mechanisms[6] for new and existing PAs.

7. Colombia has recently joined the Organization for Economic Cooperation and Development (OECD). As part of the OECD accession process,[7] 45 recommendations were made regarding the need for institutional, political and legal reforms and adjustments regarding environment and biodiversity. These adjustments have been considered under the National Biodiversity Strategy and Action Plan (PAB) and the Comprehensive Strategy for Control of Deforestation and Forest Management (EICDGB). In addition, Colombia adheres to the Bonn Challenge[8] and the OECD's Green Growth Statement, committing to restoration of one million hectares of degraded land by 2030.

8. Colombia faces great challenges in terms of biodiversity conservation in the post-conflict context. The Peace Agreement reached by the GoC and the then Revolutionary Armed Forces of Colombia (FARC), approved by Congress, emphasizes the importance of environmental governance, given that environmentally vulnerable areas are found in many of the areas where the armed conflict has historically existed. Among the fundamental aspects of the Agreement, point 1 "Comprehensive Rural Reform" (RRI) seeks to lay down the foundation for the transformation of rural Colombia through creating the conditions for productive integration and competitiveness in rural areas while ensuring a stabilization of the agricultural frontier[9]. Given that 58 percent of the municipalities where deforestation

[6] Under a Project Finance for Permanence (PFP) scheme: an innovative approach for the permanent and complete financing of conservation areas (e.g. the Amazon Region Protected Areas program (ARPA)).
[7] https://www.oecd.org/environment/country-reviews/Colombia%20Highlights%20spanish%20web.pdf
[8] Global effort to restore 150 million hectares of degraded and deforested forests by 2020, and 350 million hectares by 2030.
[9] Agricultural frontier is defined as "the limit of the rural land that separates the areas where agricultural activities are allowed, of the protected areas, those of special ecological importance, and the other areas in which agricultural activities are excluded by law or regulations", (Unidad Rural de Planificación Agropecuaria UPRA, 2018).

is highest are also affected by the armed conflict, the activities promoted under the RRI are fully aligned with activities promoting forest and land-use smart investments.

9. **Through Resolution 0261 of 2018, the Ministry of Agriculture and Rural Development (MADR), in coordination with the Ministry of Environment and Sustainable Development (MADS), and with productive sectors, defined Colombia's National Agricultural Frontier**. This frontier definition prohibits any agricultural activity or development in areas that were forests in 2010, and mandates restoration of areas that have been deforested since 2010. It is an indicative, national policy level tool at relatively large scale (1:100,000), which needs to be refined at higher resolution for regional decision-making and to guide investments for rural development. Also, critical ecosystems such as wetlands and highly biodiverse savannah lands are not reflected in this agricultural frontier definition. Therefore, currently, the entire Orinoquia region is defined as being part of the agricultural frontier (i.e. lands are available for productive conversion).

10. **Colombian legislation (Decree 3600 of 2007) mandates that municipalities prepare and include the Ecological Main Structure (EMS)** defined as the network of spaces and ecological corridors that sustain and connect biodiversity and ecological processes throughout the territory. The EMS is constituted by natural (primary forests, savannas, deserts, rivers, lakes, *paramos*) and seminatural habitats (secondary forests, plantations, etc.) that are interconnected physically and functionally, and through species of flora and fauna. The main objectives for its inclusion into the Land Management Plans (POTs) is to sustain ecological processes, to guarantee landscape connectivity[10], and to balance environmental services offer throughout the territory in correspondence with population and demand.

B. Sectoral and Institutional Context

11. **The Orinoquia region has a large diversity of ecosystems,** including: the area of the Andean Piedmont, the extensive tropical dry savannas, the seasonal flooded savannas and the transition areas with the Amazon biome. The Orinoco Region hosts 250 species of mammals, including 26 threatened species. It is also home to 1,300 species of birds, 1,000 types of fish, as well as 17,420 species of flowering plants[11]; 35 percent of the Orinoquia region species are endemic to the region. The region is additionally characterized by its wealth of water resources and wetlands that represent 34 percent of the country's total. It is also part of the Orinoco macro basin, considered the third largest river system in the world[12]. The region exhibits high vulnerability to climate change: the average temperature increases for the coming decades (2050) is expected to be between 1.5 - 2.3 ° C, with a +/- 5 percent reduction in precipitation[13].

12. **For the proposed operation, the Orinoquia region is defined as comprising four departments: Arauca, Casanare, Meta and Vichada.** These departments cover an area of 25.3 million hectares, are comprised of 59 municipalities and inhabited by 1.37 million people (3.2 percent of the country's total), 32 percent of which are in rural areas, including 12 ethnic groups[14]. These departments generate 7 percent of the national GDP. The Region

[10] A principal ecological concept defined (by Ament 2014) as "the degree to which regional landscapes, encompassing a variety of natural, semi-natural, and developed land cover types, are conducive to wildlife movement and to sustain ecological processes."
[11] Lasso, C., J.S. Usma, F. Trujillo & A. Rial (Eds.). 2010. Biodiversity of the Orinoco Basin: scientific bases for the identification of priority areas for the conservation and sustainable use of biodiversity. Humboldt Institute, WWF Colombia, Omacha Foundation, La Salle Foundation and Institute of Orinoquia Studies (National University of Colombia). Bogota D.C., Colombia 609p.
[12] WWF-Colombia 2017. Colombia Viva: a megadiverse country for the future. Report 2017. Cali: WWF-Colombia.
13 http://modelos.ideam.gov.co/media/dynamic/escenarios/escenarios-de-cambio-climatico-2015.pdf
[14] *https://colombiapatrimoniocultural.wordpress.com/region-orinoquia/*

holds 7.2 percent of the agricultural lands of Colombia. 37.1 percent of the region has suitable soils for agricultural production, including agriculture, forestry or agroforestry, and livestock activities[15].

13. The Orinoquia Region is affected by severe levels of loss of ecosystem services associated with water resources. Hydrological analysis on water yield suggest that the Orinoco Region is a watershed where greatest amount of water runs off, but little is stored, having only certain specific zones where the characteristics of the soils and aquatic ecosystems allow fulfilling the function of water retention[16]. Risk analysis on ecosystem services loss show that highest risks related to overuse and poor management of soils by productive activities, are in soils with limited capacity of water retention.

14. Between 2008 and 2014, 176,385 hectares of land in the region have been transformed into crops (a 47 percent increase). The changes are related to the conversion of natural ecosystems, especially savannas and forests, to give way to crops and pastures, mainly in the department of Meta in the piedmont and mountainous landscapes. During the 1990-2015 period, the region lost more than 1 million hectares of forests equal to 20 percent of national deforestation during this period. There have also been changes in the land use related to commercial forest plantations and agricultural products (such as corn, soybeans, forage grasses and rice), replacing the natural savannas of Meta and Vichada High Plains (*Altillanura*), while other plantations such as oil palm and rice over recent years are affecting the floodplains of the department of Casanare, one of the largest wetland systems in the country.

15. The main indirect causes of land conversion in the Orinoquia Region include weak sectoral and land use planning, and the underrepresentation of highly biodiverse ecosystems in the National and Regional Systems of Protected Areas (SINAP- SIRAP). This is aggravated by low presence of national authorities, and a road infrastructure disconnected from the country's primary network. Additional pressures for terrestrial ecosystems could arise from demographic pressures related to land restitution programs, programs for land allocation to ex-combatants, and plans and objectives for increased agricultural development in the region (e.g. Agricultural Frontier, Zones of Interest for Rural, Economic and Social Development (ZIDRES), the Orinoquia Master Plan, Colombia Siembra, etc.). Therefore, ecosystems such as the savannahs of the *Altillanura*, floodplain savannas and wetlands that are currently not reflected in the national system of protected areas, are highly threatened.

16. In addition to opportunities for sustainable agricultural development, the region has significant opportunities to unlock a nature-based economy building on its rich biodiversity and ecosystem services. Despite Colombia being a country rich in biodiversity, there is a need to promote development of products and services based on the sustainable use of biodiversity and residual biomass[17] for the diversification of the national economy, the creation of new jobs, and the implementation of Colombia's green growth policy in the territories[18]. This is due to limited research and development in biotechnology, associated limited capacity in developing new, biodiversity-based products, and institutional difficulties in positioning and opening new biodiversity markets.

17. Biodiversity conservation strategies in the Orinoquia Region are affected by the ongoing conflict and need to be aligned with the priorities of consolidation of peace. The FARC had an important presence in all departments

[15] *https://noticias.igac.gov.co/es/contenido/el-159-de-la-orinoquia-tiene-suelos-aptos-para-soportar-la-presencia-del-ganado*
[16] *http://www.minambiente.gov.co/images/GestionIntegraldelRecursoHidrico/pdf/macrocuencas/Macrocuenca_Orinoco/SINTESIS_-_REJ__IAvH_PEMO_FASES_III_y_IV_FINAL.pdf*
[17] Considering the NPD's definition of Bio economy as "A strategy of economic growth based on bio economy is one in which biodiversity and residual biomass are managed efficiently and sustainably to generate new products, processes and value-added services, based on knowledge and innovation, that allow leveraging growth, development and progress in the regions of Colombia: https://www.dnp.gov.co/Crecimiento-Verde/Documents/ejes-tematicos/Bioeconomia/informe% 201/1-REPORT% 20BIOECONOMY% 20FASE% 201% 20FINAL% 2024012018.pdf
[18] idem

of the Orinoquia Region and controlled the territory and its resources for decades. Despite the FARC's transition from a military movement to a political party, multiple armed groups, including the National Liberation Army (ELN), and other criminal groups still vie for control of the territory and its resources. This makes imperative the alignment of the project interventions with strategies for peace consolidation.

C. Relevance to Higher Level Objectives

18. The proposed operation is in line with the World Bank Group's Country Partnership Framework (CPF) 2016-2021, Pillar 1, objective 2 of "Enhanced capacity for natural resource management in target regions". This operation is also aligned with CPF's cross-cutting theme related to "Constructing the Peace", promoting an approach that responds to the dual goal of peacebuilding and environmental sustainability. The project is also aligned with the World Bank Group (WBG) Forest Action Plan FY16-20 (FAP), and its two focus areas: (i) sustainable forestry, and (ii) forest smart interventions. The Project will monitor selected FAP's Core Indicators supported by identified Predictive Proxy Indicators (VI. Results Framework and Monitoring) with the potential not just to measure the impacts of forestry programs, but also on other important development outcomes, such as biodiversity conservation, climate change mitigation and adaptation, and good governance. The project complements the BioCarbon Fund Sustainable Low-Carbon Development in Orinoquia Region Project (P160680), that delivers results on climate change mitigation in the land use sector and aligns with the WBG Climate Change Action Plan (2016).

19. The proposed project is aligned with the objectives of the GEF 6 Biodiversity (BD) Programs 1, 2, 9 and 10. These objectives are focused on improving sustainability of PA systems (Programs 1 and 2) and on mainstreaming biodiversity conservation and sustainable use into production landscapes and production sectors (Programs 9 and 10). The project's planned interventions have been designed to target each of these objectives, and to prevent biodiversity loss and improve and strengthen the conservation and resilience of the territory, through formulation of territorial and sectoral instruments incorporating biodiversity and ecosystem services considerations, (Component 1), strengthening the effective protection and management of PA and areas of importance for biodiversity, increasing the area of productive landscapes that integrate biodiversity considerations and formulating new and strengthening existing financial and non-financial mechanism (Component 2). This will be complemented through institutional strengthening, and capacity building programs for key stakeholders (Coporinoquia, municipalities, governorships, productive sectors and local communities).

20. The operation is also aligned with Colombia's Integrated Strategy to Control Deforestation and Manage Forests (EICDGB, in Spanish) contributing to the Bonn Challenge, and the LAC 20 x 20 restoration initiative for the restoration of 20 million hectares of degraded land in Latin America by 2020. Likewise, it is complementary to other regional initiatives such as Colombia Tropical Forest Alliance TFA 2020, a national alliance for agricultural, livestock and forestry production with zero deforestation, and the Natural Wealth Program financed by the United States Agency for International Development (USAID) supporting the GoC in the fulfillment of conservation goals and of sustainable comprehensive rural development.

21. The operation contributes to the achievement of the sustainable development goals for the Orinoquia Region, through the implementation of the Biodiversity Strategy and Action Plan (PAB)[19] in response to the commitments agreed at the Convention on Biological Diversity (CBD), the CBD Strategic Plan 2011-2020, the Aichi

[19] http://www.humboldt.org.co/es/investigacion/proyectos/item/365-estrategia-y-plan-de-accion-de-biodiversidad-epanb

goals in particular goal N. 11; the Regional Climate Change Plan for Orinoquia (PRICCO) launched in May, 2017, and CONPES 3797, “Orinoquia Integrated Development” led by DNP.

22. The operation is aligned with the National Development Plan (NDP) 2018-2022 that prioritizes reducing deforestation based on territorial control, and the revitalization of local economies based on bio- economy, forest economy and tourism. The intervention in environmentally strategic areas will be comprehensive and will start with the harmonization of instruments, inter-sector work and the communities that live there. These objectives are reflected in the bases of the NDP 2018-2022, in chapter 4, "Pact for Sustainability”[20].

23. The operation contributes to the goals of the Colombia Heritage Program (HECO), that contributes to achieving the international goals that Colombia has set out to conserve and increase its protected areas and guarantee its integration in landscapes and sectors, through the design and subsequent implementation of a long-term financing model for the National System of Protected Areas (SINAP). This financing model aims at enhancing sustainable businesses profitability, access to credits, investments and markets for tourism, agriculture, fisheries and forest products, and promote private sector investment in local business in and around protected areas.

24. The proposed operation is aligned with the objectives of the green growth strategy described in CONPES 3934 of 2018 and the CONPES 3870 of 2016 on Land Management Plans (POT). The first, focuses on maintaining and increasing the rate of economic growth to reduce poverty and inequality, and the promotion of new sources of growth based on natural capital[21]. Likewise, the operation contributes to the implementation of CONPES 3870[22], through which the GoC provides technical and financial assistance for municipalities to update or formulate their land use plans, which is linked to the Colombia Multipurpose Cadastre Project, financed by the IBRD (US$100 million, P162594, under implementation) and the Inter-American Development Bank (IDB, US$50 million).

25. The project is part of a broader program for the region, the Orinoquia Sustainable Integrated Landscapes Program (OSIL) (Annex 4). The OSIL consists of the BioCarbon Fund Initiative for Sustainable Forest Landscapes (BioCF- ISFL) funded “Sustainable Low-Carbon Development in Orinoquia Region Project” (ISFL Orinoquia project) and this proposed GEF funded “Orinoquia Integrated Sustainable Landscape Project” to guarantee a comprehensive vision for the planning and management of the territory and its different ecosystems. While the BioCF-ISFL project focuses on Greenhouse Gas (GHG) emissions-reducing interventions in productive development with a focus on private sector engagement, the complementary GEF project will ensure the generation of information on the region’s biodiversity and ecosystem services to expand and strengthen management of regional and national protected areas. This proposed programmatic approach will leverage the GEF program to amplify impact beyond the proposed project intervention areas since information generated by this project will be adopted by the larger program. The combined OSIL program contributes to meeting objectives of the Paris Agreement as well as the CBD in a complementary manner, through a harmonized regional landscape approach focused on emissions reductions, landscape connectivity, biodiversity conservation in protected areas and productive landscapes, thus ensuring the resilience of

[20] https://colaboracion.dnp.gov.co/CDT/Prensa/PND/BasesPlanNacionaldeDesarrollo2018-2022-ResumenEjecutivo.pdf
[21] https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3934.pdf
[22] https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3870.pdf

Orinoquia landscapes. ISFL implementation will run through December 2022 and the proposed GEF project is expected to complete implementation in June 2023.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

To promote representation of Orinoquia wetlands and savanna lands in land-use planning instruments and landscape connectivity in selected project areas.

PDO Level Indicators

- Key Orinoquia ecosystems defined in land use planning (Yes/No)
- Existing Protected Areas and Key Biodiversity Areas under improved management (ha)
- Area in productive landscapes under 'connectivity agreements' (ha)

B. Project Components

26. The project will have interventions in targeted landscapes based on the "mosaic conservation" approach promoted in Colombia[23], and with a portfolio of differentiated interventions tailored to the conditions of each project area: (i) Bita Ramsar Site – Tuparro Biosphere Reserve Mosaic (Bita-Tuparro Mosaic - BTM): located in the department of Vichada, this area is characterized by a variety of ecosystems that range from complex sets of freshwater systems and wetlands, tropical savannas of the *Altillanura* (rocky and sandy), riparian forests, to Guiana highlands formations, known as *Tepuyes*. This area includes the Bita River Basin, recently declared as a Wetland of International Importance under the Ramsar Convention. It also includes the Tuparro Biosphere Reserve and the Tuparro National Natural Park, which stand out for their biological and cultural diversity. The interventions in this landscape will focus on the strengthening of its conservation practices; (ii) Piedemonte Cocuy - Cinaruco Mosaic (Cocuy-Cinaruco Mosaic -CCM): located in the departments of Arauca and Casanare, is considered an important ecological corridor between the highlands of the Andes and the flooded savannas of the Orinoquia. The area hosts the National Integrated Management District (DNMI) of Cinaruco, declared as a PA in 2018 with the objective of protecting the regional biodiversity, the traditional productive practices and the livelihoods of its indigenous communities and rural producers, and the "Savannas and Wetlands of Arauca", soon to be declared as a national PA. It also includes ecosystems and habitats associated with the piedmont, flooded savannas and riparian forests, ecosystems exposed to highly seasonal (hydrological) dynamics. These ecosystems have been exposed to human interventions for the past decades, such as oil exploration and exploitation, agro-industrial development, wetlands' drainage and diversion. For this reason, interventions in CCM will focus on ecological restoration, supporting transformation of current productive systems into sustainable systems, including cattle ranching and rice crops, and on improving

[23] A conservation mosaic may be defined as "a network of protected areas and complementary landscapes that include combinations of national parks (i.e. the core conservation areas), production landscapes and collectively-owned ethnic territories (i.e. the surrounding areas)", Caballero, Paula; Battaglini, Emilia; Lagnaoui, Abdelaziz (World Bank, 2015). The main objective of this approach is to ensure that conservation efforts in protected areas consider the social and economic needs of the surrounding areas and communities and the resulting pressure on land usage.

governance in existing protected areas and those to be declared. These interventions are also expected to have a positive impact on the important water regulation functions the region provides.

Component 1. Effective Integration of Environmental Considerations at Appropriate Scales in Territorial and Sector Planning (GEF US$1,641,856, co-financing US$7,449,955)

27. The lack of up-to-date and accurate information on biodiversity and ecosystem services leads to territorial and municipal land-use planning instruments that do not sufficiently reflect environmental criteria. A need has been identified to improve ecological representation in land use planning, i.e. to ensure the inclusion of variables such as land cover, key ecosystems, protected areas and forest reserves in land-use plans. The first step is to support the preparation of municipalities' EMS so they effectively integrate up to date and accurate biodiversity and ecosystem services information and to update the agricultural frontier definition for the Orinoquia, so it can be adequately reflected in legally binding municipal land-use plans (POT), watershed management plans (POMCA) and "connectivity agreements" (comp. 2) with the productive sector. Component 1 will focus on generation of accurate biodiversity and ecosystem services information at the landscape level (component 1.1) and will finance activities required to guarantee the inclusion of this information into territorial and sector planning processes of the agricultural sectors (comp. 1.2.).

1.1. Subcomponent 1.1 Generation and Management of Information on Biodiversity and Ecosystem Services for Territorial and Sector Planning (GEF US$1,243,485, co-financing US$5,449,000)

28. Regional environmental authorities and territorial entities need to manage information with the appropriate specifications on sustainability, biodiversity, and ecosystem services, for its integration into territorial planning and integrated landscape management, at regional and local level. This subcomponent, therefore, seeks to strengthen the processes of generation, management and access to information on biodiversity and ecosystem services, in consultation with relevant stakeholders (indigenous peoples, authorities, women, and others).

Subcomponent 1.2 Integration of Biodiversity and Ecosystem Services for Territorial and Sector Planning (GEF US$398,371, co-financing US$2,000,955)

29. Under this sub-component, the project will support the development of important land-use planning instruments and ensure they are informed by data generated in subcomponent 1.1. To this end, the project will finance the technical and normative process for the definition of the EMS in four municipalities as well as the agricultural frontier definition in the project area. The project will also support the inclusion of the EMS and agricultural frontier definition into the POT of selected municipalities.

Component 2. Landscape Management for Connectivity and Resilience in Priority Biodiversity and Ecosystem Services Areas (GEF US$4,024,217, co-financing US$ 22,636,717)

30. This component is aimed at contributing to the ecological functionality of priority landscapes through their integrated management, enhancing the resilience and landscape connectivity of critical areas for biodiversity and ecosystem service provision, with emphasis on the maintenance of water regulation, and the restoration of degraded and fragmented landscapes. This component will therefore, i) strengthen management of protected areas, including the declaration of new ones (Subcomponent 2.1), ii) promote sustainable economic activities in production-

conservation landscapes (Subcomponent 2.2), and iii) develop financial instruments that incentivize these economic activities (Subcomponent 2.3).

2.1. Subcomponent 2.1 Strengthening Management of Critically Important Areas and the Protected Areas System at National, Regional and Local Level (GEF US$1,949,013, co-financing US$8,031,251)

31. Strengthening the national and regional system of protected areas (SINAP, SIRAP), including support to the process of declaring a new national protected area, "Savannahs and Wetlands of Arauca". This area stands out for its biodiversity and cultural characteristics, hosting one of the largest populations of the Orinoquia caiman, the relicts of a tropical dry forest, and savannah ecosystems that are underrepresented in the national protected area system. The project will contribute to the "preparation" phase of the protected area declaration process[24], by supporting the stakeholder engagement, social dialogue, consultations and participatory processes, with specific attention to indigenous peoples and authorities, and women participation. Further, the project will support complementary conservation initiatives, including formulation and implementation of the management plans of key protected areas in the region, funding measures that improve the performance of PNN park rangers and strengthening the Natural Reserves of the Civil Society (RNSC[25]). Finally, under this subcomponent, the project will support environmental governance, this includes, inter alia, support to consolidation of the Regional Centers for Environmental Dialogue (CRDA)[26] and to the logistics and operation of the Bita River Basin Water Management Council.

Subcomponent 2.2 Sustainable Management for Resilient and Connected Productive Landscapes (GEF US$ 1,572,100, co-financing US$7,398,466)

32. Seasonal ecosystems such as the savannahs of Arauca and Casanare, and the *altillanura* savannahs of Vichada, are generally perceived as "vacant" for any type of development or productive intervention, with pressure increasing to transform these ecosystems. This sub-component will therefore support management of biodiversity at the level of producers and agri-business companies through the adoption of an Integrated Landscape Management (ILM) approaches in productive landscapes (i.e. establishment of corridors in private lands). Interventions will include the development of sectoral production-conservation plans for connectivity and resilience ("connectivity agreements")[27], jointly with and for adoption by producers, producer associations and companies in productive landscapes.

33. Additional interventions will focus on capacity-strengthening activities for local stakeholders, with specific attention to women participation, for the formulation and adoption of: (i) ILM guides for production-conservation approaches validated in the productive rice, forestry, cacao and livestock landscapes, in the prioritized landscapes;

[24] As stated in the Resolution 1125 of 2015, the declaration of a new protected area in Colombia takes place in three phases: i) The Assessment: initial valuation of the initiative; consolidation of information on social, economic, cultural, and environmental aspects; ii) The Preparation: Identification and description of stakeholders; consultation processes with active participation of interested/affected/benefitted stakeholders; assessment of titling and land tenue; iii) The Declaration: final documentation, including the Administrative Act of the declaration.

[25] The Natural Reserves of the Civil Society-RNSC are one of the conservation strategies of the National System of Protected Areas of Colombia, considered vital in involving private actors in regional conservation processes. The Orinoquia region has 99 protected areas registered before the RUNAP, of those 67 percent are RNSC. The low representativity of the ecosystems of the region in the National System of Protected Areas under the categories of National and Regional Natural Parks, and National Integrated Management Districts (DNMI), have made the RNSC key elements in the preservation, restoration and the sustainable use of biodiversity.

[26] http://www.minambiente.gov.co/index.php/noticias/4214-arrancan-centros-para-el-dialogo-ambiental-en-colombia

[27] Connectivity agreements are defined as a set of guideless and plans to ensure the connectivity of critical areas for biodiversity and ecosystem service provision, with emphasis on the maintenance of water regulation, and the restoration of degraded and fragmented landscapes.

(ii) participatory monitoring systems for sustainability and ecosystem services in productive landscapes, with protocols and accountabilities for their implementation at landscape and farm scale.

Subcomponent 2.3: Strengthening Financial and Non-Financial Mechanisms for the Sustainable Management of Important Areas for Biodiversity and Ecosystem Services (GEF US$503,104, co-financing US$ 7,207,000)

34. The lack of financial planning tools and of capacity to apply for financial support (credits, royalty funding programs, incentives) for conservation are one of the technical barriers for the financial sustainability of protected areas and of critical importance for the conservation of biodiversity and ecosystem services in the Orinoquia region. The project will promote the strengthening of capacities to leverage resources for territorial entities, environmental authorities, civil society and producer associations for both protected area management and management of sustainable productive systems. The subcomponent also seeks to strengthen the HECO financing strategy through the following interventions:

35. Strengthen territorial authorities' (Corporinoquia, regional Governments, PNN) and local producer access to economic instruments for viable conservation/production opportunities, through formulation of productive projects to be submitted to the General Royalties System (*Sistema General de Regalias*) and other funding sources for sustainable productive projects. The capacity building will be carried out in partnership with regional academic institutions, and will include workshops, diploma courses, virtual courses and customized technical assistance, among others. Gender equality and sensitivities will be considered when designing these training plans.

36. Support sustainable productive transformation of key value chains, through the adjustment of a financial instrument for sustainable productive transformation of the floodable savannahs livestock ranching systems in the Cocuy-Cinaruco Mosaic, based on the experience of FINAGRO's Financing Instrument for Sustainable Productive Transformation (ITPS[28]) in areas of high ecosystem value, and the strengthening of the bio-economy potential in the Orinoquia region.

Component 3. Project Management, Implementation, Coordination, Communication, Monitoring and Evaluation (GEF US$270,000)

37. This component will finance training, travels, consultants and operational costs to strengthen the institutional and implementation arrangements for the project day-to-day operation. WWF Colombia will be the executing agency, MADS will provide overall technical guidance. The Project Implementation Unit (PIU) will be housed in both WWF (overall coordination functions, administrative, fiduciary functions) and MADS (technical functions). The project will support: i) Operation of the Project Implementation Unit (PIU) that will include technical experts based in the region; ii) Project supervision, monitoring and evaluation; iii) Training and knowledge exchange with other regions and countries; iv) Implementation and supervision of the grievance redress mechanism; v) External and internal communication strategy to support the dissemination of project's results and lessons learned, as well as support for communication plans for local governance: communication tools, publications and information exchange for the project; vi) Fiduciary due diligence, including safeguards, procurement and financial management, as well as project auditing. The project steering committee will include implementing agencies of the "Sustainable Low-Carbon

[28] ITPS is a financial instrument focused on promoting the reconversion of extensive cattle ranching systems in areas of inadequate land-use. It consists of three components, i) the credit/ loan component, ii) the incentives component to ensure the successful implementation of the ITPS in areas of high ecosystem value, where it is required that producers have access to credit with special conditions and where intermediaries need to be able to reduce their risk level, iii) a group of complementary services to accompany the sustainable transformation (e.g. technical assistance), to ensure productivity increase of sustainable systems and to increase ability to service the credit while improving beneficiary living conditions.

Development in Orinoquia Region Project" to ensure the overall coordination of the OSIL program, as described in paragraph 25.

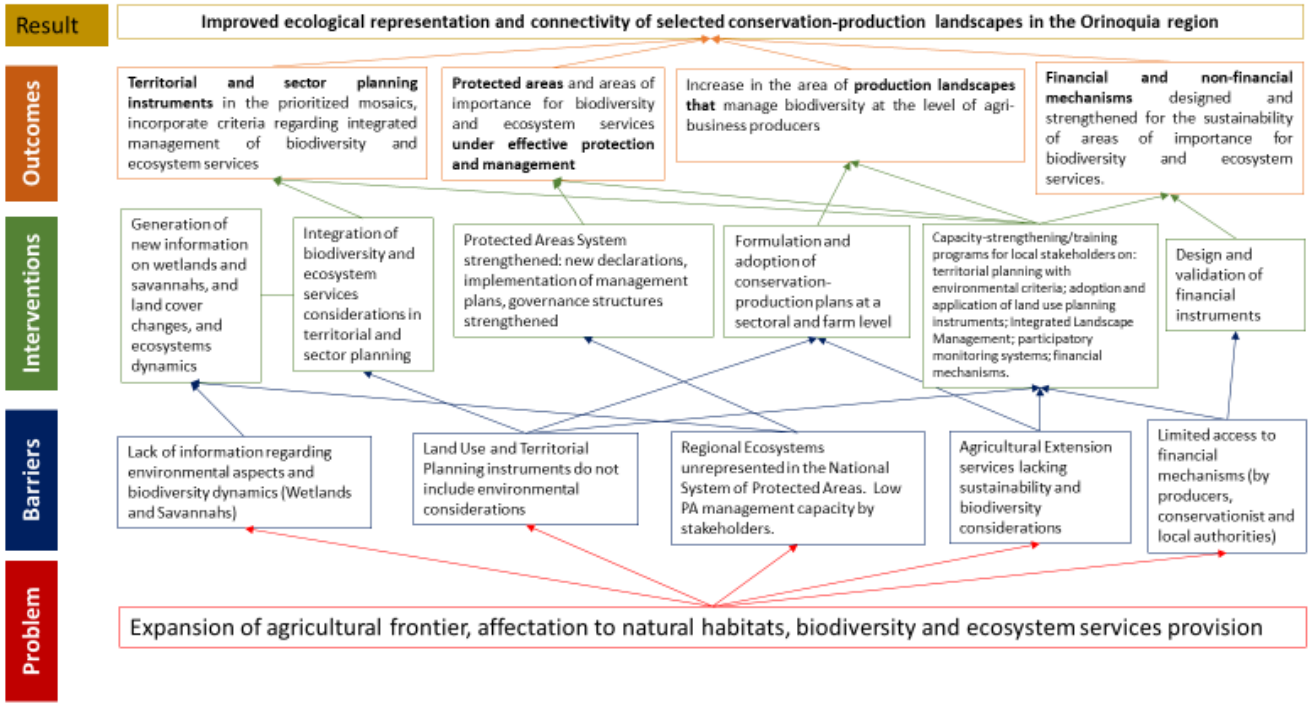
C. Project Beneficiaries

38. The inhabitants in the selected landscapes will benefit overall from the project's outcomes in terms of securing ecosystem services and from the regional Government's improved capacities and policies to better manage the region's natural resources. Project beneficiaries will include Government institutions in charge of land-use planning who will benefit from access to key information to support regional planning. They will also benefit from activities aimed at improving capacities to mainstream environmental and biodiversity considerations into formulation of local- and regional-level policy, and land-use planning. Regional Autonomous Corporations (*Corporaciones Autonómas Regionales*, CARs), as well as the regional governments, and local municipalities will benefit from capacity building to develop land-use planning, policy instruments that contribute to reducing biodiversity loss and unsustainable land-use change, and instruments to promote adoption of sustainable and low-carbon landscape management. Local stakeholders such as indigenous communities, farmers, producers' associations, women's groups, and the private sector will benefit through participation in land-use planning and capacity-building activities for biodiversity friendly practices/approaches. In addition, the project will develop technical assistance packages for producers, producer associations, and the private sector to implement integrated and biodiversity friendly production approaches.

39. Women will be key beneficiaries of project activities (within Components 1 and 2) that will aim to address existent gender inequalities in terms of access to capacity-building activities, land-use planning, extension services, conservation strategies and access to financing. Despite the important role of women in agricultural activities, women in the Orinoquia region have less access than men to training, credit, and land.[29] The project will address specific gender gaps, including those related to access to training and assistance, participation in land-use planning processes, formulation of conservation strategies and access to financing, by designing training modules on agricultural practices, environmental information and financing specifically geared to women, and by promoting women's' participation in land use planning processes. See Results Framework, indicators 1.2.4.a, 2.1.3.a, and 2.3.4.

[29] FAO 2011. "The State of Food and Agriculture: 2010 – 2011. Women in Agriculture. Closing the Gender Gap for Development." *http://www.fao.org/docrep/013/i2050s/i2050s.pdf*

D. Results Chain



E. Rationale for Bank Involvement and Role of Partners

40. The World Bank has considerable experience working with the GoC in the management, conservation and development of natural resources. In Colombia and elsewhere, the Bank been supporting several projects and policy processes related to agriculture, livestock, protected area management, forest economy, territorial development, green and sustainable growth and deforestation control. These strongly align with the World Bank's commitment to mitigating climate change as established in the WBG Climate Change Action Plan (2016), as well as the objectives to promote forests and forest smart investments outlined in the WBG Forest Action Plan (2016). In this project, the World Bank will work with four main partners: the MADS, in charge of formulating, implementing, and orienting environmental policy; PNN as the entity responsible for managing the National Protected Area System (SINAP); CORPORINOQUIA as the regional environmental authority covering the departments of Arauca, Casanare and Vichada, and WWF as the executing entity with technical expertise in protected area declaration and conservation financing, and as the fiduciary entity.

F. Lessons Learned and Reflected in the Project Design

41. The GoC acknowledges the importance of dialogue for recognizing, approaching and preventing socio-environmental conflicts, as provided in Rio Principle 10 that seeks to ensure that everyone has access to information, participates in decision-making and has access to justice in environmental matters. Additionally, the OECD Environmental Performance Assessment recommended, among other things: (i) establishing coordination mechanisms for regional dialogue and the integration of policies between the regional environmental authorities (Regional Autonomous Corporations - CAR) and the departments; and (ii) to improve the quality and relevance of

environmental data and information systems. Based on these recommendations, MADS through Resolution 2035 of 2018 created the Regional Centers for Environmental Dialogue (CRDA) to improve governance and coordination between the State, productive sectors and the communities. Under the project, the CRDA will be used for dissemination of project outputs, related to the management of information and communication for governance, to promote public understanding, and awareness for the value of biodiversity and its integration into socio-economic development[30].

42. **The project also builds on lessons learned under the ISFL Orinoquia project** on capacity constraints and legal limitations for Colombian line ministries to proceed via direct implementation and incorporation of grant funds into the national budget. The integration of a fiduciary agency affiliated with the MADR via lengthy project restructuring was necessary in the case of the ISFL Orinoquia project. Based on this experience, WWF was included as the executing agency, with both technical and fiduciary responsibilities. Finally, the project is built on the importance of market access and access to finance for green and agro-ecological products in order to guarantee sustainability of project interventions and the production-conservation vision promoted by the GoC.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

43. The Project will be implemented by WWF-Colombia as executing agency under the supervision of the Ministry of Environment and Sustainable Development.

44. An Inter-institutional agreement will be signed between the executing agency (WWF) and national institutions including PNN, Corporinoquia, and MADS regarding the coordination and implementation of project activities that fall under each entity's responsibility. In addition, project interventions to be carried out by competent public entities of a private or mixed nature (research institutes of the National Environmental System -SINA, as well as the attached or linked entities of the MADR), will be formalized through additional agreements (*convenios*). These agreements are implemented through WWF.

45. The implementation of this GEF project will be led by the Project Implementation Unit (PIU) housed in MADS and WWF-Colombia. A Project Steering Committee (PSC), including MADS, MADR, WWF, PNN, CORPORINOQUIA, the BioCF coordinator, and the regional Governments, will be established to provide guidance and decision-making on key issues such as the project's annual operations plan, and to guarantee an adequate inter-institutional coordination among the different sectors at the national and regional levels. The composition of this PSC is defined in the Project Operations Manual. A regional technical support team will be hired to implement activities and to guarantee constant communication and interaction with local and regional stakeholders. This team will be based in the region (see Annex 1 for more details).

B. Results Monitoring and Evaluation Arrangements

46. The proposed GEF operation will be supported by a solid monitoring, learning, and evaluation system. The Monitoring and Evaluation (M&E) system will (i) monitor project implementation (activities, processes, inputs, and outputs) to track progress (targets versus actual achievement) based on the Results Framework developed for the

[30] Global Biodiversity Outlook IV of the CBD https://www.cbd.int/doc/gbo/gbo2/cbd-gbo2-en.pdf

project; (ii) measure final outcome; (iii) support expansion of a robust system to monitor, verify, and report land-use changes; (iv) provide timely and accurate information to management for decision making; (v) create a platform for communication of results of the proposed project and benefits generated for target beneficiaries and stakeholders; (vi) develop a reporting method to meet the World Bank's routine reporting requirements; and (vii) generate data and information for the midterm review and the project completion report.

47. Project performance and results will be reported on a semiannual basis to the steering committee and the World Bank according to legal agreements.

48. An M&E officer (based in the PIU and with proven experience in M&E) will be responsible for collecting data, compiling, analyzing, and reporting at the national, regional, departmental, and municipal levels. The proposed project will also adopt a participatory M&E approach involving communities in the monitoring process. Even though experience at M&E exists in the institutions due to the implementation of other projects, training will be provided to national and regional M&E teams to strengthen their capacities to conduct M&E.

C. Sustainability

49. The sustainability and potential for scaling up of the proposed GEF program is found in the long-term financial and nonfinancial benefits that will be achieved as a result of the project activities.

(a) **Improvements in the enabling environment** (such as improved land-use planning ensuring landscape connectivity, institutional and technical capacity for conservation area management and financing) will sustain beyond the project's lifespan.

(b) **Participatory landscape planning and connectivity agreement development that includes** environmental and climate change considerations will be a tool for short-, medium-, and long-term decision making for the agricultural and environment sectors.

(c) **The project is embedded into and contributes to the GoC initiative Heritage Colombia (HECO),** which aims to protect and improve management of 20 million hectares of national protected areas and large landscapes or jurisdictions, ensuring their long-term maintenance and resilience to climate change. The Project Finance for Permanence (PFP) under HECO is a financial approach agreed on by public and private stakeholders to improve financial sustainability of the protected area systems. The PFP approach, managed by WWF Colombia, PNN and MADS, seeks to mobilize public and private resources required for implementation and governments commit to allocating resources and implementing actions to guarantee perpetual sustainability of the system.

(d) **The ownership and implementation of the program across** Government institutions will make sustainable resource management practices an integral part of national land-use planning and development efforts. The current support from the highest level of Government to climate change and biodiversity investments is key to the program's sustainability.

(e) **Involvement of the private sector** will contribute to the sustainability of land-use planning that is mutually beneficial to the private sector actors and the local communities.

(f) **Financial incentives** in the form of new financial instruments (such as the ITPS) will be designed to be accessible beyond the project's duration.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

1. Briefly describe the development impact in terms of expected benefits and costs

50. The proposed operation is expected to generate comprehensive benefits in terms of better economic opportunities, better livelihoods, restored land area and greater effectiveness of protected areas. This operation together with the OSIL Program are expected to ensure that the long-term development trend in the Orinoquia follows the socio-ecological transition toward sustainability and not at the expense of the irreversible loss of critical ecosystems and environmental services. Although the program is not expected to cover all the costs associated with the expected benefits, it will play a key role in the coordination of various sources of financing (public and private) for the development of the region and adhere to high social equity and environmental standards.

51. Special attention has been given to ensure long-term sustainability of the results from the operation: the objective will be to strengthen public and private entities and support the definition of tools and methodologies that will later be replicable at the local and regional levels. For example, in Component 1, the project's contribution to land use planning (including criteria and information regarding sustainability, biodiversity and ecosystem services) will have long-term impacts on the municipalities in the prioritized landscapes. Under Component 2, strengthening declaration processes for new protected areas, as well as plans for their effective management will have impacts beyond the scope of the project. Support to existing PAs will focus specifically on accessing additional funding for more effective PA management. Additionally, capacity-strengthening activities for the formulation and adoption of guidelines for production-conservation approaches will also contribute to change the way productive sectors have been operating in high environmental value areas. Finally, the economic and financial instruments that aim at supporting the financial sustainability of protected areas and productive landscapes can hugely determine the future management of resources and investments in Orinoquia.

52. The project will consider gender aspects during implementation and undertake a socially inclusive approach—one in which vulnerable or traditionally excluded social groups are treated as partners in the planning, operation of funds, and the deployment of support for various activities. The project has been designed so that both men and women will have equal opportunities to access, participate in, contribute to, and henceforth benefit from the various activities under the project. The project will particularly address gender inequalities in terms of access to capacity building, land-use planning, access to financing. The project is aligned with the current World Bank Group Gender Strategy[31] and particularly contributes to the strategy's Pillar 3 by removing barriers to Women's Ownership and Control of Assets (see Annex 5 for Gender Gap Analysis).

53. Citizen Engagement. The project will have a strong focus on citizen engagement. All interventions will be developed in a participatory way, including i) development and definition of the EMS and agricultural frontier, ii) the community based monitoring of endangered species in the El Tuparro National Paro, iii) the support to the declaration process of the National Park Savannas and Wetlands of Arauca, iv) the formulation of environmental

[31] World Bank Group. 2015. "World Bank Group Gender Strategy (FY2016–23): Gender Equality, Poverty Reduction, and Inclusive Growth."

management plans of the Regional Forest Reserve Cuenca Alta del Rio Satoca and conservation guidelines for the Tuparro Biosphere Reserve, and v) the development of connectivity agreements. In addition, the project will support consultative spaces and platforms in support to the regional environmental governance, including to the CRDA, the Rio Bita Water Council, and the SIRAP. These processes are detailed in the Stakeholder Engagement Plan (SEP) prepared for the project. Specific citizen engagement indicators have been designed to track citizen engagement (see Results Framework, indicators 1.2.4, and 2.1.3).

54. Climate co-benefits. The project contributes to both, climate change adaptation and mitigation. Improved access to finance and training to promote conservation compatible value chains, sustainable land management, agro-forestry and restoration helps build natural assets and reduces vulnerability to climate risks. These systems will also protect soils from erosion thus increasing soil organic matter and regulating water for more resilient production systems. By improving the effectiveness of PA management, the project will protect forests and other ecosystems that are carbon sinks. The project will thus contribute to generating an estimated 2 mio tCOe over a four-year period.

2. Rationale for public sector provisioning/financing, if applicable

55. The Orinoquia Integrated Sustainable Landscapes Project aims to improve the ecosystem functionality that guarantees the provision of ecosystem services, foundation for the development and quality of life of its inhabitants, while improving the management of land and water, conserving biodiversity and reducing pressures on natural ecosystems. These expected outcomes are mainly global public goods with substantial benefits for Colombia and its citizens. Public financing is justified for this purpose. The GoC has demonstrated its commitment to promoting the expansion of the National System of Protected Areas and to continue developing interventions framed in a green growth model, commitments much needed in the Orinoquia region considering the urgent need to move toward productive systems that integrate the vision and management of landscapes in a way that guarantees their resilience to climate change, biodiversity conservation and ecosystem services' provision. The integration of environmental considerations in the existing productive objectives for the region, as well as in the peace process, is crucial for the sustainable economic and social well-being of the region.

3. Value added of the Bank's support

56. The World Bank has considerable experience working with the GoC in project implementation and a longtime participation in the development of natural resources policies. The Bank has been supporting several projects in the Orinoquia related to agriculture, forestry, livestock, biodiversity, land administration and green growth that provide valuable lessons for large-scale landscape interventions aimed at mainstreaming climate-smart and biodiversity-friendly practices. The World Bank is also promoting a programmatic approach in the land-use sector, including the implementation of various instruments (payment for results, technical assistance, investment) to increase transformative impact.

57. The Forest Conservation and Sustainability Project in the Heart of the Colombian Amazon (P144271) under the implementation of the WB and Patrimonio Natural focuses on improving governance and promoting sustainable land use practices to reduce deforestation and preserve biodiversity in close to nine million hectares, while supporting the generation of opportunities for vulnerable communities in the area, including smallholder farmers and indigenous communities, as well as promoting a positive impact on the regional producer associations, local governments and environmental authorities. Another project relevant to this proposed operation is the

Mainstreaming Sustainable Cattle ranching (P104687) that aims at promoting the adoption of environment-friendly Silvopastoral Production Systems for cattle ranching in different areas, to improve natural resource management, enhance the provision of environmental services (biodiversity, land, carbon, and water), and raise the productivity in participating farms.

4. Brief description of methodology/scope and next steps

58. **The economic analysis (Annex 6) follows GEF guidelines** to ensure a gradual reasoning that takes into account: (i) the global environmental and adaptation problems, root causes and obstacles that must be addressed; (ii) the baseline scenario or any associated baseline projects; (iii) the GEF focal area strategies, with a brief description of the expected outcomes and components of the project; (iv) incremental / additional cost reasoning and expected contributions from the baseline and co-financing; (v) global environmental benefits; and (vi) innovation, sustainability and potential for scaling up.

B. Financial Management

59. **The Bank conducted a financial management assessment (FMA) of the financial management (FM) arrangements for the Project.** The FMA was carried out in accordance with Bank Policy: Investment Project Financing and Bank Directive: Investment Project Financing and the Financial Management Manual for World Bank-Financed Investment Operations (effective March 1, 2010 and revised February 10, 2017). The scope of the FMA included: (i) an evaluation of existing FM systems to be used for Project monitoring, accounting, and reporting; (ii) a review of staffing arrangements; (iii) a review of the flow of funds arrangements and disbursement methods to be used; (iv) a review of internal control mechanisms in place; (v) a discussion of reporting requirements, including the format and content of unaudited interim financial reports (IFRs); and (vi) a review of the external audit arrangements.

60. **The FMA concluded that WWF Colombia** has general experience executing projects financed by local and international donors but does not have specific experience with World Bank-financed projects. The entity, as executing agency, has sound internal controls and risk procedures, has financial policies and processes in place according to WWF-US requirements, and is audited by its internal audit office in the WWF-US. Moreover, by its trajectory and experience, it has general capacity to manage FM aspects of the project. Nevertheless, in the FM assessment some issues were identified which could represent a FM risk during project implementation such as: i) the entity is going to change its financial information system over the course of 2019, which would imply possible adjustments to its financial policies and procedures and a risk related to the maintenance of project FM arrangements; ii) implementation requires important coordination with various government institutions (local, regional, and national levels) and the definition of appropriate roles and responsibilities, and legal agreements; iii) WWF staff needs to strengthen its knowledge regarding policies and procedures for Bank-financed projects. As a result, **at entry, the overall FM-assessed risks for the project are rated as substantial**. The rating could be reviewed and updated during project execution.

61. **FM action plan and FM-related conditions.** The action plan agreed during the assessment includes an Enterprise Resource Planning (ERP) action plan to ensure the maintenance of the FM arrangements during the transition period. A fiduciary team has been appointed with qualifications and terms of reference acceptable to the Bank. During execution, the Financial Management Specialist (FMS) will supervise the adequate action plan implementation and no legal requirement is necessary.

C. Procurement

62. **Procurement will be conducted in accordance with the World Bank's Procurement Regulations** for IPF Borrowers for the supply of goods, works, non-consulting and consulting services issued in July 2016 and updated in November 2017 and August 2018.

63. **A procurement capacity assessment was performed to assess WWF Colombia**, the entity that will be responsible for all procurement activities under the project and included a review of WWF Colombia's organizational structure for project implementation, as well as staffing and procurement systems that are in place, to determine the risk and mitigation measures. The assessment concluded that WWF does not have previous experience implementing projects financed by the World Bank. It is suggested to carry out an action plan that includes: (i) hiring a procurement specialist with experience satisfactory to the World bank; (ii) keeping the Procurement Plan updated in STEP to reflect the real execution of the project and to keep the procurement strategy updated; (iii) strengthening the internal processes and procedures for Project Procurement; (iv) including in the Operating Manual the following: (a) a Grievance Redress Mechanism; (b) the guidelines to be followed by the executing entity in relation to filing and documentation management of the procurement processes and contract administration; (c) a clear definition of the processes, roles and responsibilities of the entities and staff related to the implementation of the procurement activities.

64. **Procurement arrangements:** WWF with the World Bank' support has developed a Project Procurement Strategy for Development (PPSD) identifying the appropriate selection methods, market approach and type of review by the World Bank, as follows: Goods, works and non-consulting services will be procured following Request for Bids, Request for Quotations and Direct Selection methods. Under the open international competitive procurement approach, the World Bank Procurement Standard Documents will apply. When approaching the national market, the procurement documents will be agreed with the World Bank.

65. **Consulting services will be procured following Quality and Cost-Based Selection**, Fixed-Budget-Based Selection, Least-Cost-Based Selection, Quality-Based Selection, Consultant's-Qualification-Based Selection, Direct Selection, and Individual Consultants methods. Under the International Market Approach, the World Bank Request for Proposals standard document will apply. When approaching the national market, the procurement documents will be agreed with the World Bank.

D. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

E. Environmental and Social

66. The Project environmental and social risks and impacts were assessed at framework level, through an Environmental and Social Assessment (ESA). The project will conduct a broad range of investments and activities of different nature and with different geographic scopes; most of which will be defined in detail only during Project implementation. The nature and scale of negative environmental risks and impacts of the project activities are, in principle, expected to vary from moderate to even low, given the project design is geared towards improving the management of high-conservation value landscapes and reducing both environmental risks and adverse direct, indirect and cumulative impacts of rural land use in the Orinoquia region, in Colombia. It was determined that the Project activities aimed at influencing the territorial and sector planning may eventually be affected by existing social conflict, particularly among those groups whose interests may be directly affected; and that might, to a small degree, generate impacts beyond the actual footprint of the Project (leakage). The Project will be located in a socially sensitive area, as the Revolutionary Armed Forces of Colombia (FARC) had a presence in all departments of the Orinoquia Region. Despite its transition from a military movement to a political party, multiple armed groups, including the National Liberation Army (ELN), and other groups dispute the territory and control of resources. This represents a security risk to the people who will participate in Project activities and tasks in the field, such as data gathering for the generation of information on biodiversity and ecosystem services, the construction of infrastructure and other physical investments in areas with low accessibility to support the management of protected areas and the rural productive landscapes (e.g. within the pilots to "promote sustainable economic activities in production and conservation landscapes").

67. The ESA sets out guidelines to manage the risks and impacts already identified; and to further refine the assessment once the details of the activities are defined, during Project implementation (Terms of reference to develop the specific plans and mitigation measures to be used in line with the mitigation hierarchy were also drafted during Project preparation). Social aspects considered in the ESA include, among others: i) barriers of targeted vulnerable group to participate in project activities and access its benefits; ii) risks of creating or exacerbating conflicts with stakeholders who may have developed patronizing political and economic relations with smallholder farmers and/or Indigenous Peoples (IPs) and afro-descendants; iii) risks or impacts associated with land and natural resource tenure and use; iv) risks of child and forced labor for the sort of proposed "sectoral production and conservation plans" and other investments in the field; v) risks to IPs intangible cultural heritage as a result of adopting new production and conservation approaches; and vi) barriers to develop an inclusive and culturally adequate stakeholder engagement strategy.

68. A draft Process Framework and a draft Indigenous Peoples Planning Framework (IPPF) were prepared, which will be updated and thereafter implemented throughout Project implementation. The Recipient has also developed, consulted and disclosed a Stakeholder Engagement Plan (SEP) based on the stakeholder analysis developed for the ESA. The Environmental and Social Commitment Plan (ESCP), the Appraisal ESRS, and the SEP were disclosed on June 19, 2019.

69. **The Environmental and Social Commitment Plan (ESCP)** specifies that i) written Labor Management Procedures (LMP); ii) a security protocol; iii) Environmental and Social Management Plans for the Construction of Small Scale Infrastructure; iv) an Environmental and Social Management Framework (ESMF) related to the Conservation-Production Pilots for ecological connectivity in forestry, rice and livestock landscapes; v) an Integrated Pest Management and Agrochemicals Use Program; and vi) sustainable Management Plans for wild species/populations; will be prepared and thereafter implemented, in accordance with the ESA, and in a manner acceptable to the Bank. Refer to the Environmental and Social Review Summary ESRS-Report No: ESRSA00152 for further detail.

V. Grievance Redress Mechanism

70. **A grievance redress mechanism (GRM) will be set up in the PIU** to address any potential conflicts or disputes involving project beneficiaries or stakeholders throughout project implementation. The design of the GRM will benefit significantly from the progress made on designing a national GRM for the Integral National Strategy for Deforestation Control and Forest Management (EICDGB, in Spanish), supported by the World Bank managed Forest Carbon Partnership Facility (FCPF) Readiness Grant.

71. **Regarding citizen engagement, the proposed project will benefit from the results supported by the FCPF to establish citizen engagement mechanisms in each of the project's departments**. At subnational and community levels, through the communication program and the safeguards instruments, beneficiaries will be able to engage in the design and implementation of the local interventions. The project will (a) promote inclusiveness and sustainability as key implementation principles; (b) implement a communication strategy to communicate the GEF project goals and clarify existing doubts such as those arising from expectations on what the proposed project does and does not finance; (c) support participatory approaches and extensive local consultations for designing the EMS, refining the agricultural frontier, developing the connectivity agreements, supporting the protected area declaration process for Savannahs and Wetlands of Arauca, and through inclusive trainings on land-use planning and access to production-conservation financing; and (d) build on NORECCO as a multi-stakeholder and inclusive platform.

72. **Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS)**. The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VI. KEY RISKS

73. The project implementation risk is rated substantial. Regional and local elections in October 2019, the evolution of the peace process, and the continued presence of illegal armed groups pose **political and governance risks**. These risks will be mitigated through a coordinated and transparent dialogue with partners, newly elected officials and sectors in partnership with the OSIL program dialogue platforms as well as the CRDA (to be strengthened under component 2.1); special attention will be paid to ethnic groups and local communities (smallholders and settlers).

74. The fiduciary risk is rated substantial because WWF Colombia is going to change its financial information system over the course of 2019, which would imply possible adjustments to its financial policies and procedures and a risk related to the maintenance of project FM arrangements. In addition, WWF staff needs to strengthen its knowledge regarding policies and procedures for Bank-financed projects. This risk will be be managed by an Enterprise Resource Planning (ERP) action plan to ensure the maintenance of the FM arrangements during the transition period and the need to appoint a fiduciary team with qualifications and terms of reference acceptable to the Bank.

75. The technical design and stakeholder risks are rated substantial due to significant need of coordination between national, regional and local levels and due to the sensitive social context in which the project will be implemented. To address these risks, training and further analytical work will be supported. Well-defined administrative agreements and a detailed Project Operational Manual, which outlines coordination mechanisms to guide project implementation will also mitigate the implementation risk. The Project Operational Manual also includes procedures and protocols for working in areas affected by conflict, and Labor Management Standards will be developed during project implementation to ensure security of project workers (i.e. those directly involved in Project implementation, as well as workers contracted under the project and community workers involved in local restoration activities).

76. The institutional capacity risk is rated substantial, due to varying degrees of capacity of staff in institutions implementing the project. Training, which will be financed by the project, will mitigate this risk. The social and environmental assessment has been developed during preparation to provide guidance within the existing sensitive social context (including conflicts over land, the ongoing peace process, etc.).

VII.RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY: Colombia
Orinoquia Integrated Sustainable Landscapes

Project Development Objectives(s)

To promote representation of Orinoquia wetlands and savanna lands in land-use planning instruments and landscape connectivity in selected project areas.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	End Target
To promote representation of Orinoquia wetlands and savanna lands in land-use planning instruments			
1.1 Key Orinoquia ecosystems defined in land use planning (Yes/No)		No	Yes
To promote representation of Orinoquia wetlands and savanna lands in land-use planning instruments a			
2.1 Existing Protected Areas and Key Biodiversity Areas under improved management (Hectare(Ha))		554,907.00	2,258,182.00
To improve ecological representation and connectivity of selected conservation-production landscapes			
2.2 Area in productive landscapes under 'connectivity agreements' (ha) (Hectare(Ha))		0.00	61,235.00

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	End Target
1. Effective Integration of Environmental Considerations at Appropriate Scales in Territorial and Sector Planning			
1.1.1 Decision model of land use changes accessed (disagregated by) by: local farmers, producer associations, and local authorities (Text)		0/0/1	500/10/2
1.2.1 Municipalities that have defined their Main Ecological Structure (Number)		1.00	5.00
1.2.2 Municipalities with improved mapping of the agricultural frontier (number) (Number)		0.00	4.00
1.2.3 Land-use planning instruments that include biodiversity and ecosystem services criteria (Number)		0.00	4.00
1.2.4 Participants in landscape level land use planning training (number, of which female 30 percent) (Number)		0.00	1,500.00
1.2.4.a 30% of participants in landscape level land-use planning are female		0.00	450
2. Landscape Management for Connectivity and Resilience in Priority Biodiversity and Ecosystem Services Areas			
2.1.1 Management Plans and guidelines for protected areas adopted by PNN and WWF and under implementation (number) (Number)		2.00	15.00
2.1.2 DNMI Cinaruco provided with basic office infrastructure (Yes/No)		No	Yes
2.1.3 Local stakeholders participating in consultations on conservation in targeted areas (number, of which female 30%) (Number)		24.00	265.00
2.1.3.a 30% of stakeholdes participanting in consultation on conservation in targeted areas are female		0	80.00
2.2.1 Connectivity Agreements signed by: local farmers, producer associations, local authorities (Text)		0.00	100/4/2
2.2.2 Degraded land under restoration (Hectare(Ha))		20.00	370.00

Indicator Name	DLI	Baseline	End Target
2.3.1 Funding proposals for conservation-friendly agriculture and/or tourism submitted to the royalty system or other financial mechanisms (number) (authorities, indigenous people; farmers; entreprene (Number)		0.00	20.00
2.3.2 ITPS models of livestock management adjusted and disseminated (Number)		1.00	4.00
2.3.3 Certification process for sustainable bio-economy products defined (Yes/No)		No	Yes
2.3.4 Female owned Agricultural Production Units (APU) that receive capacity building on financing for sustainable agricultural practices (Number)		0	30

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
1.1 Key Orinoquia ecosystems defined in land use planning	Ecological representation means the presence of variables such as land cover, key ecosystems, ecosystem services supply areas, KBAs, protected areas, forest reserves into land use planning. This indicator measures the inclusion of these environmental criteria at a	Annual	Main Ecological Structure POTs	**Review of existing documents, follow up land use planning processes with local stakeholders, use of information generated in this project**	WWF

	regional and local level in different land use planning instruments. This Constitutes a FAP Predictive Proxi Indicator (PPI).				
2.1 Existing Protected Areas and Key Biodiversity Areas under improved management	Protected areas are those of the National System of Protected Areas (Cinaruco, Satoca Forest Reserve) and KBAs correspond to complementary conservation initiatives such as Bita Ramsar Site, El Tuparro Biosphere Reserve. This indicator measures the progress in the effective management of protected areas reflecting the following: i. protected area/s planning issues; ii. adequacy and appropriateness of management systems and processes; and iii. delivery of protected area objectives including conservation of values.	Annual	METT scoring	Review of METT report	WWF

	This indicator will be measured using the METT. Scores above 60 percent would be considered under "improved management" This indicator constitutes a FAP Core indicator.				
2.2 Area in productive landscapes under 'connectivity agreements' (ha)	Connectivity agreements are defined as a set of guideless and plans to ensure the connectivity of critical areas for biodiversity and ecosystem service provision, with emphasis on the maintenance of water regulation, and the restoration of degraded and fragmented landscapes. in semi-natural and transformed landscapes (productive areas – rice, cocoa, livestock, forestry), promoting the adoption of an Integrated Landscape Management (ILM) approach by public and private actors, in coherence with the regulations and territorial and land use	Annual	Connectivity agreements Direct observation Field survey	**Review of connectivity agreements and verification of these through survey and direct observation.**	WWF

	instruments. This indicator constitutes a FAP Core indicator.				

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
1.1.1 Decision model of land use changes accessed (disagregated by) by: local farmers, producer associations, and local authorities	This indicator measures the number of land use planning instruments that have incorporated environmental considerations during their formulation and refer to the POT (Planes de Ordenamiento Territorial). This Constitutes a FAP Predictive Proxi Indicator (PPI).	Annual	Municipalities POT documents	Review of POT documents	WWF
1.2.1 Municipalities that have defined their Main Ecological Structure	Municipalities that have defined their Main Ecological Structure (number) Main ecological structure is defined as the network of protected areas and key biodiversity areas and	Annual	Regional methodology for the identification of the main ecological structure Municipalitiy		WWF

	corridors between these. The indicator measures municipalities that have defined their ecological structure following the national guidelines This Constitutes a FAP Predictive Proxi Indicator (PPI).		maps of the main ecological structure		
1.2.2 Municipalities with improved mapping of the agricultural frontier (number)	The agricultural frontier is defined as the frontier between areas where agricultural activities are allowed, from the protected areas, areas of special ecological importance, and other areas where agricultural activities are prohibited by law or regulation. It measures the number of municipalities that have defined their agricultural frontier with the inclusion environmental criteria. This Constitutes a FAP	Annual	Regional methodology for the definition of the agricultural frontier including environmental criteria Municipalities maps of the agricultural frontier	Review of regional methodology for the adjustment of the agricultural frontier Review of the maps of agricultural frontier for four municipalities	WWF

	Predictive Proxi Indicator (PPI).				
1.2.3 Land-use planning instruments that include biodiversity and ecosystem services criteria	This indicator measures the number of land use planning instruments that have incorporated environmental considerations during their formulation and refer to the POT (Planes de Ordenamiento Territorial). This Constitutes a FAP Predictive Proxi Indicator (PPI).	Annual	Municipalities POT documents	Review of POT documents	WWF
1.2.4 Participants in landscape level land use planning training (number, of which female 30 percent)	Gender indicator. FAP Predictive Proxi Indicator (PPI). Citizen engagement indicator.	Annual	Training providers' reports	Review of reports	WWF
2.1.1 Management Plans and guidelines for protected areas adopted by PNN and WWF and under implementation (number)	This indicator measures the progress in the formulation and implementation of management plans or similar instruments, to strengthen the national and regional system of protected areas, and of other areas complementary to the conservation of biodiversity. Management Plans will be formulated for the Satoca	Annual	Management Plans document Conservation guidelines document METT scoring for implementation phase	Review of documents Review of METT scores	WWF

	Forest Reserve, and private natural reserves; conservation guidelines will be formulated for the Tuparro Biosphere Reserve). This Constitutes a FAP Predictive Proxi Indicator (PPI).				
2.1.2 DNMI Cinaruco provided with basic office infrastructure	This indicator measures if the DNMI Cinaruco, is provided with basic office infrastructure (cabin/house; office desks; stationary supplies; computers; mobile or land lines; cabinets; motor vehicle).	Annual	Technical inspection report Direct observation	Review of financial and procurement reports. Field visit.	PNN
2.1.3 Local stakeholders participating in consultations on conservation in targeted areas (number, of which female 30%)	This is a citizen engagement indicator. It measures the number of beneficiaries that participated into consultation and dialogue spaces to i) resolve conflicts associated to land use, production and conservation (CRDA); and concerns and disagreements associated to the Project's implementation; ii)	Bi-annual	Report of the training program	Review of documents, minutes of meetings, aide memoires	WWF

	participate in decision meeting spaces such us those available in the SIRAP bi-annual meetings and the Bita River Water Council. Agreements and commitments on land use, sustainable production and biodiversity conservation are expected from these consultation and dialogue spaces. This indicator constitutes a FAP Core indicator.				
2.2.1 Connectivity Agreements signed by: local farmers, producer associations, local authorities	Connectivity Agreements have been defined in the M&E Plan: PDO Indicators section. This indicator measures the number of producers, associations and local authorities that have signed and committed to connectivity agreements. These agreements will be formulated in consultation with all involved stakeholders.	Annual	Signed Connectivity Agreements	Review of Signed Connectivity Agreements	WWF

	This indicator constitutes a FAP Core indicator.				
2.2.2 Degraded land under restoration	Restoration activities will be focused on riparian corridors (unique plant community consisting of the vegetation growing near a river, stream, lake, lagoon or other natural body of water). It measures the number of hectares under restoration activities (nurseries establishment and consolidation, planting, maintenance, restoration interventions (active and area enclosure) in productive landscapes in the Arauca PDET Subregion. This indicator constitutes a FAP Core indicator.	Annual	Field survey Direct observation	Review of field survey data Field visits	WWF
2.3.1 Funding proposals for conservation-friendly agriculture and/or tourism submitted to the royalty system or other financial mechanisms (number) (authorities, indigenous people; farmers;	Financial mechanisms identified are the General Royalties System (Sistema General de Regalias), one of the most important	Annual	Funding proposals/projects	Review of proposals	WWF

entreprene	resources Colombian government has to propel territorial development and competitiveness; biodiversity offsets, to be payed through interventions in the territory, including restoration, by licensed operations (oil, mining and infrastructure projects); credits given by Finagro or Banco Agrario; and others identified during implementation. This indicator measures the number of proposals (projects or programs) formulated and submitted for financing.				
2.3.2 ITPS models of livestock management adjusted and disseminated	ITPS is a financial instrument focused on promoting the reconversion of extensive cattle ranching systems in areas of inadequate land-use. It consists of three components, i) the credit/ loan component, ii) the incentives component to ensure the successful implementation of the ITPS	Annual	FINAGRO's ITPS Model	Review of reports for the three livestock systems	WWF

	in areas of high ecosystem value, where it is required that producers have access to credit with special conditions and where intermediaries need to be able to reduce their risk level, iii) a group of complementary services to accompany the sustainable transformation (e.g. technical assistance), to ensure productivity increase of sustainable systems and to increase ability to service the credit while improving beneficiary living conditions. This indicator measures the number of models that have been adjusted and disseminated in three livestock systems (pidemonte, altillanura and flooded savannahs) This Constitutes a FAP Predictive Proxi Indicator (PPI).				
2.3.3 Certification process for sustainable bio-economy products defined	For the region there are just a few products of the bio-	Annual	Inventory and diagnosis	Review of diagnosis, analysis and roadmap	WWF

	economy that have certifications, patents or other recognitions for their national and international trade. Sustainable Bio-economy products include bio-based feedstock, biomass-derived material, supply chains, novel technologies. To identify the certification requirements in the region, there is needed (i) the development of a diagnosis of regional bio-economy products, ii) an international and national market analysis for these products; and (iii) definition of a roadmap towards certification, approval, and patent requirements and procedures. This indicator measures if a bio-economy certification process has been defined for prioritized regional products.		of bio-economy products Market analysis Roadmap for certification Training aide memoires	Review of aide memoires	

2.3.4 Female owned Agricultural Production Units (APU) that receive capacity building on financing for sustainable agricultural practices	There is a gender gap in female owned Agricultural Production Units (APU) receiving TA or advice related to agricultural activities. This indicator will measure the amount of female owned APU receiving targeted advice and training on financial resources and mechanisms available to implement sustainable production practices.	Annual	Report of the training program	Review of the training reports	WWF

ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Colombia
Orinoquia Integrated Sustainable Landscapes

Implementation Arrangements

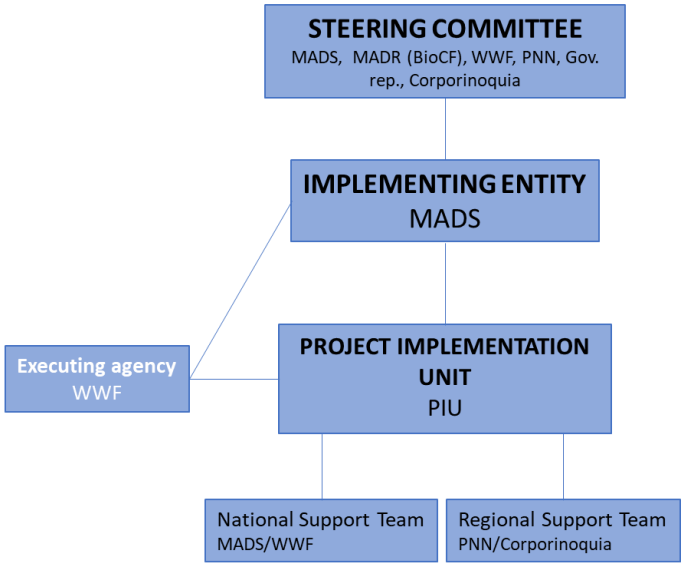
1. **WWF is the executing entity for this operation.** The funds flow, disbursement, accounting, and procurement will be managed within the WWF. For coordination and implementation of project activities, an inter-institutional agreement will be signed between the MADS and three main partners: the MADS, in charge of formulating, implementing, and orienting environmental policy; PNN as the entity responsible for managing the National Protected Area System (SINAP); CORPORINOAQUIA as the regional environmental authority covering the departments of Arauca, Casanare and Vichada, and WWF as the executing entity with technical expertise in protected area declaration and conservation financing, and as the fiduciary entity. No flow of funds will occur outside of WWF to other agencies involved in implementation. Additional agreements will be signed with technical entities supporting project activities.

2. **The PIU will be housed in MADS and WWF.** The project coordinator, a technical advisor for territorial and sustainable planning, and a safeguards specialist will be based in MADS, in its climate change directorate of the Vice Ministry of Political Normalization (MADS). The project coordinator will also participate in the technical and steering committee meetings of the BioCarbon Fund project. The communications expert, M&E expert and administrative staff (procurement, financial specialist and accounting) will be based in WWF, with constant interaction and joint meetings between the two, and the regional support team. In addition to its technical support role, WWF will act as fiduciary agency. The PIU will be in charge of implementing the annual work plan and budget (approved by the Project Steering Committee) and overall technical supervision of project implementation. The core staff of the PIU, including a PIU coordinator, a financial specialist, an accountant, and a procurement specialist, will be hired immediately after grant effectiveness through a competitive process led by the WWF staff familiar with World Bank Group procurement rules, the rest of the PIU will be hired within two months of grant effectiveness through the same competitive process.

3. **The Project Steering Committee (PSC) will ensure proper coordination and decision making** of the project that involves several different sectors at national and regional levels and provide guidance, decision making on implementation, and oversight. It will comprise the Vice Minister for Agricultural Affairs (MADR), the Vice Minister of Political Normalization (MADS), the Director of PNN, the director of CORPORINOQUIA, the project coordinator of the BioCarbon Fund project, one Governor of the intervention area departments (the Governors of Vichada, Arauca and Casanare will rotate annually). The PSC will be set up and be operational as soon as possible after grant effectiveness.

4. **Regional Support Team (RST).** An RST for the project-related activities will be hired. It will consist of a technical expert on protected area management (based in PNN) and expert in environmental information management (based in CORPORINOQUIA).

Figure 1: Institutional arrangement



5. Implementation support for the proposed project will focus on the functions and activities typically monitored by World Bank task teams during supervision, including monitoring of technical activities, management functions (administration, FM, and procurement), and compliance with safeguards policies. In addition, special attention will be directed to ensuring the timely implementation of the risk mitigation measures identified in the Systematic Operations Risk-Rating Tool (SORT) matrix. The implementation support strategy is flexible and is likely to be amended during implementation in response to the evolving needs of the project, including changes in the institutional context.

Strategy and Approach for Implementation Support

The Implementation Support Strategy includes the following main elements.

6. Timely support. World Bank implementation support will begin immediately after the GEF approval to help the borrower achieve effectiveness on time (this will involve formally establishing the PIU and recruiting key staff and signing agreements with co-implementing partners/agencies). The frequency of supervision missions may be higher at the beginning of implementation (possibly up to three per year) to closely monitor the launch of the project and decrease to the usual two missions per year after the project reaches a good implementation pace.

7. Continuously strengthening capacities. The MADS has in the past successfully implemented World Bank-funded operations. World Bank operations, fiduciary, and safeguards trainings will be provided early on to staff in the WWF-MADS PIU. In addition to carrying out their usual implementation support functions, the World Bank fiduciary and safeguards specialists will be available to provide close support and detailed, hands-on guidance to their counterparts during the initial months following effectiveness.

8. Continuously assessing the effectiveness of implementation arrangements. The relationship between the World Bank and the project-executing entities is expected to be strengthened during implementation, and the governance risk associated with these partner relations is Moderate. However, there are some risks related to the

implementation agencies, specifically in terms of effective coordination among national agencies, and between them and the local/regional institutions. Additionally, some of the activities involved are challenging form a coordination perspective, especially those aimed at supporting participatory processes for development of connectivity agreements at the landscape level, which will depend on the establishment of new relationships with relevant partners. Therefore, special attention will be given by the World Bank to continuously assess the effectiveness of coordinating arrangements. An in-depth review of such arrangements will be carried out at the end of the first year of implementation.

9. **Technical support.** The project will support a wide range of activities designed to strengthen the capacity of the implementing agencies. The World Bank task team will include technical specialists with expertise in a range of areas, drawn from within the institution. Technical specialists with expertise in other areas may be recruited externally, as necessary. Field visits will focus on verifying compliance with the policies and procedures spelled out in the Operational Manual, identifying bottlenecks that may be impeding implementation progress, and offering recommendations designed to overcome those bottlenecks.

10. **Capacity.** Strong implementation support will likely be needed while PIU staff climb the learning curve. For this reason, the World Bank task team is prepared to schedule additional implementation support missions as needed during the first year of implementation.

11. **Fiduciary aspects.** The World Bank fiduciary specialists will provide early procurement support to the PIU. The World Bank procurement specialist and World Bank FM specialist assigned to the project are both based in Colombia, so in addition to joining regular PIU meetings, they can work to avoid initial delays in submitting withdrawal applications, performing FM activities, processing procurement requests, etc.. The Annual Operation Plans (AOP) and annual Procurement Plans will allow the executing agencies to plan the use of funds based on actual opportunities and needs. An audit of annual project financial statements will be conducted by an independent auditing firm and in accordance with ToR acceptable to the World Bank.

12. **Safeguard compliance.** Considering the highly technical nature of the project, associated safeguard risks are not expected to be significant, but nevertheless would be managed properly, particularly ensuring that the safeguard instruments to support the ER phase are properly designed. Environmental and social safeguards reviews will be carried out as part of every implementation support mission, that is, twice per year on average. The World Bank environmental and social safeguards specialists will backstop the project consultants by reviewing the documents produced and providing additional on-the-job capacity building to the staff of the PIU.

13. **M&E.** The dedicated M&E team in the PIU will be responsible for developing, putting in place, and maintaining the project's decentralized M&E system, which will systematically collect information needed to track progress achieved against the PDO, generate financial information, and document compliance with safeguards policies. Information generated by the M&E systems, complemented by information emerging at the time of the midterm review, will be used to adjust operational procedures and make any necessary mid-course corrections to the project implementation modalities.

Implementation Support Plan and Resource Requirements

14. **The main focal areas** of projected implementation support activities are summarized in the following tables, including required skills. Implementation support is expected to be particularly intense during the first 12

months. Implementation support missions will be reduced from three to two in the years following the first year, although support provided by country office-based members of the task team will remain.

Implementation Support Plan

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First 12 months	Project establishment Establishing fiduciary systems Communications strategy development and implementation Environmental and social aspects in place Establishment of committees/units and project steering committee Establishment of cooperation agreements with partners, Setting-up M&E system.	Task Team Leader, Environmental Specialist, Agriculture Specialist, Procurement Specialist, Social Specialist, FM Specialist, PES Specialist, Communications Specialist	20 staff weeks	—
13–60 months	Program implementation Communication activities Monitoring Reporting	Task Team Leader, Environmental Specialist, Procurement Specialist, Social Specialist (Peace lens), Water Resource Mgmt Specialist, FM Specialist, PES Specialist, Communications Specialist	60 staff weeks	—
Other				

Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments

Safeguards (social, IP, and environment; other safeguards per project documents)	World Bank supervision will require 8 staff weeks for the first fiscal year and 6 staff weeks in subsequent years (mainly senior technical staff)	Two trips per fiscal year	—
Technical expertise enhancement (PA, land-use planning, M&E, knowledge sharing, technical support, communications specialist, security, and so on)	World Bank supervision will require 24 staff weeks for first fiscal year and 18 staff weeks in subsequent years (mainly senior technical staff)	Two trips per year	—
Institutional capacity strengthening (FM, procurement, disbursement)	8 staff weeks in first fiscal year and 6 staff weeks in subsequent years (mix of junior and senior technical staff)	Two trips per fiscal year	—

Financial Management

15. Institutional fiduciary arrangements. WWF will have the overall project coordination responsibility, establishing a Project Implementation Unit (PIU) that will ensure all financial arrangements related to planning, budgeting, accounting, internal control, funds flow, financial reporting, and external audit, in general, the maintenance of the financial management system of the Project are in place. Part of PIU technical staff will be based in MADS offices. Detailed roles and responsibilities have been included in the Project Operational Manual.

16. **The project will finance reasonable WWF's operating costs**, acceptable to the Bank, for the incremental expenses incurred by WWF on account of project administration, implementation and monitoring. The cost to finance must be agreed by WWF and MADS based on a legal/institutional agreement required.

17. Staffing. WWF, as executing agency, throughout the Project execution, shall maintain qualified financial staff to support fiduciary responsibilities – financial management specialist and accountant. The project will finance reasonable WWF's Operating Cost, including staff costs.

18. Planning and Budgeting. WWF will be responsible for preparing and monitoring the annual operating plan and the respective budget. WWF will monitor the project budget through PTS information system; project payments will be processed and recorded by WWF through the SAGE 300 – financial information systems. The entity is going to change its financial information system during 2019, where budgeting, finance and accounting, project management and human resources will be integrated.

19. Accounting and financial reporting. The consolidated financial statements of WWF are prepared using the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of

America (U.S. GAAP). The project will record transactions with a specific cost center and will capture and report budget and accounting information by component and subcomponent according to the project needs. WWF Colombia, will be responsible for preparing project financial reports and disbursement requests, submitted to the World Bank on the basis of Statements of Expenditures -SOEs. The entity must have an ERP implementation action plan, to ensure the maintenance of the FM arrangements during the transition period.

20. The unaudited interim financial reports (IFRs) prepared by WWF, under formats agreed with the WB and documented in the project Operational Manual. The entity will submit the IFRs on a semiannual basis within 45 days after the end of each such period. The IFRs will serve as a basis for the annual financial statements and audit purposes.

21. WWF shall retain all records (contracts, orders, invoices, bills, receipts, and other documents), evidencing expenditures under their respective parts of the project until at least the later of (a) one year after the World Bank Group has received the audited financial statements covering the period during which the last withdrawal from the loan account was made; and (b) two years after the closing date. WWF shall enable the World Bank Group's representatives to examine such records.

22. Retroactive financing. Even though no retroactive financing is expected, we have allowed retroactive financing within the policy limitations in case it is needed. Retroactive financing to counterpart funding will be managed in accordance with GEF standards.

23. Project operating costs. The project will finance operational costs, incurred by WWF, to strengthen the institutional and implementation arrangements for the project execution, that will not exceed the percentage agreed in the GEF Data sheet; including, *inter alia*, operation of the PIU, project supervision, monitoring and evaluation; and office maintenance, utilities, printing, non-durable goods, travel costs, and banking charges.

24. External audit arrangements. The project's annual financial statements will be audited by a private firm under ToRs, both acceptable to the Bank, with an interim review to conduct onsite visits to the project. Each audit of the financial statements shall cover the period of one fiscal year of the recipient or other period the Bank may agree. The project's annual audited financial statements will be submitted to the World Bank no later than six months after the end of each audited period.

25. Access to information. According to the access to information policy for the World Bank Group-financed operations, the Recipient will disclose the audited project financial statements on the WWF Colombia's website. Following the World Bank Group's formal receipt and acceptance of these statements from the Recipient, the World Bank Group will make them available to the public.

26. Implementation support and supervision strategy. The World Bank Group FM team will monitor all the FM action plans to ensure successful implementation and that the deadlines are met; and it could update the FM-assessed risk for the project periodically. Additionally, during project implementation, semi-annual FM supervisions will be conducted, and periodic unaudited interim financial reports and the annual external audit reports will be

reviewed.

(i) Disbursements

27. Disbursement arrangements. The disbursement of proposed project funds will be processed in accordance with World Bank's procedures as stipulated in the Grant Agreement and Disbursement Letter. Withdrawal applications and necessary supporting documentation will be submitted to the World Bank electronically through the Client Connection website. The proposed disbursement arrangements are summarized in tables 1.1 and 1.2:

Table 1.1. Disbursement Arrangements

	Arrangement
Disbursement Method	Advance, Reimbursement and Direct Payment
Type of Designated Account	Segregated
Frequency of documentation	Quarterly
Currency of Designated Account	US$
Financial Institution at which Designated Account will be opened	Bancolombia Panamá
Supporting documentation	Statements of Expenditures - SOEs
Designated Account ceiling	US$1,000,000

Table 1.2. Disbursement Categories

Category	**Amount (US$)**	**Percentage of Expenditures to be Financed (inclusive of Taxes)**
(1) Goods, works, consulting services, non-consulting services, training and operating costs under the project.	5,936,073	100%
TOTAL AMOUNT	5,936,073	

28. Special Account. The funds will be transferred from the designated account in USD to the exclusive Project Operating account (special account) in local currency – Colombia peso. WWF will open the special account, acceptable to the Bank. The project shall not transfer resources for investment purposes. Detailed procedures are included in the Project Operational Manual.

29. Other disbursement instructions. Not required.

(iii) Procurement

30. Procurement will be conducted according to the World Bank's Procurement Regulations for IPF Borrowers for the supply of civil works, goods, consultants and non-consulting services, July 2016, reviewed November 2017 and August 2018.

31. Procurement capacity assessment. WWF is the executing entity for this operation and will be the only entity responsible for the implementation of the project procurement activities. A procurement capacity assessment was performed to assess WWF Colombia, the entity that will be responsible for all procurement activities under the project and included a review of WWF Colombia's organizational structure for project implementation, as well as staffing and procurement systems that are in place, to determine the risk and mitigation measures. The assessment concluded that WWF does not have previous experience implementing projects financed by the World Bank. The project will be executed with partner entities that will be responsible for most of the technical issues. Therefore, it is necessary that WWF implement the following recommendations:

- **Staff:** The entity must hire a procurement professional with experience in the WB procurement guidelines/regulations; Technical teams need to be strong, and if it is required, reinforced with the required experts as they will be responsible for providing the necessary inputs for the different procurement processes;
- **Roles and responsibilities:** In the Operations Manual's procurement chapter it is necessary to establish the roles, responsibilities and management of inter-institutional relations of all the actors and participating entities in the implementation of the Project Procurement activities so the required inputs for the procurement processes are guaranteed. WWF needs to strengthen the internal processes and procedures for the implementation of Project Procurement activities.
- **Training:** Identify specific training needs in procurement for the executing entity and/or project actors that require it.
- **Grievance Redress Mechanism:** Guarantee that there is a mechanism for receiving, responding to, and monitoring complaints that arise during the procurement selection and contracting processes.
- **File management:** Guarantee the proper file management of procurement processes and contract administration. This includes keeping the information properly and timely filed to facilitate monitoring and audits.
- **Procurement Plan:** The project procurement plan needs to be up-to-date and managed through STEP. Keep the Procurement Strategy updated.

32. Procurement arrangements**.** WWF with World Bank has completed the Project Procurement Strategy for Development (PPSD) identifying the appropriate selection methods, market approach and type of review by the World Bank, as follows:

a. **Goods, works and non-consulting services** will be procured following Request for Bids, Request for Quotations and Direct Selection methods. Under the open international competitive procurement approach, the World Bank Procurement Standard Documents will apply. When approaching the national market, the procurement documents will be agreed with the World Bank.

b. **Consulting services** will be procured following Quality and Cost-Based Selection, Fixed-Budget-Based

Selection, Least-Cost-Based Selection, Quality-Based Selection, Consultant's-Qualification-Based Selection, Direct Selection, and Individual Consultants methods. Under the International Market Approach, the World Bank Request for Proposals standard document will apply. When approaching the national market, the procurement documents will be agreed with the World Bank.

33. Risk mitigation plan**.** The following table summarizes the mitigation actions proposed for the procurement-related risks identified above.

Table 1.3. Procurement improvement action plan

Risks - Areas for Improvement	Mitigation Actions	Responsible	When
Procurement planning Lack of planning or poor planning can cause delays in project execution.	The implementing entity, with Bank support completed the PPSD and the procurement plan.	WWF	Done
	Include the Procurement Plan in the procurement plan administration system -STEP.		During Project implementation.
	Keep the Procurement Plan updated in STEP to reflect the real execution of the project. Keep the procurement strategy updated.		During Project implementation.
Staff Lack of staff with expertise in procurement processes with the World Bank Procurement guidelines/regulations.	(i)Prepare the terms of reference and perform procurement selection and hiring process of the Procurement Professional. (ii) Establish and monitor the workload constantly to determine additional needs of support staff (ii) Ensure that the technical teams are strong enough and organized in all the participating entities.	WWF	Immediately after the effectiveness During Project implementation Immediately after the effectiveness
Roles and responsibilities Unknown the roles and responsibilities related to the procurement activities due to the participation of multiple actors and entities in the project.	Prepare Project Operational Manual's procurement chapter with a clear definition of the processes, roles and responsibilities of the entities and staff related to the implementation of the procurement activities.	WWF	Prepared
	Identify a strategy for operating with multiple actors and entities and reflect it in the Operational Manual. WWF needs to strengthen the internal processes and procedures for the implementation of Project Procurement activities.		Immediately after the effectiveness and during Project implementation.

Training No experience in executing projects financed by the WB.	Once the procurement professional required is hired, a detailed workshop on Procurement Regulations will be held with those responsible for the procurement processes of the executing entity and the others participating entities.	WWF / Ministry of environment/ Other partner entities	Before starting the first procurement process.
Complaints There is no system for receiving and monitoring the complaints that arise during the procurement processes	Include the complaints' mechanism of reception, response and monitoring in the Project Operational Manual's procurement chapter.	WWF	Prepared
	Maintain updated complaints' database including the reception and response during the development of the procurement processes.		During project implementation
Files management Incomplete contractual records/files	Include in the Project Operational Manual the guidelines to be followed by the executing entity in relation to the files and documentation management of the procurement processes and contract administration.	WWF	Prepared

34. The overall project risk for procurement is substantial. This rating is due to the limited capacity of the executing entity in procurement and the complexity of implementation arrangements.

ANNEX 2: Project Description

COUNTRY: Colombia
Orinoquia Integrated Sustainable Landscapes

Project Beneficiaries

1. **The project will have direct and indirect benefits,** for both the institutional framework related to planning and the sustainable management of Orinoco landscapes, as well as for the populations in the selected mosaics (Table 1).

2. **At the institutional level, the project will benefit local, regional and national authorities to improve their capacities to create favorable conditions for the planning and sustainable management of landscapes in priority municipalities**. Public institutions in charge of land-use planning and production management will benefit directly from access to key information to support territorial, sectoral and environmental planning with solid information, built in a participatory manner. This will allow them to incorporate criteria for biodiversity and ecosystem services in their respective planning and management instruments.

3. **At the national level, the capacities of the Ministry of the Environment and Sustainable Development (MADS) and the Ministry of Agriculture and Rural Development (MARD) will be strengthened by having guidelines for the sustainable management of landscapes**; Natural National Parks of Colombia (NNP) will be strengthened with the support of governance processes for the declaration of new protected areas and the implementation of management plans; and the tools for territorial planning of the National Planning Department (DNP) will be strengthened with methodological inputs for the formulation of Land Management Plans (POT). Research Institutes including the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), Alexander Von Humboldt Biological Resources Research Institute (IAvH), and agricultural research institutes *Agrosavia* and the Rural Agricultural Planning Unit (UPRA) will benefit from generation of technical information and refinement of technical tools for improved biodiversity and ecosystem services management to promote the connectivity and resilience of landscapes in selected mosaics.

4. **At the regional level, the regional environmental authority, *Corporinoquia*, departmental and municipal governments, as well as institutions that are part of the Regional System of Protected Areas (SIRAP Orinoquia), the Bita River Basin Council and the Regional Centers for Environmental Dialogue (CRDA)** will benefit from support to institutional strengthening on land use planning, information management and access to financing for sustainable productive activities. Other Regional Autonomous Corporations and local entities will benefit indirectly with methodological developments and information that can be replicated and used in other mosaics and municipalities in the region.

5. **Local stakeholders**, such as agricultural producers, producer organizations and local cooperatives, ethnic communities, local fishermen carrying out subsistence, commercial, sport and ornamental fishing, tourism operators in the region, and women's groups, will benefit from training and capacity building in sustainable land-use planning,

access to financing for sustainable productive activities, strengthening of their business and associative structures, and from the project's support to commercialization of their sustainably produced goods and services.

6. **Project support to capacity-building extends the number of beneficiaries to other local organizations** such as community action committees, agricultural schools, environmental and social NGOs, indigenous authorities, peasant communities, associations of producers, etc, who will have access to training curricula in the field of planning and territorial management, and make use of the modules that will be institutionalized for the management and access to resources for projects with a conservation- production focus.

7. **The inhabitants of the region at large will benefit from project results**, as it will help to ensure continued provision of ecosystem services, as well as improved capacities and government policies to better manage the region's natural resources.

Table 2.1. List of stakeholders, mandates and role within the project.

Stakeholder	Mandate	Role in the project.
Ministry of the Environment and Sustainable Development (MADS)	The MADS leads management of the environment and renewable natural resources, is responsible for guiding and regulating the environmental management of the territory, and of defining the policies and regulations to which recovery, conservation, protection, management, handling, use, and sustainable exploitation of renewable natural resources and the environment are subject to.	GEF focal point. Provides guidance for the implementation of the Project in line with national policies. Will ensure coordination with affiliated and related entities for the proper implementation of the Project.
Ministry of Agriculture and Rural Development (MADR)	The MADR is responsible for formulating, coordinating and assessing policies that promote the competitive, equitable and sustainable development of agricultural, forestry, fishery and aquaculture and rural development, coordination and participation, that contribute to improving the level and quality of life of the Colombian population.	Will ensure coordination with affiliated and related entities to ensure proper implementation of the Project.
National Natural Parks of Colombia (PNN)	Entity responsible for managing the System of National Natural Parks (SPNN), and for coordinating the National System of Protected Areas (SINAP), with the objective of conserving biological and ecosystem diversity, preserving environmental services, and protecting the natural	Will ensure consistency with the priorities of the SINAP and existing environmental and protected area management plans. Will ensure coordination with local and regional authorities for project development and implementation. Will contribute to baseline definition.

	habitat and heritage where traditional cultures are developed and maintained.	Will be responsible for managing component 2.1 interventions.
CORPORINOQUIA	CORPORINOQUIA is the regional environmental authority covering the departments of Arauca, Casanare and Vichada. Manages and administers the renewable natural resources, enacts, develops and implements regulations, plans and policies aimed at the recovery, conservation, protection, management, and use of natural resources and the environment.	Ensures consistency with existing environmental and protected area management plans, ensures coordination with territorial units for the development of the project, will contribute to the definition of TdR and follow-up to the development of the products
WWF Colombia	A non-governmental organization that seeks to harmonize natural resources conservation with human needs, focusing on supporting protected areas creation and strengthening, on endangered species protection, the development of sustainable production alternatives and citizen engagement.	WWF will be the executing entity and host the Project Implementation Unit (PIU), guaranteeing the timely and efficient implementation of the project, providing technical support, develop monitoring and evaluation (M&E) reports, in charge of the administrative and financial management of the project.
Institute of Hydrology, Meteorology and Environmental Studies (IDEAM)	IDEAM's mandate is to generate environmental data and information, through studies, research, and inventories, and information monitoring and management, that serve as input to environmental decision-making and environmental policy making.	Will provide input to comp. 1 interventions to ensure coherence with the methodologies and tools for information and environmental knowledge management.
Alexander von Humboldt Institute (IAvH)	IAvH is responsible for scientific research on biodiversity, including hydrobiological and genetic resources. At the same time, it hosts and coordinates the National Biodiversity Information System (SIB Colombia) and the national biodiversity inventory.	Will be responsible to coordinate project intervention that strengthens environmental land-use planning to inform agricultural production management. Will be responsible, in alliance with *Agrosavia*, to develop land-use planning models for agricultural landscapes to inform decision making.

Rural Agricultural Planning Unit, UPRA	UPRA's role is to guide formulation and implementation of public policies for production management planning on rural property, in order to promote the efficient use of soil for agricultural rural development with a territorial approach.	Will provide input to comp. 1.1 interventions, in coherence with the methodologies and tools for planning and soil production management. Will benefit from results that strengthen agricultural planning and production management.
Colombian Agricultural Research Corporation, AGROSAVIA	AGROSAVIA, is a non-profit of a technical and scientific character, and its role is to develop research and technological packages and to transfer innovation processes to the agricultural sector.	Will be responsible, with IAvH, to develop a land-use model for agricultural landscapes and the generation of the respective guidelines for their adoption by producers and decision makers.
Governor's Offices of Arauca, Casanare and Vichada departments	Departmental governments have autonomy for planning and promotion of economic and social development within their territory in accordance with the terms established by the Constitution. Departmental governments exercise administrative and coordination functions and have an intermediary role between the Nation and municipalities.	Will ensure coordination with municipal territorial entities within their jurisdiction and coordinate the participation of the Departmental Secretariat to facilitate the development of the project.
Selected municipal governments of Arauca, Vichada and Casanare	Municipalities have the function of providing public services as determined by the law, of building works required by local progress, of managing the development of their territory, promoting community participation, the social and cultural development of their inhabitants, and to fulfill other functions as may be assigned by the Political Constitution and laws.	Will ensure consistency between project interventions and municipal policies. Will benefit from improved land-use planning and information management.
Academia	Regional universities, agricultural technical institutes, SENA, among others.	May participate in tender processes to carry out development of training programs and project interventions.
Local and Indigenous Communities	Local and indigenous communities of the areas of influence and indigenous communities' representatives.	Direct beneficiaries, subject to support through training and capacity building programs.
Social organizations in the areas of influence	Natural Reserves of the Civil Society: private protected areas established for conservation of natural ecosystems.	Direct beneficiaries of project, since they are subject of support to registration processes and training plans for development of management plans and effectiveness evaluation of

		their areas.
	Agricultural and rural producer associations. Provide guidelines and technical assistance producers in respective sectors.	Will be partners in implementing connectivity agreements.

Key results

8. Project Development Objective Indicators proposed for the project are as follows (please refer to Section VII for detailed Results Framework):

- Ecological representation in Orinoquia defined in land-use planning (Yes/No);
- Existing protected areas and key biodiversity (ha);
- Area in productive landscapes under "connectivity agreements" (ha),

Project Components

9. The proposed project will be implemented through three components, which are described in detail, as follows.

Component 1. Effective Integration of Environmental Considerations at Appropriate Scales in Territorial and Sector Planning

10. **The lack of up-to-date and accurate information on biodiversity and ecosystem services leads to territorial and municipal land-use planning instruments that do not sufficiently reflect environmental criteria.** A need has been identified to refine the agricultural frontier of the Orinoquia, as well as other land-use planning instruments such as the EMS so they effectively integrate up to date and accurate biodiversity and ecosystem services information at the municipal, departmental and regional levels, to guarantee ecological connectivity, and the inclusion of environmental determinants in the planning and decision making processes for the development of a landscape based planning model. Component 1 will focus on generation of accurate biodiversity and ecosystem services information at the landscape level (component 1.1) and will finance activities required to guarantee the inclusion of this information into territorial and sector planning processes of the agricultural sectors (comp. 1.2.).

Subcomponent 1.1 Generation and Information Management of Biodiversity and Ecosystem Services for Territorial and Tectoral planning

11. **Regional environmental authorities and local and regional entities require managing information on sustainability, biodiversity and ecosystem services, with the right specifications, so that it can be integrated in** territorial planning and sectoral management at regional and local levels. In large part this occurs because there is a lack of consensus of what are the key indicators and variables related to sustainability, biodiversity and ecosystem services in the territorial planning and management processes of the Orinoquia. Another aspect to highlight is that key topics do not have the right specifications for taking this type of decisions, such as, for example, (i) there is no

analysis of land extensions and their monitoring at a semi-detailed and detailed level (scales lower than 1:25,000); (ii) biodiversity analyses are not uniform for the whole region, and (iii) there are no dynamic and predictive models of supply and demand for ecosystem services.

12. **Regional Environmental Authorities (Autonomous Regional Corporations - CARs) do not have consolidated information systems** thus impeding interested stakeholders to access the information generated by CARs. This lack of a consolidated information management system also renders impossible interoperability with other information systems generating environmental information at regional and national levels. Existing detailed and semi-detailed information on existing projects is not accessible via any of existing information systems. As a result, potential users of this information (producers, communities, decision makers, private companies) have little knowledge about available information for their decision-making.

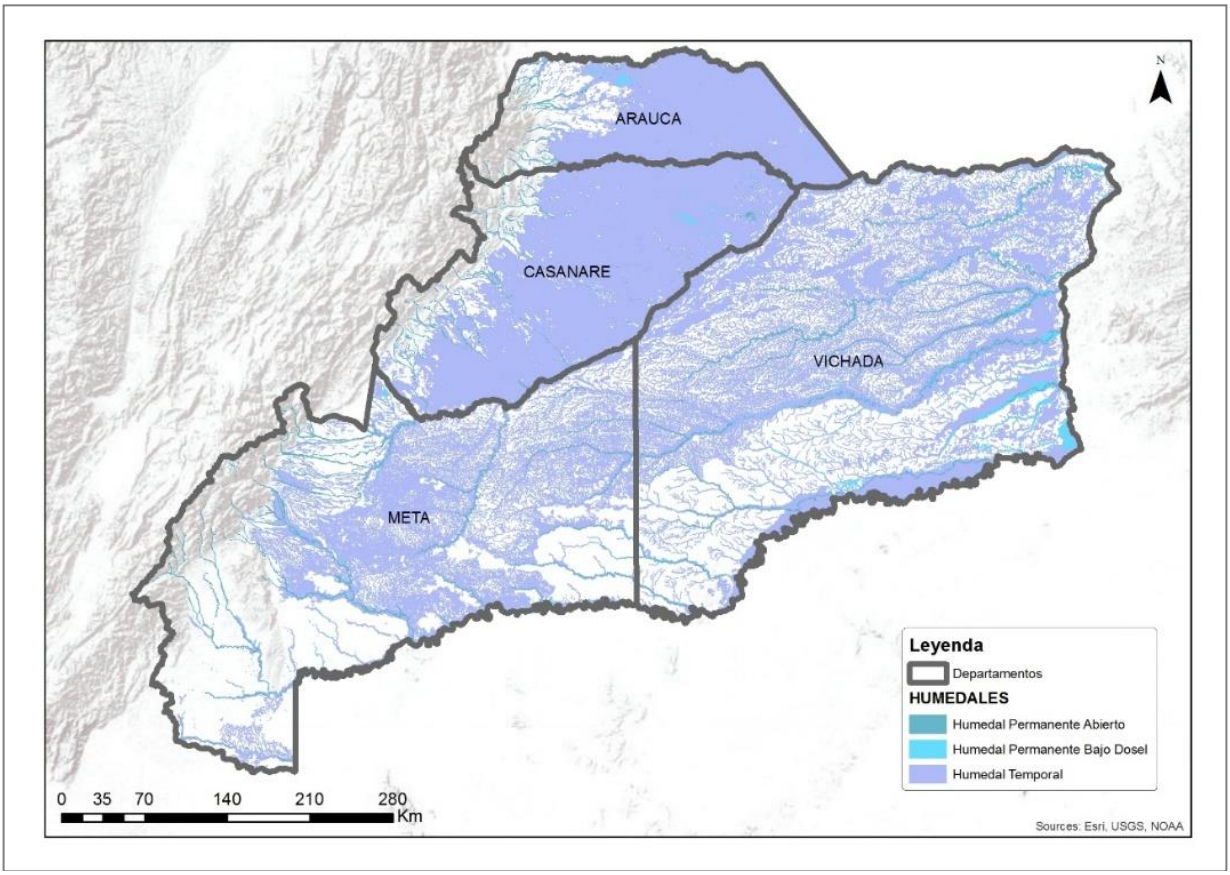
13. **This subcomponent therefore seeks to strengthen generation, management and access to information** on biodiversity and ecosystem services processes, on the basis of the information generated by environmental authorities and research institutes, in accordance with the indicators defined at the national level and the SIAC's and SIB's information standards:

14. **Generation of information at the regional, local and landscape levels that allows filling information gaps concerning biodiversity and ecosystem services becomes fundamental**, to accurately inform land-use planning for policy and investment decision making. This subcomponent will therefore focus on the (i) identification and delimitation of savannas and wetlands strategic ecosystems to update the Registry of Ecosystems and Environmental Areas (REAA, in Spanish), and the portfolio of Priority Areas for mandatory environmental compensations; (ii) the generation of multi-temporal analysis of land coverage and land-use change in wetlands and savannas at a semi-detailed level (1:25,000), to inform land-use change monitoring; (iii) the assessment of the conservation status of critical species as a key input to integrated landscape management plans and connectivity agreements (comp. 2.2); (iv) the ecological and economic valuation of prioritized ecosystem services, as a basis for design of Payment for Environmental Services (PES), to determine mandatory and voluntary public and private investments, and to inform development of projects that support the financing strategy of HECO (supported through subcomponent 2.3); (v) the identification and mapping of the main water supply basins in the Cinaruco-Cocuy Mosaic; (vi) the continued monitoring of critically endangered species in PNN El Tuparro; (vii) the development of a dynamic land-use model, (viii) institutional strengthening and capacity building for improved information management.

15. **Colombia has made progress at the national level regarding identification and delimitation of strategic ecosystems.** In the case of wetlands, the project will be based on progress led by MADS for definition and delimitation of wetlands in Colombia at a 1:100,000 scale. To adequately inform regional land-use planning, this exercise requires an adjustment at a scale of 1:25.000. According to a previous exercise led by IAvH in 2015, there are three types of wetlands in the region: open permanent, low canopy permanent and temporary wetlands (Figure 2). This exercise indicates that, in the four departments of the Orinoquia there are approximately 10 million hectares of wetlands, composed of open permanent wetlands (502,585 ha), low canopy permanent wetlands (617,223 ha), and temporary

wetlands (9,244,294 ha). The project will contribute to the refinement of the wetland delimitation in the intervention mosaics.

Figure 2.1. Orinoquia Wetlands Map

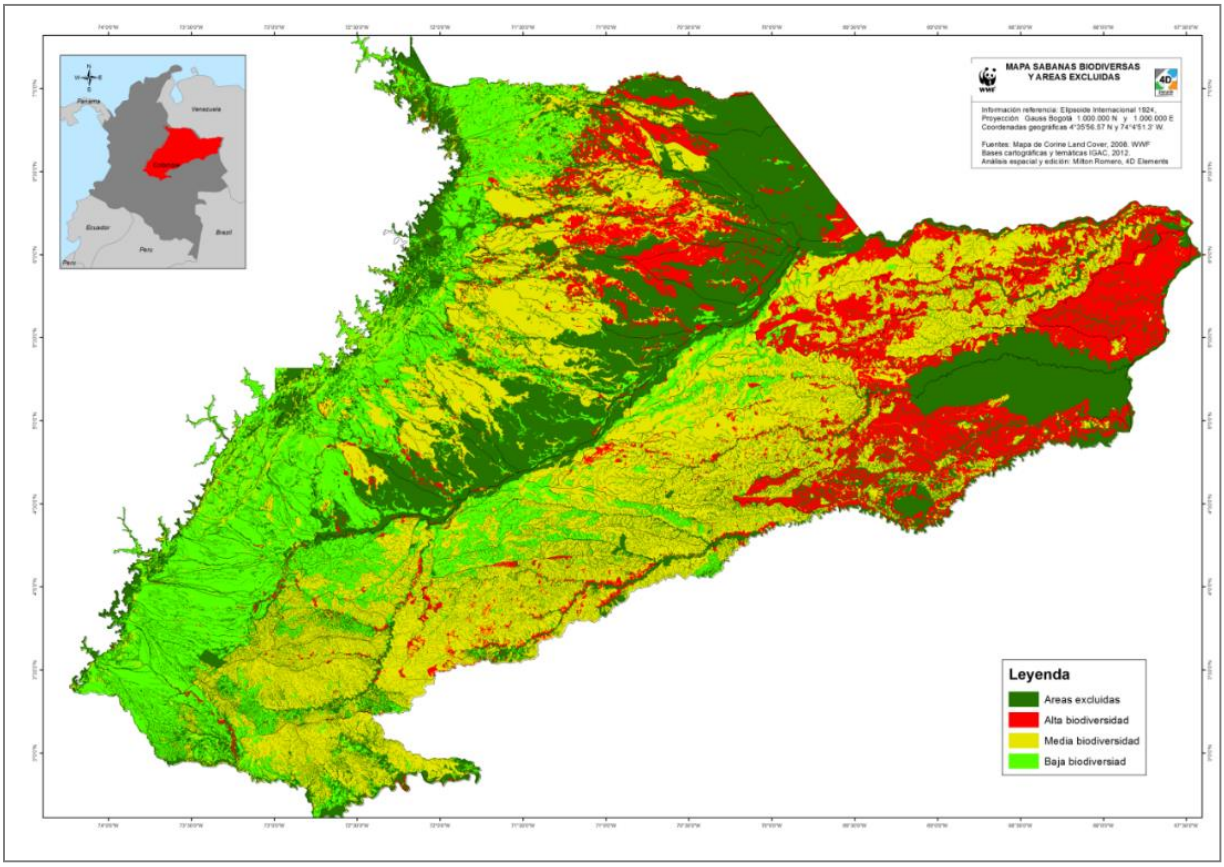


Source: IAVH, 2015[32]

16. **Similarly, in the case of savanna ecosystems, the project will contribute to the delimitation of Orinoquia savannas at detailed scale** (1:25,000). Colombia has little progress in the definition of natural savannas as strategic ecosystems; these have been considered as vacant lands where intervention without restrictions is permitted. A starting point for this delimitation is the biodiverse savannas map (Figure 2.3), produced by WWF in 2011, which identifies that based on biodiversity and carbon value, 33.1 percent of Orinoquia savanna areas should be excluded from any transformation processes [33], whereas 14.4 percent savannas areas have high, and 19.1 percent of savannas intermediate biodiversity values and should be subject only to limited transformation, and 33.4 percent have low biodiversity values and could subject to further analysis at detailed scale be amenable for productive transformation.

[32] http://reporte.humboldt.org.co/biodiversidad/2016/cap4/412/index.html#seccion12
[33] This term refers to all those categories of continuous forests, wetland areas, and different protection categories that should not be subject to transformations.

Figure 2.2 Biodiverse savannas of the Orinoquia



Source. SULU project (WWF, 2011)

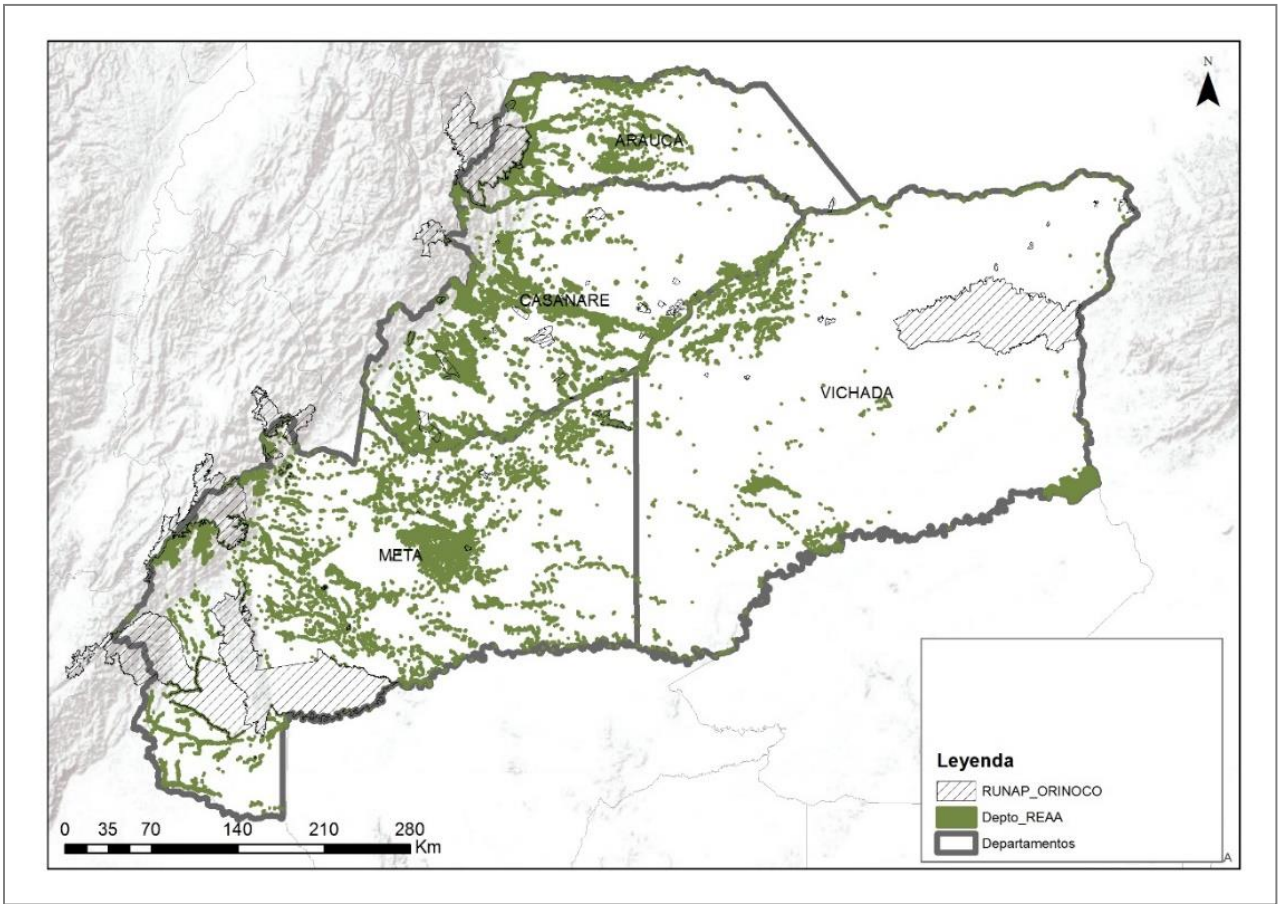
17. **The improved wetland and savanna delimitation will strengthen the Unique Registry of Ecosystems and Environmental Areas (REAA in Spanish)**[34] that has the purpose to identify and prioritize ecosystems and environmental areas of the national territory, where PES and other incentives or interventions aimed at conservation, restauration or sustainable use (for example, mandatory environmental compensation[35]) can be implemented. Currently, for the Orinoquia, only the restoration portfolio identified under the National Restoration Plan for Colombia is reflected in the REAA (Figure 2.4)[36]. The project, through the identification of detailed information on strategic ecosystems will contribute to the strengthening of the REAA for the Orinoquia, thus better positioning the region as a beneficiary of resources through mandatory and voluntary environmental compensation.

[34] Article 174 of Law 1753 of 2015, amending article 108 of Law 99 of 1993, declares in its second paragraph, that the Ministry of the Environment and Sustainable Development should create the Unique Registry of Ecosystems and Environmental Areas (REAA), finally regulated by resolution 0097 of 2017

[35] The above-mentioned law establishes the compensation requirement (on an area basis) for residual impacts generated by development projects. According to this law, compensation actions should occur after appropriate prevention and mitigation measures (avoid, correct, and mitigate) take place. The overarching objective is to produce zero net loss of biodiversity. Compensation plans need to be developed following the Manual for the Assignment of Compensation for the Loss of Biodiversity (MACB, for initials in Spanish).

[36] MADS. 2015. National Restoration Plan: ecological restoration, rehabilitation and recovery of disturbed areas. Ministry of the Environment and Sustainable Development.

Figure 2.3. Unique Registry of Ecosystems and Environmental Areas (REAA)



18. **Colombia has developed a robust Forests and Carbon Monitoring System (SMByC) that allows for detection of changes in forest cover, managed by the Institute for Hydrology, Meteorology and Environmental Studies (IDEAM)**. IDEAM is now working on improving its capacity to monitor changes in other natural ecosystems. The project will support this process through development of multi-temporal analyses for land use and land cover changes in wetlands and savannas of the project intervention area, combining remote sensing/ satellite image analysis, geographical information systems (GIS) and statistical analysis.

19. **Management of productive landscapes will be complemented by endangered species management,** by working with local stakeholders on integrating guidance from endangered species management plans into their productive activities. To this end, the project will contribute to the definition of areas and corridors that require concerted management with producers, ranchers, indigenous peoples and local settlers, for the conservation of large mammals such as the jaguar, puma, tapir and spotted paca, among others. In addition, the project will support interventions that support adoption of conservation strategies to reduce the rancher – jaguar conflict in Cinaruco DNMI.

20. **Important initiatives are underway to develop dynamic spatial models that analyze land-use sustainability in productive landscapes or the Orinoquia.** The Alexander von Humboldt Biological Resources Research Institute (IAvH) advances in the development of a model that allows to analyze the impact of productive interventions and

agro-industrial developments on the provision of ecosystem services (water, soil, carbon) in the Meta highlands. This model is being developed in partnership with the Colombian Agricultural Research Corporation (Agrosavia) and EAFIT University, with contribution from the Corporation for the Sustainable Development of the Special Management Area La Macarena (CORMACARENA). The project will contribute to replicate, adapt and validate this model to the selected project intervention areas. The results of this modeling exercise will be a fundamental input for the development of technical guidelines that incorporate biodiversity conservation and the provision of ecosystem services, and to ensure functional connectivity and landscape resilience. These guidelines will be the basis for the connectivity agreements to be developed in sub-component 2.2. It is expected that this model will be institutionalized through the IAvH and Agrosavia alliance.

21. **Finally, under this sub-component, the project will support capacity strengthening for proper information management, access and use** for the territorial land-use planning through: (i) the development of an information management protocol for Regional Autonomous Corporations (CAR) and territorial entities for the management, systematization and migration of information and data to the Biodiversity Information System (SIB), with the corresponding training plan, (ii) capacity building in Geographic Information Systems (GIS) to support environmental zoning processes, both for CARs and territorial entities, (iii) the design and implementation of a training plan for the use of biodiversity and ecosystem services information for key users (territorial entities, private companies, community action committees, agricultural schools, indigenous authorities, farmer communities, product associations, etc.). The development of capacity building will be carried out with support of regional academia, and the National Learning Service (SENA).

Subcomponent 1.2 Integration of Biodiversity and Ecosystem Services in Territorial and Sector Planning

22. **Under this sub-component, the project will support the development of important land-use planning instruments and ensure their alignment with information generated in subcomponent 1.2**. These key inputs to integrated land-use planning include: (i) refinement of the agricultural frontier for the selected mosaics, and (ii) the development of the municipal Ecological Main Structure (EMS) for municipalities in the project area that develop POTs during the project implementation timeframe, including the adjustment of the methodology for the development of the EMS at the regional and municipal scale, development of the EMS at the municipal level, in the municipalities of Fortul, Puerto Rondón, Saravena and Tame (Arauca), and the support to local authorities in preparing the legal documentation for the adoption of the EMS by Municipal Councils for official adoption in their respective POTs; and (iii) the development of a training plan in territorial planning aimed at public and private stakeholders such as CARs, municipalities, governor's offices, sectors and local communities.

23. **The project will support the refinement of the agricultural frontier for the region of the Orinoquia (at scale 1: 25,000),** which implies financing the technical and normative process for the detailed definition of the agricultural frontier in the project area in the Cocuy-Cinaruco Mosaic, with special emphasis on the delimitation of savannas, wetlands, and their buffer areas, and with the participation of key stakeholders (including women and women's groups representatives) from local, regional and national entities. The project will also promote adoption of this agricultural frontier definition through normative process, and its inclusion in the POT of the four municipalities in the municipalities of the Cocuy-Cinaruco Mosaic, as well as the Development Program with a Territorial Approach – PDET Tame (Cocuy-Cinaruco Mosaic).

24. **The project will support development of a harmonized methodology to guide municipalities in the definition of their EMS**. The EMS is generally viewed as a means of enhancing biological connectivity in rural and

natural landscapes, as a top-level planning instrument. The emergence of the EMS as a planning tool in Colombia represents an opportunity for integrated landscape management, especially in production-conservation landscapes such as the Orinoquia. However, an integrative conceptual framework has yet to be developed that helps guide municipalities to comply with the legal obligation to define their EMS, and more importantly, to inform rural, land, infrastructure and other planning processes in defined territories. The project will contribute to the development of this general framework (to be applied at the regional level), and to the development of EMS in four municipalities (Fortul, Puerto Rondón, Saravena, and Tame) that will update their POT during the implementation of the project.

25. **The methodological adjustment of the EMS at the municipal level must:** (i) define the analysis unit and the geographical scale (of at least 1:25,000); (ii) identify ecosystems, species and ecosystem services of critical importance; (iii) select the set of criteria and indicators that allow measuring the identified ecosystems, species and ecosystem services; (iv) perform qualitative, quantitative and spatial analysis of the set of selected criteria and indicators; (v) define, and spatialize the components of the ecological structure (for example, in terms of core areas, corridors, and sustainable use areas); (vi) validate and adjust results; and (vii) propose the normative process of EMS adoption.

26. **The methodology development will be carried out in a participatory manner**, ensuring the involvement of key stakeholders, including Regional Autonomous Corporations (Corporinoquia and Cormacarena), MADS, MADR, Natural National Parks of Colombia, research institutes, national and regional higher education institutions, regional and local social and non-governmental organizations, civil society representatives, community representatives, women, and youth, among others. In spaces such as workshops, meetings of experts and regional fora, a methodological framework for the definition of the EMS that considers the region's specificities, will be consolidated. The participatory construction process will be documented in detail, constituting an input to further consolidate DNP's OT Kit so it can be easily replicated in other municipalities in the region.

27. **The project will develop and implement a training program for key stakeholders** in partnership with academia and research institutes**,** in integrated territorial planning that considers biodiversity and ecosystem services criteria,; this training program will be coordinated with the "KIT OT" platform, managed by the National Planning Department – DNP, "a tool to support municipal and departmental governments in the review and design of the new generation of territorial management instruments". The beneficiaries of this program will be public entities, environmental authorities, representatives of agricultural, livestock and forestry industries, and local communities, ethnic minorities, women, youth and civil society organizations.

Component 2. Landscape Management for Connectivity and Resilience in Priority Biodiversity and Ecosystem Services Areas

28. **This component is aimed at contributing to the ecological functionality of priority landscapes through their integrated management**, enhancing the resilience and connectivity of critical areas for biodiversity and ecosystem service provision, with emphasis on the maintenance of water regulation, and the restoration of degraded and fragmented landscapes. Interventions will focus on natural (*in situ* conservation strategies), and semi-natural and transformed landscapes (productive areas), promoting the adoption of an Integrated Landscape Management (ILM) approach by public and private actors, in coherence with the regulations and territorial and land use instruments. This component will therefore, i) strengthen management of protected areas, including the declaration of new ones (Subcomponent 2.1), ii) promoting sustainable economic activities in production-conservation landscapes

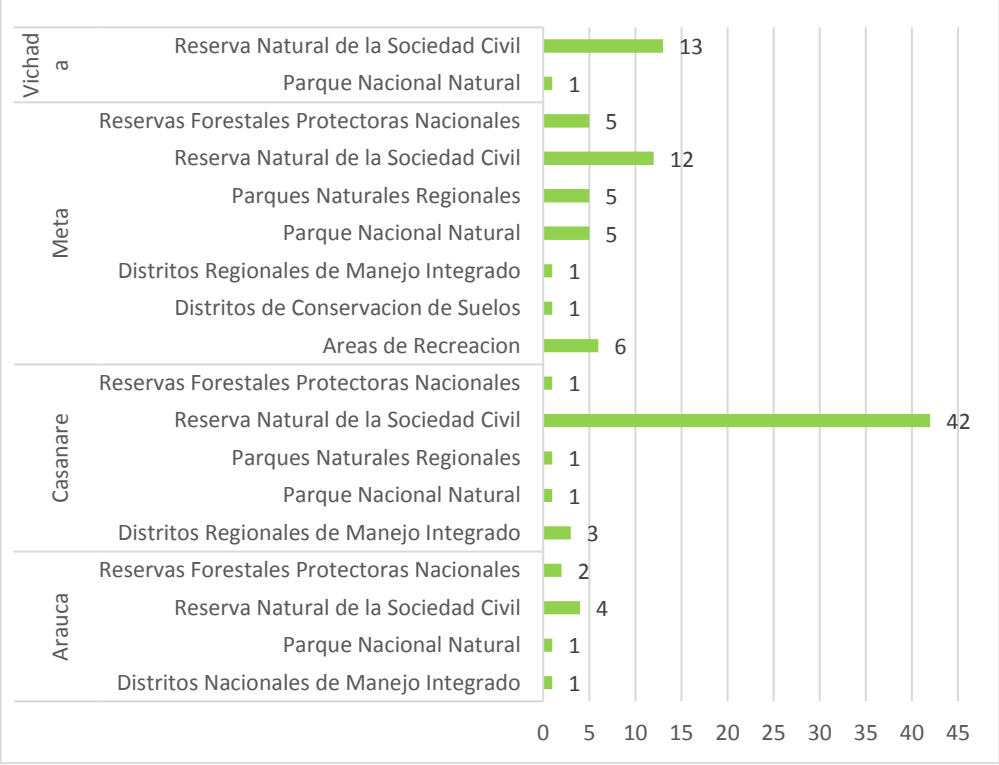
(Subcomponent 2.2), iii) and the development of financial instruments that incentivize these economic activities (Subcomponent 2.3).

Subcomponent 2.1 Strengthening Management of Critically Important Areas and the Protected Areas System at National, Regional and Local Levels

29. **The region of the Orinoquia is one of the regions with the lowest representation of its ecosystems in the National System of Protected Areas (SINAP),** even though the region represents 35 percent of the national territory, it only represents 8 percent of the SINAP. Therefore, the project, through this sub-component, will contribute to the strengthening of the National and Regional System of Protected Areas, including the implementation of existing management plans for protected areas, strengthening the infrastructure of existing protected areas and support of the declaration process of a new protected area. The project will strengthen both public and private protected areas.

30. **The System of Regional Protected areas (SIRAP) is still in consolidation**; there are a total of 105 protected areas of a national, regional and private level, equal to 2,880,000 hectares. By departments, the one of the greater area proportion which is within some category of protected area is Arauca, with 27 percent, followed by Meta with 18 percent, Vichada, with 6 percent, and finally Casanare with 3 percent. However, with respect to the number of total areas by department, Casanare has a total of 48 protected areas, of which 42 are private Civil Society Natural Reserves (RNSC for Spanish acronym), followed by Meta, that has a total of 35 protected areas, of which 12 are RNSCs, Vichada has 14 areas, of which 13 are RNSCs, and Arauca has 8 protected areas, of which 4 are RNSCs. This means that 67 percent of protected areas in the region correspond to private natural reserves (Figure 2.5).

Figure 2.4. Protected areas in the Orinoquia region (by Department)



Source: RUNAP, 2018

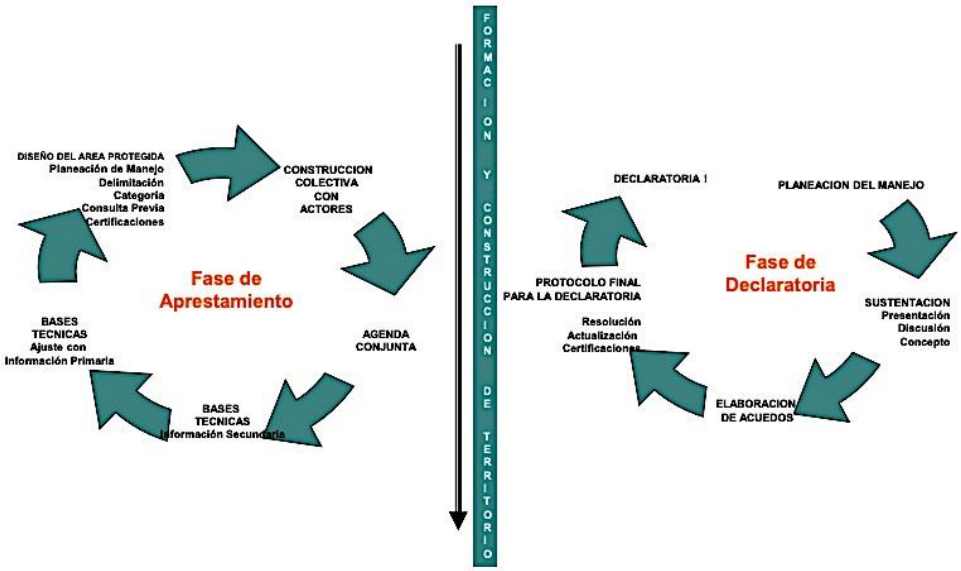
31. **The project will therefore strengthen the SINAP and the SIRAP, complementary conservation strategies (such as the private), and territory governance processes through,** (i) support for the governance process in the declaration process of the national protected area: Savannas and Wetlands of Arauca (ii) support to the owners of private natural reserves in the processes and procedures necessary for their registration with the RUNAP, (iii) formulation of new management plans, and the implementation of priority interventions defined in management plans of existing national and regional protected areas, and of complementary conservation strategies; and (iv) support to governance and socio-environmental conflicts resolution processes.

32. **The project will support the declaration process of the "Wetlands and Savannas of Arauca" national PA**. This PA includes an estimated area of 99,577 hectares (an area that can be modified during the consultation process) and is located in the Cocuy – Cinaruco Foothill Mosaic, in the department of Arauca, in the municipalities of Arauquita, Arauca and Puerto Rondón. The consists mostly of savanna ecosystems (54 percent of the area), natural and gallery forests (25 percent), and a broad variety of aquatic ecosystems, including the rivers Lipa, Ele and Cravo Norte. In this area, 635 plant species and 471 fauna species (including otters, tapirs, river dolphins, the Orinoco crocodile and Orinoco ducks), are registered. The area also includes 15 types of ecosystems, most without representation in the SINAP. There are some relicts of tropical dry forest in the area, with the unique feature of these forests being exposed to long flooding periods. This unique feature has made this area a priority for conservation and research. More specifically, the project will support consultation and validation related activities that are part of the national protected area declaration process[37] (see figure 2.6). This includes, socializing the intention of PA declaration with affected stakeholders, gathering and validation of data to inform delimitation of the PA (preparation phase), consultations on the PA declaration document and development of agreements (declaration phase). These concertation and consultation processes require organization of meetings and workshops, as well as the mobilization of stakeholders[38] to the workshop/ consultation venues.

[37] http://www.parquesnacionales.gov.co/portal/wp-content/uploads/2013/08/Ruta-para-la-declaratoria-de-Nuevas-Areas-final.pdf

[38] These include: National Parks, the Governor's Office of Arauca, municipal authorities of Arauca, Arauquita, and Puerto Rondón, themMunicipal Ombudsman Office of Arauca, Corporinoquia, MADS, local organizations including Orinoquia Biodiversa Foundation – FOB, ASOJUNTAS, ASONALCA, ASCATIDAR, community committees of 38 rural areas: Feliciano, Caracol, Bogotá, Cabuyare, Matal, de Floramarillo, Maporillal, Las Plumas, Las Monas, Merecure, El Socorro, La, Bendición, San Román, Los Caballos, Mata de Gallina, La Saya, El Rosario, Becerra, Altamira, La Pastora, Selvas del Lipa, San José del Lipa, La Conquista, Manantiales, La Comunidad, Cañas Bravas, Caño Colorado, La Conquista, Caño Salas, Maporal, (Arauca); Filipinas (Arauquita); Normandía, El Progreso, La Esmeralda, El Paisaje, Maporal (Puerto Rondón) Buenos Aires, El Corozo and Los Laureles (Cravo Norte), San José del Lipa Indigenous Reservation and La Vorágine Indigenous Reservation.

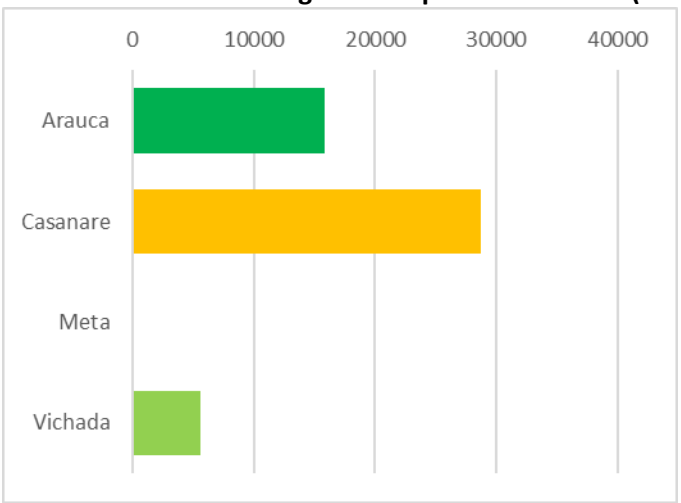
Figure 2.5. Protected Area Declaration Process SINAP



Source: PNN, MADS, WWF 2012.

33. **The project will also support the registration of new RNSC in the RUNAP,** by providing training and guidance to owners of private lands that aspire registration. To date, there are 48 RNSC in the registration process at the regional level, 33 in the department of Casanare, 5 in the department of Vichada, 6 in the department of Meta and 4 in the Department of Arauca. These Reserves add to approximately 50,312.82 hectares (Figure 2.7).

Figure 2.6. Area (hectares) of RNSC that are in the registration process in SINAP (I Semester 2018)



34. **The project will also support formulation and implementation of management plans for national and regional PAs, and for complementary conservation strategies**, including, (i) formulation of guidelines for

environmental management for *El Tuparro* Biosphere Reserve; (ii) formulation of the management plan for the National Forest Reserve of the High Basin of Satocá River, Arauca; (iii) supporting the implementation of the management plan of El Tuparro National Park, by funding the construction of infrastructure for tourism (cabins), the acquisition of vehicles and /or motor boats to improve the performance of park rangers; and (iv) logistics, operational supply and goods for establishment of the office and headquarters of the newly created PA of DNMI Cinaruco, (v) support to the implementation of POMCA for Bita river in line with the Bita River Ramsar management plan.

35. **The project will support overall environmental governance aligned with regional environmental policies and plans** through (i) support to consolidation of the Regional Centers for Environmental Dialogue (CRDA)[39] designed to prevent and reduce socio-environmental conflicts; (ii) support to the logistics and operation of the Bita River Basin Council; and (iii) support to the communication strategy for governance developed under the GEF SINAP Project, including media and communication pieces aimed at raising awareness around the benefits of biodiversity and ecosystem services, their contribution to production systems, the environmental integrity of the region and the country.

Subcomponent 2.2 Sustainable Management for Resilient and Connected Productive Landscapes

36. **The Conpes 3797 for the Altillanura, the ZIDRES law and the delimitation of the agricultural frontier promote large agro-industrial projects for the region**. Even though agricultural planning has started to consider some environmental considerations (restrictions on use in protected areas and strategic ecosystems, such as páramos), pressure persists on natural ecosystems with high biodiversity values, especially seasonal ecosystems such as the savannahs of Arauca and Casanare, and the altillanura savannahs of Vichada, perceived as “vacant” for any type of development or productive intervention. This sub-component will therefore support management of biodiversity at the level of producers and agri-business companies.

37. **This Sub-Component will finance the piloting of Integrated Landscape Management (ILM) approaches in productive landscapes** (i.e. establishment of corridors in private lands) according to indicators and technical guidelines for ecological land use management and key information generated under in Component 1.1. Interventions will focus on (i) the development of sectoral connectivity agreements for productive and resilient landscapes, jointly with and for adoption by producers, producer associations, and private companies in forestry (native, and introduced), and livestock landscapes in the two selected Mosaics, as well as rice and cacao landscapes in the Cocuy - Cinaruco mosaic; (ii) the formulation and implementation of a sustainable fishery management plan in coordination with the National Authority of Aquaculture and Fisheries (AUNAP) and Corporinoquia; (iii) the implementation of ecological restoration activities defined in the PDET Arauca subregion; (iv) strengthen enterprises, local operators, the National Natural Parks Unit, and private natural reserves, to broaden their sustainable tourism offer in the two selected mosaics. The intervention will include support to the certification of transects, paths and river segments by the Ministry of Tourism and the National Tourism Fund (FONTUR) as providing sustainable tourism services; and (v) capacity strengthening activities.

38. **The connectvity agreements will be developed as a participatory process among the stakeholders involved in livestock, cacao and rice production** to get to a common understanding of resilient productive landscape, taking into account the social, cultural, economic, productive and environmental values that define the identity of the

[39] http://www.minambiente.gov.co/index.php/noticias/4214-arrancan-centros-para-el-dialogo-ambiental-en-colombia

landscape. This implies a joint definition of a set of goals for emission reduction, biodiversity protection and connectivity, reduction of deforastation, restoration of degraded lands, slope stabilization, fire management, water source protection, among others, and overall key performance indicators. The project will also ensure that practices identified in these agreements will be mainstreamed into extension services provided by producer associations and the national extension service system, to support producers in adopting these agreements at the farm level. Furthermore, the project will promote incentives for adoption of these practices (subcomponent 2.3) and tools to monitor sustainable productive practices established in the agreements. Additionally, as part of the process of developing the agreements, it will foresee capacity building to livestock, dairy, cacao and rice producers for farm level planning with a landscape resilience and connectivity vision.

39. **Complementary to the integrated management of terrestrial productive landscapes, the project will generate technical guidelines for integrated management for hydrobiological resources of commercial interest,** with emphasis in the Bita- Tuparro Mosaic. More specifically, the project will support the formulation and implementation of a sustainable fishery management plan in coordination with the National Authority of Aquaculture and Fisheries (AUNAP) and Corporinoquia, for fish species of subsistence, commercial, ornamental and recreative interest. This management plan includes data and guidelines on population status, fishing gear use, sustainable resource use and site restrictions.

40. **Finally, the project will support ecological restoration of riparian buffer zones, moriche palm systems, and wetlands in the project intervention area,** identified in the Arauca subregion PDET (covering municipalities of Arauquita, Fortul, Saravena and Tame). The project will finance the operation of nurseries, the purchase of raw material, the generation and transportation of plant material for planting processes, and other materials required for restoration activities development (fish hatchery insulation, riverside buffers, etc.).

41. **Additional interventions will focus on capacity-strengthening activities for local stakeholders, with specific attention to women participation, for the formulation and adoption of**: (i) ILM guides for production-conservation approaches validated in the productive rice, forestry, cacao and livestock landscapes, in the prioritized mosaics; (ii) participatory monitoring systems for sustainability and ecosystem services in productive landscapes, with protocols and accountabilities for their implementation at landscape and farm scale. These activities will be promoted through intersectoral agreements (with producer associations) and dialogues conducted in the framework of the OSIL Program, for example in the context of the Tropical Forest Alliance (TFA 2020).

Subcomponent 2.3: Strengthening Financial and Non-Financial Mechanisms for the Sustainable Management of Important Areas for Biodiversity and Ecosystem Services

42. **The lack of financial planning tools and of capacity to apply for financial instruments (credits, royalty funding programs, incentives) for conservation are one of the technical barriers for the financial sustainability of protected areas** and of critical importance for the conservation of biodiversity and ecosystem services in the Orinoquia region. For this reason, the project will promote the strengthening of capacities to leverage resources for territorial entities, environmental authorities, civil society and producer associations to strengthen financial literacy for both, protected area management, and management of sustainable productive systems in line with the planning of the territory. The subcomponent will support the following interventions: (i) the support to formulation of at least two projects (one per mosaic) to be submitted to the General Royalties System and other potential funding sources; (ii) the development of incentives for sustainable transformation in key value chains; (iii) support to development of and

establishment of new, biodiversity-based value chains, (iv) capacity building for access to production-conservation finance.

43. **The project will support the development of projects** to be submitted to the General Royalties System which, according to Article 361, needs to ensure that revenues will be used to finance projects for the social, economic and environmental development of territorial entities. In doing so, the project will territorial entities and regional environmental authorities in developing large, transformational projects for sustainable production at the landscape level.

44. **The project will finance the adaptation and validation of the Financing Instrument for Sustainable Productive Transformation (ITPS).** The ITPS is an innovative financial mechanism that aims at improving access to financing for sustainable production and consists of a combination of concessional credit (low interest rate and flexible repayment), guarantee fund, incentive payments for conservation set-asides, and technical assistance. It aims at financing efficient and sustainable livestock systems that provide ecosystem services while incentivizing conservation in sustainable landscapes. It is currently in a trial phase in the Amazon departments of Guaviare and Caquetá. The project will adjust this mechanism to livestock systems in floodable savannas of Arauca and tropical savannas of Vichada, working on structuring of costs and economic flows with considerations that are specific to these production systems.

45. **Under this sub-component the project will also support the development of sustainable production alternatives based on biodiversity, to help the Orinoquia move towards the consolidation of a regional bio - economy,** contributing to the National Green Growth Policy, and the objectives that Colombia has established in the Chapter: Pact for Science, Innovation and Technology of the PND 2018-2022. The Orinoquia has an untapped potential for biodiversity-based products and sustainable businesses and cooperatives with products like jatropha for biodiesel, native nuts such as *sacha inchi* or *cacay* as a source of edible oils, snacks and cosmetics, non-timber forest products, such as seeds, fruits, bark and others, for handicrafts production, and the extraction of oils, tannins, dyes of forest species for crafts, foods and medicine. The intervention will focus on the identification a regional portfolio of products with a science-technology-and innovation component based on existing regional bioprospecting diagnostics involving key stakeholders (research centers, national and regional universities, Agrosavia) including an international and national market analysis for these products, as well as the identification and (if possible) support to additional steps needed for commercial use of these products (including certification, approvals, patent requirements, among others).

46. **Finally, the project will support capacity building processes focused on access to economic and financial incentives and mechanisms**; through (i) the development of a training plan for the formulation of projects and applications to access funding sources or financial instruments of productive projects; and (ii) a training plan applied to the formulation and access to financial and economic instruments for bio-economy projects. The capacity building will be carried out in partnership with regional academic institutions, and will workshops, diploma courses, virtual courses and customized technical assistance, among others.

Component 3. Project Management, Implementation, Coordination, Communication, Monitoring and Evaluation

47. **This component will finance the Project Implementation Unit (PIU)** to ensure the technical and financial coordination of the operation, capacity-building plans, communication for governance, and project implementation monitoring and assessment at the national and regional level. This includes project management, including financial and procurement management, general follow-up of project results, progress reports production and the implementation of safeguards, including the establishment of an adequate grievance and redress mechanism for the project, which will be developed under this component, and the development of financial and technical management tools. This component will also finance consultants that will be part of the PIU, the operational costs of implementation for the daily operation of the project, training, travel, and operating activities of institutional coordination.

ANNEX 3: Intervention Areas and Maps

COUNTRY: Colombia
Orinoquia Integrated Sustainable Landscapes

A. Intervention area – general characteristics

1. The mosaics "Piedemonte - Cocuy – Cinaruco" and "Ramsar Bita – El Tuparro Biosphere Reserve" have an extension of 2.8 and 3.1 million hectares respectively. They are in the Orinoquia region in the departments of Arauca (87 percent of its extension), Casanare (17.7 percent) and Vichada (30.7 percent). The mosaics cover the capital cities or Arauca (Arauca) and Puerto Carreño (Vichada). The Cocuy Cinaruco Mosaic includes totally or partially the municipalities of Arauca, Arauquita, Cravo Norte, Fortul, Saravena, Puerto Rondón and Tame (in Arauca); and La Salina, Paz de Ariporo, Sácama, Támara Hato Corozal (Casanare); and the Bita – Tuparro Mosaic, the municipalities of La Primavera, Cumaribo and Puerto Carreño (Vichada).

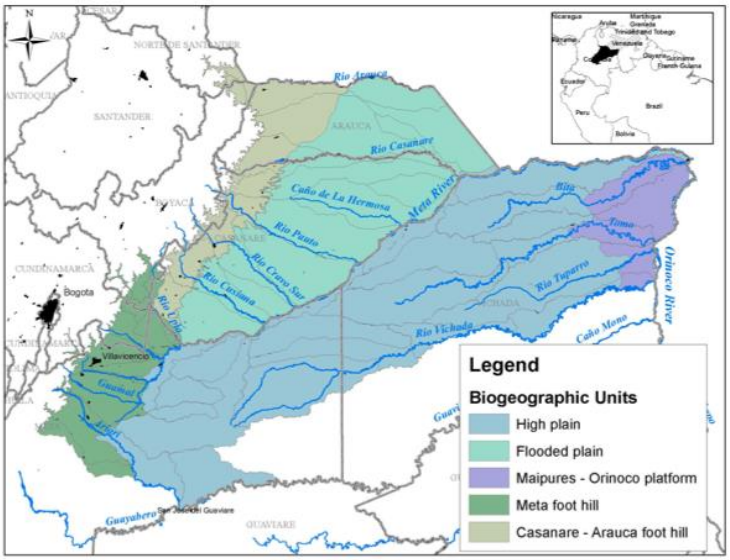
B. General description of the Orinoquia region: environmental aspects

2.The Orinoquia region is one of the five natural regions of Colombia and its determined by the macro-basin of the Orinoco river, is a biome that is characterized by a great plain which is also known as Los *Llanos Orientales* (The Eastern Plains). It is located to the east of the country, bordering the north and east with Venezuela, the south with the region of the Amazon and the west with the Andean region. For the proposed operation, the Orinoquia region will be limited to the territory of 4 departments: Arauca, Casanare, Meta and Vichada.

3.The region consists of four main sub-types "of big landscapes" (Map 3.1):

i. The ***Piedemonte Llanero*** with 3.3 million hectares and located in the foothills of the Andean mountain range, concentrates most of the population (1.2 million) and economic activity in the Orinoquia region. Its soils are fertile, and a mosaic of agricultural activities and natural forest characterizes it. Most of the transport infrastructure of the region has been built in this area.
ii. The **tropical savannas of the *Altillanura*** with approximately 5.1 million hectares, is located between the Meta and Vichada rivers, stretch across the departments Meta and Vichada in central Eastern Colombia. The very low fertility soils is due to a high aluminum content and lack organic matter, calcium, magnesium, potassium, and phosphorus. However, the flat topography is ideal for certain crops, cattle ranching and forest plantations. Riparian forests that intersect the *Altillanura* landscape are very sensitive to the hydrological changes in the region and constitute biological corridors for many species.
iii. The **seasonally flooded savannas** covering the departments of Arauca and Casanare with low and moderately fertile soils are apt for agricultural production, although seasonal rains and floods constrain the types and times of production. In addition, this area with 4.8 million hectares is used for extensive cattle ranching. This landscape is complex and includes various freshwater habitats.
iv. Finally, the ***transitional area Orinoquia-Amazonia*** covers the south of the departments of Vichada and Meta which includes savanna landscape and Amazonian rainforest. In this area (4.7 million ha), cattle ranching, illegal logging and smallholder farming constitute threats to the standing Amazon forests. The Sierra de La Macarena is the transition area among the Andes, Amazonia and Orinoquia regions.

4. The region is considered globally as of high environmental value and climatic importance. Its variety of ecosystems and species are considered key for ecological connectivity, carbon sequestration and water provision and regulation. The *Llanos* are dominated by herbaceous vegetation with patches of shrubs and trees in floodplains forming a mosaic landscape of grasslands, wetlands and riparian forests. These savannas are characterized by having a large diversity of plants, endemic, migratory and rare species. A recent WWF report states that the Orinoco basin has 71 percent of the water and swamps in Colombia, and its home to 167 mammal species, among which 26 species are threatened, 783 bird species and 658 fish species, as well as 2692 flowering plant species[40]. Its aquatic ecosystems (*páramos*, flooded savannas and wetlands) play an important role in regulating the water regime, climate and carbon cycle. These savannas are also subject to a periodic fire regime that usually peaks in the dry season between December and early April and represent a significant portion of burned areas of South America.[41] There is a natural dynamic between carbon emissions and sequestration, while sequestration dominates during the wet-season, emissions dominate during the dry seasons, that are expected to become longer due to intensification of land uses and associated desertification processes. Savanna lands and wetland transformation will have a significant impact on GHG emissions since these changes would influence ecological processes including fire regimes, soil water and carbon storage, and carbon sinks in gallery and Amazonian forests[42].



Map 3.1. Biogeographic Units

[40] World Wildlife Fund Colombia (2014): Identifying Highly Biodiverse Savannas based on the European Union Renewable Energy Directive (SuLu Map)- Conceptual background and technical guidance. WWF Colombia.

[41] Savannas are being considered the most important biomes in terms of fire events in South America. It has been estimated that, between 2000-2008, the savannas of Colombia and Venezuela contribute 25 percent of overall fires on the continent, of which Colombia's savannas contribute 65 percent. See Romero-Ruiz, M. et al. (2010): Spatial and temporal variability of fires in relation to ecosystems, land tenure and rainfall in savannas of northern South America, in: Global Change Biology 16, 2013-2013.

[42] The Orinoquia region has about 2.2 Mio. ha of standing forests. See World Bank/ DNP: Low Carbon Development for Colombia, p.90

C. General description of the Orinoquia region: social aspects

5. For 2019, it was estimated by the National Planning Department (DNP) a total population of 398,000 people in both mosaics, from which 59.5 percent live in urban areas and 40.5 percent in rural territories; 36.9 percent are men and 63.1 percent women (Table 1). It is estimated that in average, 60.3 percent of the urban population and 91.4 percent of rural population are considered poor, according to the national multidimension index. The municipalities of La Primavera and Cumaribo in Vichada are catalogued as of incipient development, and the rest of the municipalities of both mosaics as of intermediate development according to the DNP.

Ethnic communities

6. It is estimated that 30,000 people live in the intervention municipalities, of which 74.9 percent are indigenous, 25 percent afro-Colombian and 0.1 percent raizal[43]. The indigenous population in the prioritized mosaics (22,701 people) is located in 28 reserves with an extension of 240,000 hectares (map 2).

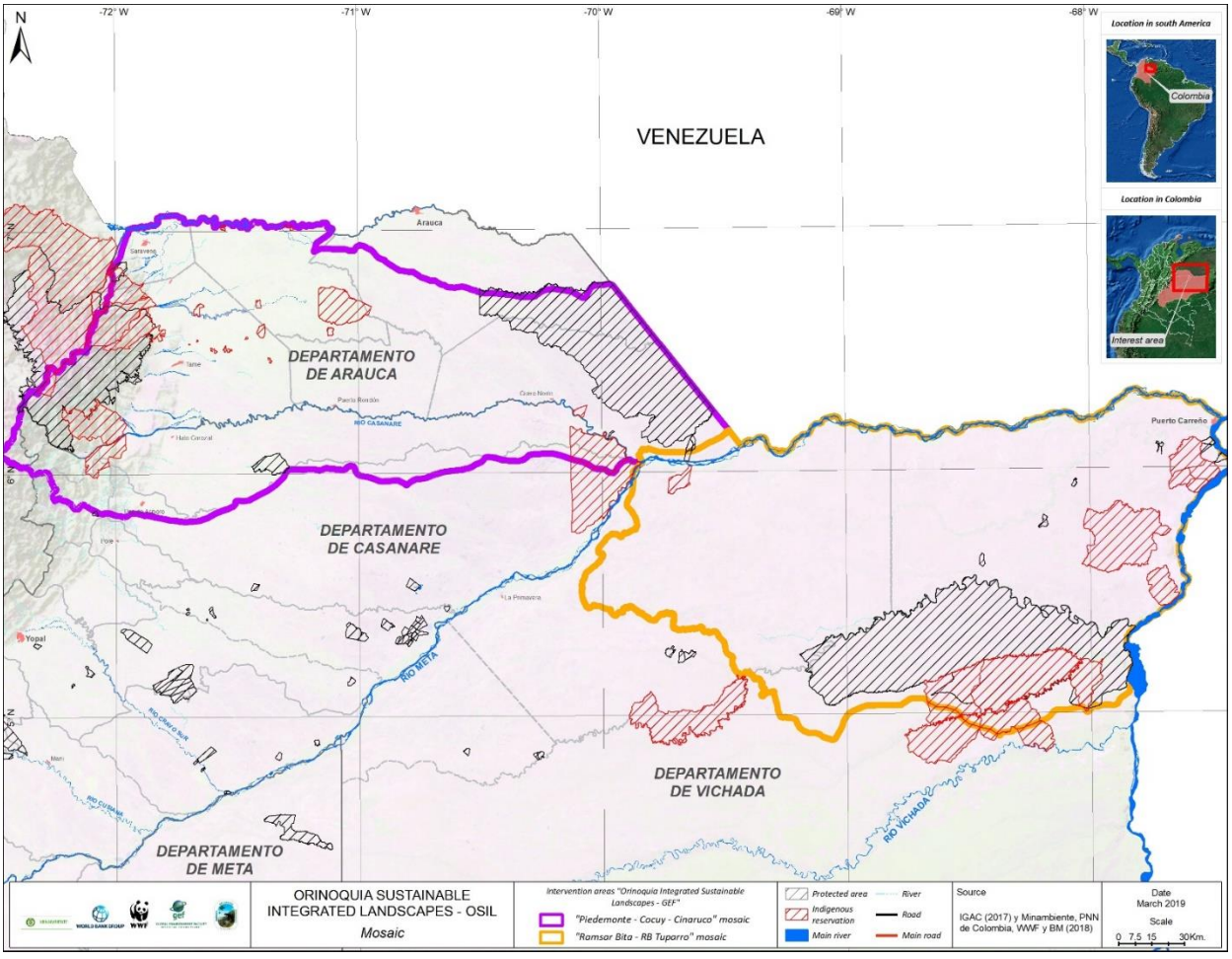
Table 3.1. Population estimates in the intervention departments and municipalities.

		Men	Women	Urban	Rural	Total	Indigenous	Afrocolombia	Raizal	Total
Arauca	Arauca	46.335	46.926	81.245	12.016	93.261	640	2102	3	2.745
	Arauquita	21.513	21.464	20.228	22.749	42.977	0	665	0	665
	Cravo Norte	1.576	1.614	2.286	904	3.190	19	0	0	19
	Fortul	13.306	13.492	14.410	12.388	26.798	668	61	0	729
	Puerto Rondón	1.972	1.848	2.856	964	3.820	1	4	2	7
	Saravena	24.521	24.126	33.361	15.286	48.647	864	2773	0	3.637
	Tame	27.817	26.811	20.549	34.079	54.628	1087	300	14	1.401
Casanare	Hato Corozal	6.893	6.127	5.939	7.081	13.020	1171	21	0	1.192
	La Salina	747	733	658	822	1.480	2	1		3
	Paz de Ariporo	13.205	13.032	19.294	6.943	26.237	925	539	4	1.468
	Sácama	1.064	1.043	1.530	577	2.107	193	13	0	206
	Támara	3.660	3.371	2.331	4.700	7.031	81	15	10	106
Vichada	Cumaribo	20.124	20.366	7.940	32.550	40.490	13778	57	4	13.839
	La Primavera	8.826	8.800	10.148	7.442	17.590	519	357	0	876
	Puerto Carreño	8.830	7.933	14.231	2.532	16.763	2753	657	8	3.418
Total		200.389	197.686	237.006	161.033	398.039	22.701	7.565	45	30.311

[43] Originally from the San Andres and Providencia archipelago.

D. GEF Intervention Area

7. For the identification of the areas of intervention, a set of variables was evaluated in the four departments of the Orinoquia (Meta, Vichada, Casanare and Arauca). These variables included, i) biodiversity and environmental importance of the region; ii) the threats to this biodiversity; and iii) conservation and development strategies, programs and projects taking place in the region. Combining the variables showed that the most threatened areas correspond to the flooded savannas and wetlands of Arauca, the *altillanura* of Meta and Arauca, and the buffer areas of the PNN La Macarena. Finally, overlaying these areas with ongoing private and public initiatives, including the protected areas system of the Orinoquia, the national restoration priorities, the agricultural frontier, Ramsar Sites, Important Bird Areas (IBA), and municipalities prioritized in the peace agreement, the assessment resulted in overlap in three areas, all hosting a national natural park, the PNN El Cocuy, PNN La Macarena and PNN El Tuparro and their correspondent buffer and influence areas. The third set of variables aimed at identifying complementary processes taking place in the territory that could be subject of strengthened intervention thus leveraging resources and having wider impacts for biodiversity conservation and ecosystem services provision.



Map 3.2. Intervention areas. Mosaics (violet, yellow lines), Indigenous reserves (red lines) and Protected Areas (black lines).

8.The assessment of the three sets of variables and their spatial overlap resulted in identification of wo mosaics for priority intervention, where biodiversity plays a key role in ecosystem services provision, which are highly and increasingly threatened, and would benefit from resources to complement and strengthen the impact of other national or regional interventions. The selected mosaics are the following: a) the Bita-Tuparro Mosaic, and b) the Cocuy-Cinaruco Mosaic.

Bita Ramsar Site – El Tuparro Biosphere Reserve Mosaic (Bita-Tuparro Mosaic)

9. Located in Vichada department, this mosaic covers the southeastern part of the municipality of La Primavera, most of the municipality of Puerto Carreño, and the northeastern part of the municipality of Cumaribo, corresponding to the El Tuparro National Natural Park (PNN) and its area of influence. The mosaic tackles the El Tuparro Biosphere Reserve, with a core protected area corresponding to the PNN, and other prioritized areas such as the Bita River basin (Ramsar Site).

10. The mosaic is composed of five different types of ecosystems that go from complex sets of freshwater systems and wetlands, tropical savannas of the *Altillanura* (rocky and sandy), riparian forests, to Guiana highlands formations, known as *tepuyes*. Rivers and riparian forest are considered unique biodiversity corridors that connect the *páramos* and piedmont areas (western Orinoquia), with the Orinoco River and the eastern Orinoquia, which is key for the survival of populations of jaguars, tapirs, deer, foxes, dolphins, migrant fish, among others. The savannahs of Vichada are diverse, sandy, with poor and acid soils, and with important biodiversity of grasses and microbiota, and are connected to the Bita River wetlands that are key for the water cycle functionality in a highly dynamic landscape, with a flooded season that can go up to 5 months, and a dry season that can last the same.

Protected areas and conservation challenges within Bita-Tuparro Mosaic

Bita River Basin (824.535 ha)[44]

11. The headwaters of the Bita are in the savannas of the Orinoquia, and for that reason this river does not have a heavy sediment discharge, making its waters to take a blackish color characterized for a poor nutrient flow, that makes its fish to feed on fruits from the canopy of the riparian forests, that are dropped when changes in the river flow. The ecological integrity of the river is primitive and barely modified by human intervention. The basin possesses a system of wetlands, with more than 5000 creeks and tributaries, that all together run 710km down to the Orinoco river. The presence of river dolphins, Arawanas, turtles, otters and manatees, as well as a variety of fish that support sport, artisanal, ornamental and commercial fisheries, and the recently discovered species of sponges, crustaceans and stingrays, have positioned it as a key biodiversity area and a wetland of international importance, being declared a Ramsar Site in 2018.

12. This immense biodiversity and ecosystem functioning are currently threatened by natural and intentional fires to renew the soils and pastures for cattle ranching, the increase of forest plantations, palm oil crops, pollution

[44] Trujillo, F. y C. A. Lasso (Eds.). 2017. IV. Biodiversidad del río Bita, Vichada, Colombia. Serie Editorial Fauna Silvestre Neotropical. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (IAvH). Bogotá, D. C., Colombia. 349 pp.

from agrochemicals used in these plantations/crops, unregulated tourism, overfishing, deforestation, and in an indirect way, the promotion of national agricultural policies.

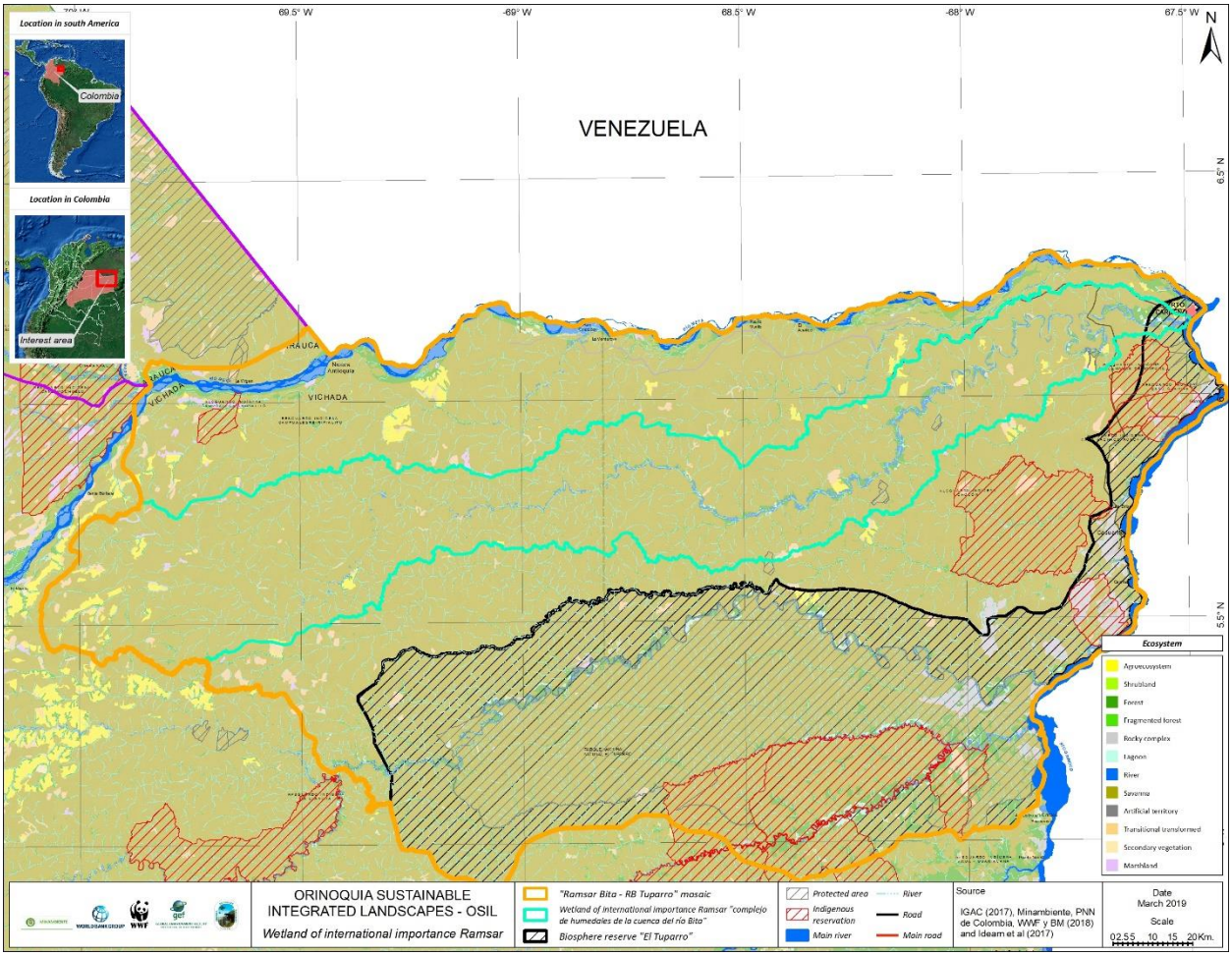
Parque Nacional Natural El Tuparro (561.739 ha)

13. The Tuparro National Park was established in 1970 and declared as a national monument in 1982. It is the core of El Tuparro Biosphere Reserve (918.000ha). This international conservation category aims at fulfilling three main complementary functions: biodiversity conservation, sustainable development and research and education. Both the Park and the Biosphere Reserve are composed by savannas of the altillanura (75% of the Park area), riparian forests, *tepuyes*, and water systems with an extension of almost 360.000 ha, composed by the Orinoco, Vichada, and Tomo rivers, their lakes systems and tributaries.

14. In terms of biodiversity, 828 species of plants have been registered, of those 121 are grasses, shrubs and others located in the savannas. The area also contains more than 500 species of insects, 74 species of mammals, 320 species of birds (estimated), 17 of reptiles, and 229 fish species[45]. The PNN also host semi-nomad communities of the *Sikuani-Guahibo* and *Cuiba* ethnicities, permanent settlements of groups of the *Curripacos* and *Puinaves*, and *Piaroas* communities. Other human groups with presence in the area are hunters, fishers, loggers, and presence of illegal armed groups. Other threats besides illegal hunting and fishing, are illegal crops (coca) and unregulated tourism.

15. The Park and the Biosphere Reserve constitute a key ecological corridor that connects the Orinoquia region with the Amazon Biome (Colombia and Venezuela) (map 3.3).

[45] Villarreal-Leal, H. y Maldonado-Ocampo J. (comp.). 2007. Caracterización biológica del Parque Nacional Natural El Tuparro (Sector noreste), Vichada, Colombia. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. Bogotá D. C., Colombia. 292 p



Map 3.3 Bita – Tuparro mosaic: showing El Tuparro Biosphere Reserve (black lines) and Bita River Basin (green line). Red lines delimit indigenous reserves.

Piedemonte Cocuy - Cinaruco Mosaic (Cocuy-Cinaruco Mosaic):

16. Located in the departments of Arauca and Casanare, it stretches between the eastern section of the PNN El Cocuy and the Cinaruco National Integrated Management District (DNMI). Within the mosaic's borders, there are Natural Reserves of the Civil Society - RNSC, and the "Savannahs and Wetlands of Arauca", in the process of being declared national protected area.

17. This mosaic is considered an important ecological corridor between the highlands of the Andes and the flooded savannas of the Orinoquia, and includes ecosystems associated to the *piedemonte*, the flooded savannas, riparian forests, and rivers and lakes of the Orinoco watershed. The Orinoquia *piedemonte* is a key connector between the *paramo* highland forests, and the productive low lands of the Orinoquia. However, this connectivity is becoming more and more fragile and fragmented, with significant impact on the hydrological cycle in the low lands. Low-land savannas can be under water for more than six months, shaping the livelihoods and economies of local communities. Local communities and producers have adapted to these extreme changes, but larger agro-industrial

development has resulted in wetland drainage, savanna conversion (and degradation), deforestation and biodiversity loss[46].

Protected areas and conservation challenges within Piedemonte Cocuy-Cinaruco mosaic

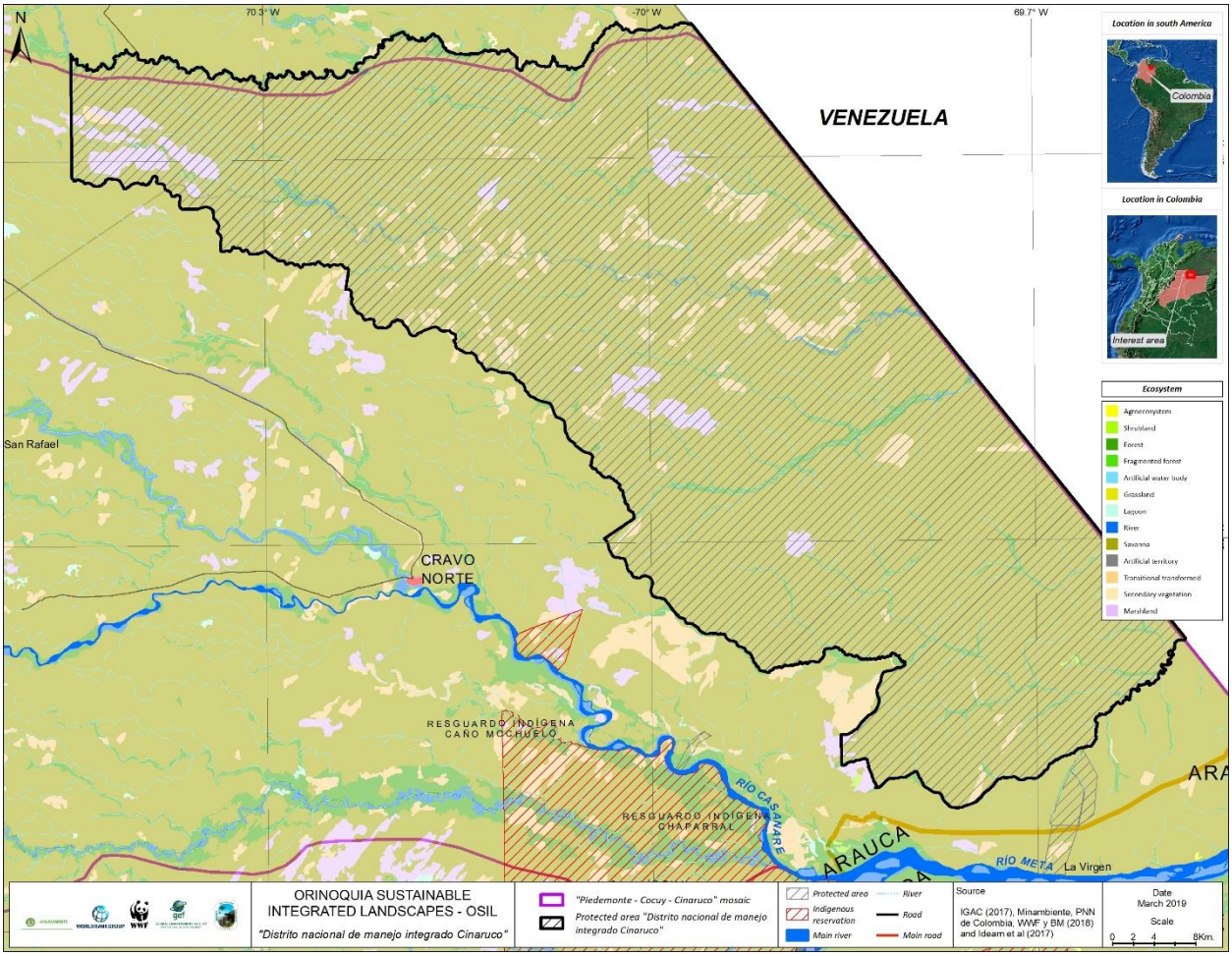
DNMI Cinaruco (332.000 ha)[47]:

18. The National Integrated Management District (DNMI) Cinaruco was declared in 2018. DNMIs are strategic ecosystems that need to be persevered, while their cultural and natural value are available for sustainable use to the local population. The DNMI Cinaruco is considered a strategic area to support the natural dynamics of the flooded savannas and freshwater ecosystems of the bi-national area of Cinaruco-Capanaparo Basin (Colombia-Venezuela). The area holds an impressive biodiversity, including 68 species of mammals, 178 species of birds, 176 of fish, 670 species of plants and 74 species of reptiles. Apart from its species, its flooded savannas, wetlands and freshwater ecosystems, maintain dynamics that provide not only climate regulation benefits, but also support economies focused on fisheries, tourism, pig farming and cattle ranching (traditional practice adapted to local dynamics) (map 4).

19. The creation of this area was also intended at protecting traditional practices and the livelihoods of the indigenous communities (*Wamonae, Yaruro, Yamalero, Maiben-Masiware, Sáliva*) and rural producers settled within their borders.

[46] Gonzalez M.F., Diaz-Pulido A., Mesa L.M., Corzo G., Portocarrero-Aya M., Lasso C., Chaves M.E. y M. Santamaria. (Eds.). 2015. Catálogo de biodiversidad de la region orinoquense. Volumen 1. Serie Planeación ambiental para la conservacion de la biodiversidad en areas operativas de Ecopetrol. Proyecto Planeación ambiental para la conservacion de la biodiversidad en las areas operativas de Ecopetrol. Instituto de Investigacion de Recursos Biologicos Alexander von Humboldt – Ecopetrol S.A. Bogota D.C., Colombia. 408 p.

[47] http://www.parquesnacionales.gov.co/portal/es/las-sabanas-inundables-de-cinaruco-en-arauca-nuevo-distrito-nacional-de-manejo-integrado/



Map 3.4. DNMI Cinaruco in the Cocuy-Cinaruco Mosaic

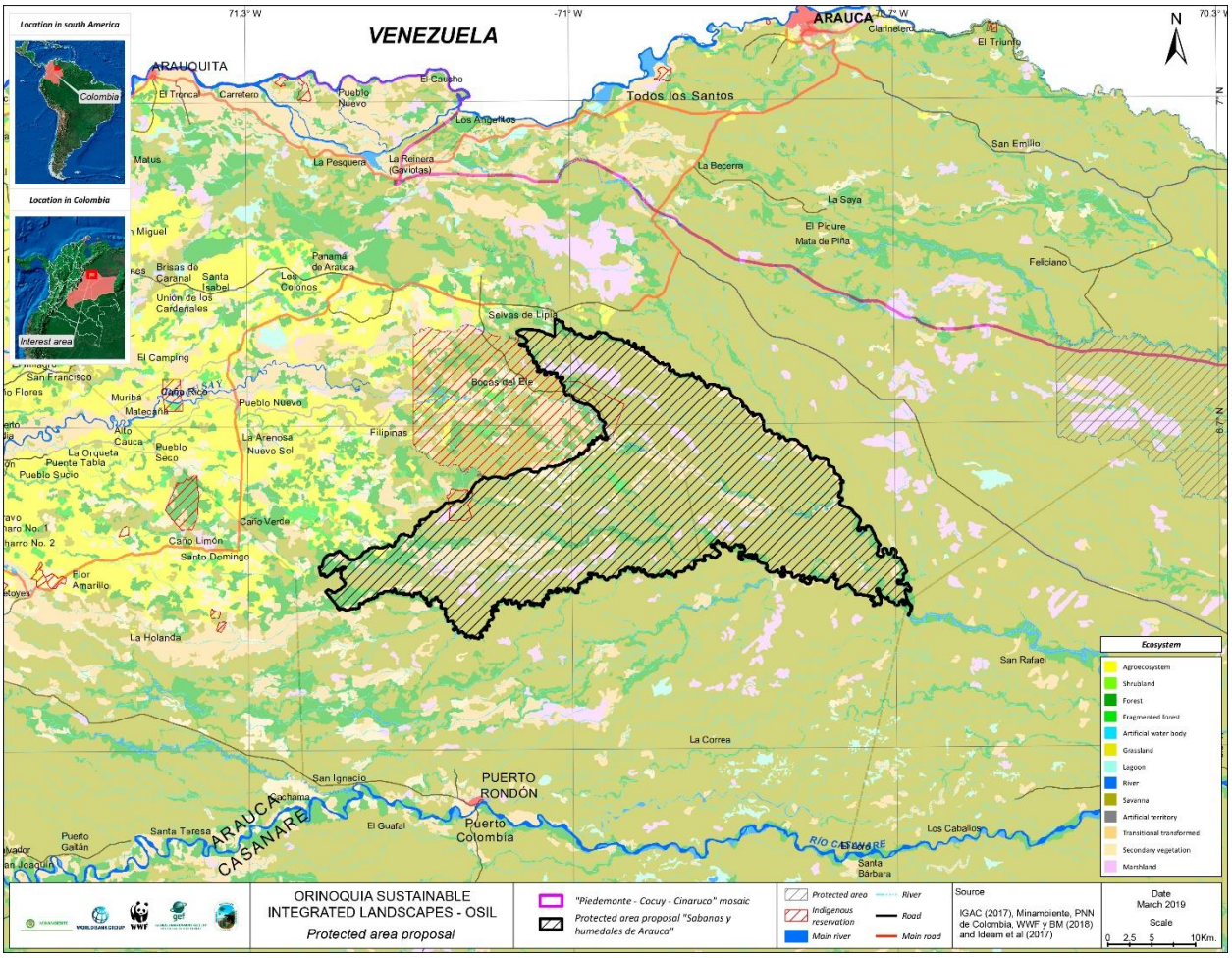
Sabanas y Humedales de Arauca (252.833 ha)*:*

20. This area is in the process of National PA declaration, a process conducted with local communities and other regional stakeholders. The area is characterized by savannas, that cover 54 percent of the area, forests (25.5 percent) and a variety of wetlands and other freshwater ecosystems, including the Lipa River, that originates in the PNN El Cocuy, and the Ele and Cravo Norte rivers. It hosts 635 species of plants and 471 species of fauna, including otters, tapirs, gooses, dolphins and caimans.

21. The area includes 15 types of ecosystems most of them unique and vulnerable, and still unrepresented in the SINAP. The area also hosts relicts of tropical dry forests, similar in composition to those found in the Colombian Caribbean, but with the uniqueness of their exposure to floods. This feature has led to the prioritization of this area for research and conservation.

22. The San Jose de Lipa Indigenous reserve is located within the area, one of the biggest of Arauca with an extension of 3,767 ha (map 3.5). The area is also composed by rural producers and the urban population. The main

threats to the area are related to illegal logging, unsustainable practices of agriculture and cattle ranching, extractive industries, wetlands dissection, and drainage, and pollution due to agro-chemicals.



Map. 3.5. Sabanas and Humedales de Arauca proposed PA. In red lines San Jose de Lipa Indigenous reserve.

ANNEX 4: OSIL – Complementarity BioCF and GEF Projects

COUNTRY: Colombia
Orinoquia Integrated Sustainable Landscapes

1.The Orinoquia Sustainable Integrated Landscapes Program (OSIL), consists of the BioCarbon Fund Initiative for Sustainable Forest Landscapes (BioCF- ISFL) funded "Sustainable Low-Carbon Development in Orinoquia Region Project" and this proposed, GEF funded "Orinoquia Integrated Sustainable Landscapes Project" to guarantee a comprehensive vision for the planning and management of the territory and its different ecosystems. Both projects focus on prioritized municipalities of the Orinoquia region. The GEF initiative will work in the mosaics of Cocuy-Cinaruco (Arauca/Casanare) and the Bita-Tuparro (Vichada), and the BioCF in the mosaics of Vichada, Meta, Casanare and Arauca (map 1). Interventions of both projects have been designed in a way that they complement each other geographically and thematically.

2.OSIL has three main objectives: climate change mitigation, sustainable land use and reduced deforestation, and biodiversity and ecosystem services conservation (diagram 1), through three main components, two of which are shared by the two projects (C 1, C 2) and one that is of the BioCF program (C 3).

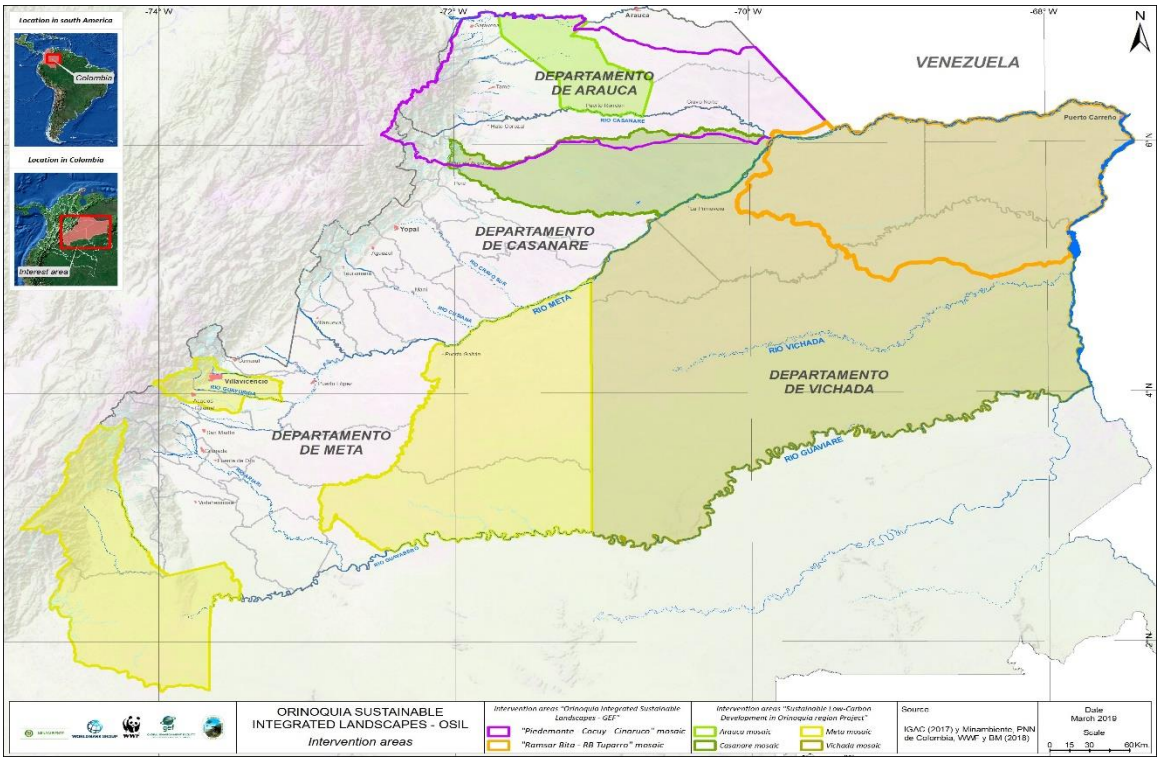
3.In **Component 1, Integrated land-use planning and improved governance for deforestation control**, the GEF operation will contribute to the BioCF through generation of information on strategic ecosystems (wetlands and savannas), ecosystem services and sustainability modeling, land cover monitoring, and the formulation of the regional methodology for the definition of the Ecological Main Structure (EMS), and the definition of the regional agricultural frontier. These inputs will inform BioCF Subcomponent 1.1 on mainstreaming environmental sustainability into land use planning and land tenure (see diagram 2). The GEF project will support the definition of the EMS at a local scale for the municipalities of Fortul, Saravena, Puerto Rondón and Tame in Arauca, while the BioCF will benefit from the methodology developed under the GEF to support development of the EMS of prioritized municipalities in Meta. Information on land cover and ecosystem services modeling generated under the GEF project will contribute to the BioCF Subcomponent 1.2 on land use regulation enforcement and deforestation control, as well as to the regional Monitoring, Reporting, Accounting and Verification System (MRV) developed under BioCF Component 3. Additionally, information generated in the GEF will contribute to the BioCF intervention for the inclusion of key environmental variables and data-gathering for the multipurpose cadastre at the regional level. The BioCF intervention that supports the interoperability between the multipurpose cadastre and the environmental information system (SIAC), will benefit the GEF project, Subcomponent 1.1 on improved biodiversity information management and access for decision making.

4.In Component 2. Sustainable land-use, the GEF operation will formulate land use guidelines and connectivity agreements for biodiversity friendly production practices, through a participatory process with producers, producers' associations, and the regional authorities. Intersectoral dialogues will be promoted and supported by the BioCF, as part of the development and implementation of its low carbon and climate resilience strategy for production activities, which will strengthen the GEF project interventions promoting environmental governance, land use conflict-solving processes and territorial planning. The connectivity agreements will benefit both projects and will ensure the overall objective of the Component. Both projects will adopt the participatory methodology (developed under the GEF) to develop production-conservation agreements. While the BioCF will focus mainly its intervention

on productive landscapes, the GEF will complement these agreements for productive landscapes (rice, forestry, agroforestry and livestock) in connectivity corridors. In addition, the GEF project with strengthen conservation areas (KBAs and PAs of the National, Regional, Local - public and private- PA systems), with support to the declaration of a new national PA, the implementation of the management plans of existing public PAs, the formulation of new action plans for private reserves; and the definition of landscape management tools, that include ecological restoration processes, to ensure biodiversity conservation and ecosystem services provision, in support of a low carbon strategy (diagram 2). Finally, GEF Subcomponent 2.3 will develop a regional training program on access to economic and financial instruments to promote the adoption of biodiversity and ecosystem services conservation, low carbon and sustainability practices and technologies, that will benefit BioCF beneficiaries and interventions towards deforestation control (SC 1.2), low carbon initiatives (SC 2.2) and the definition of an Emissions Reduction Program (C 3).

5.Complementary to the GEF SC 2.3 training program the GEF operation will support the design and implementation of a capacity building program on information management and access (SC 1.1), and land use and territorial planning (SC 1.2), with emphasis on the inclusion and understanding of biodiversity and ecosystem services criteria. These programs will benefit a wide part of the stakeholders of both projects.

6.Finally, regarding the BioCF Component 3 on the definition of an ER Program, interventions proposed in the GEF operation will contribute to not only the definition of the Program, in terms of data and information, but the reduction of GHG emissions, that will contribute to the regional carbon accounting. Likewise, the ER Program will have a positive impact on the GEF intervention mosaics, bringing benefits to their inhabitants, and ecosystems (diagram 4).



Map 4.1. Intervention area of the OSIL Program: GEF (mosaics) and BioCF project municipalities

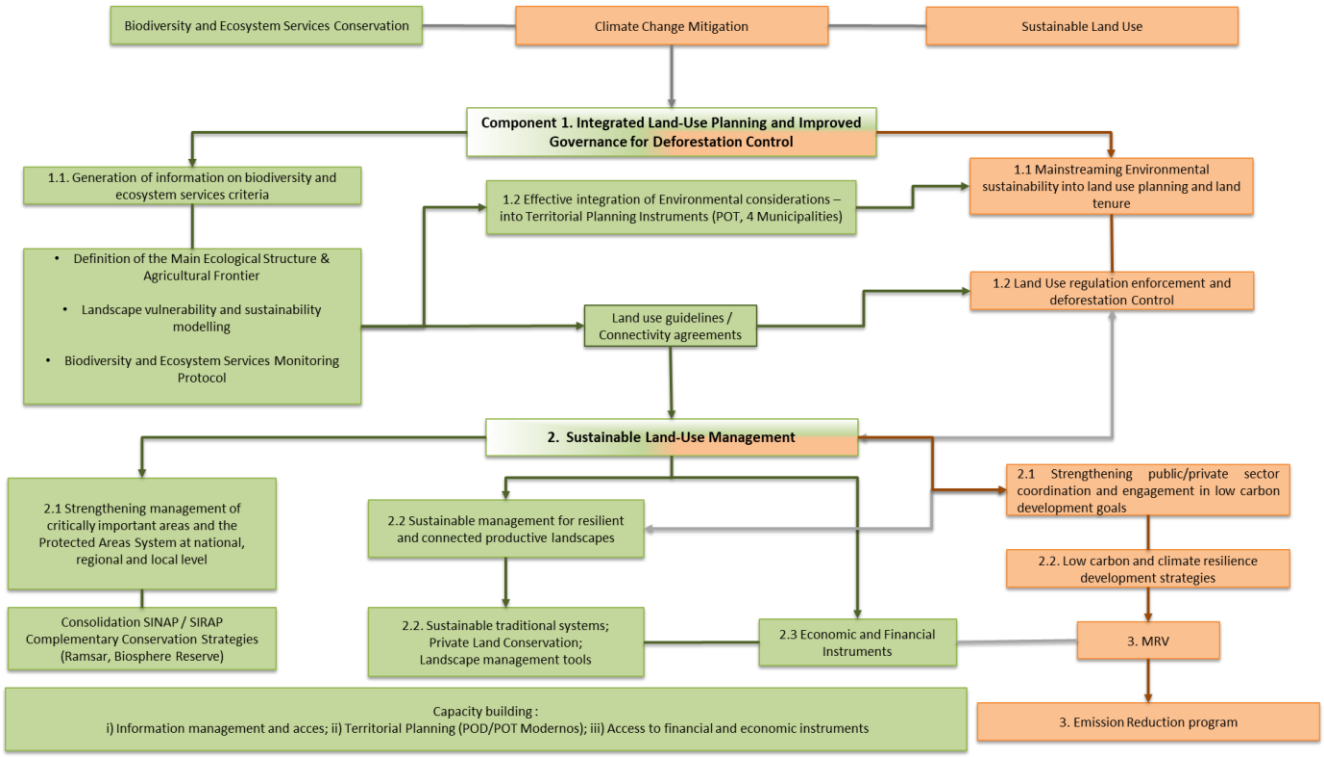


Diagram 4.1. Results chain – GEF + OSIL Projects

COMPONENT 1 - **Integrated Land-Use Planning and Improved Governance for Deforestation Control**

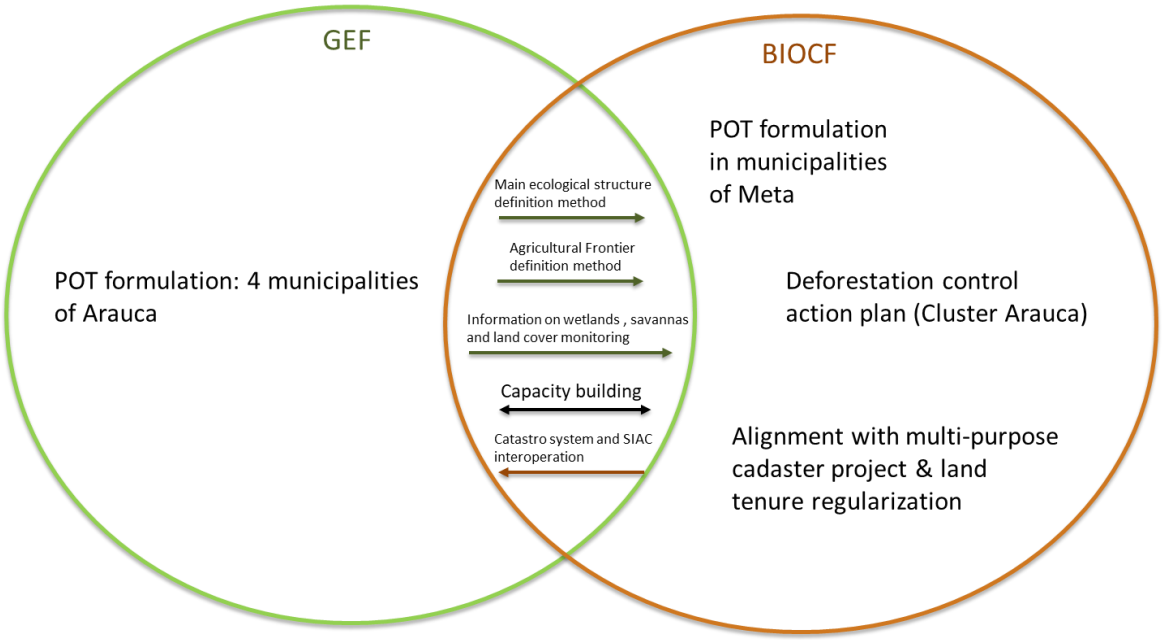


Diagram 4.2. Interactions of the GEF and BioCF projects in Component 1.

COMPONENT 2 - **Sustainable Land-Use Management**

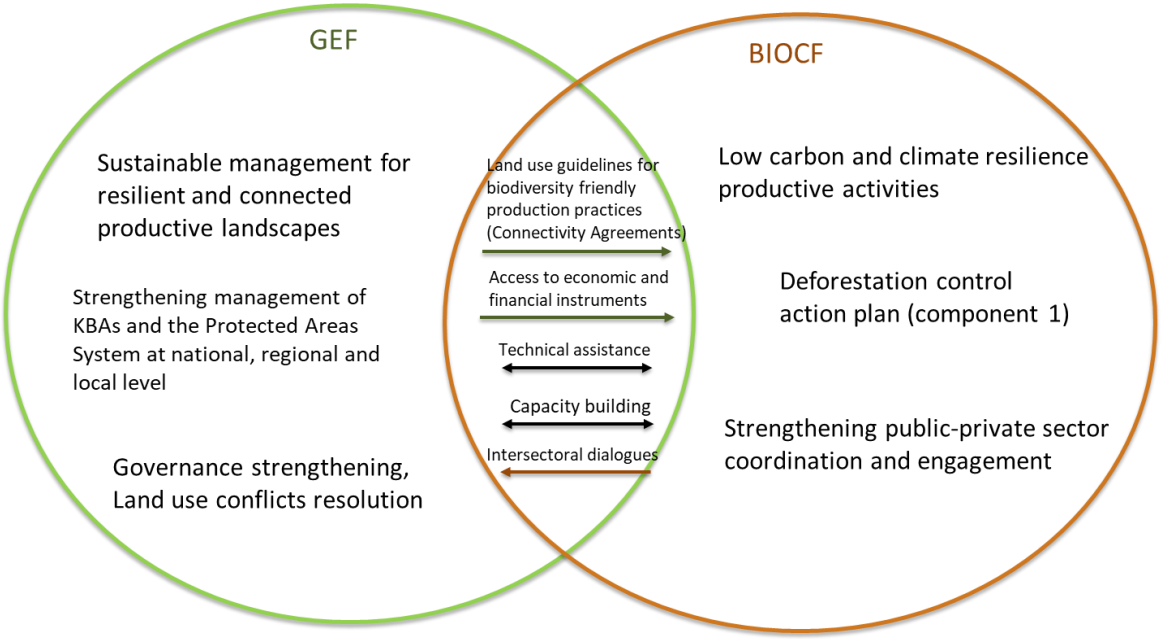


Diagram 4.3. Interactions of the GEF and BioCF projects in Component 2.

COMPONENT 3 - **definition of ER Program and Monitoring, reporting, accounting and verification of AFOLU emissions and removals (BioCF)**

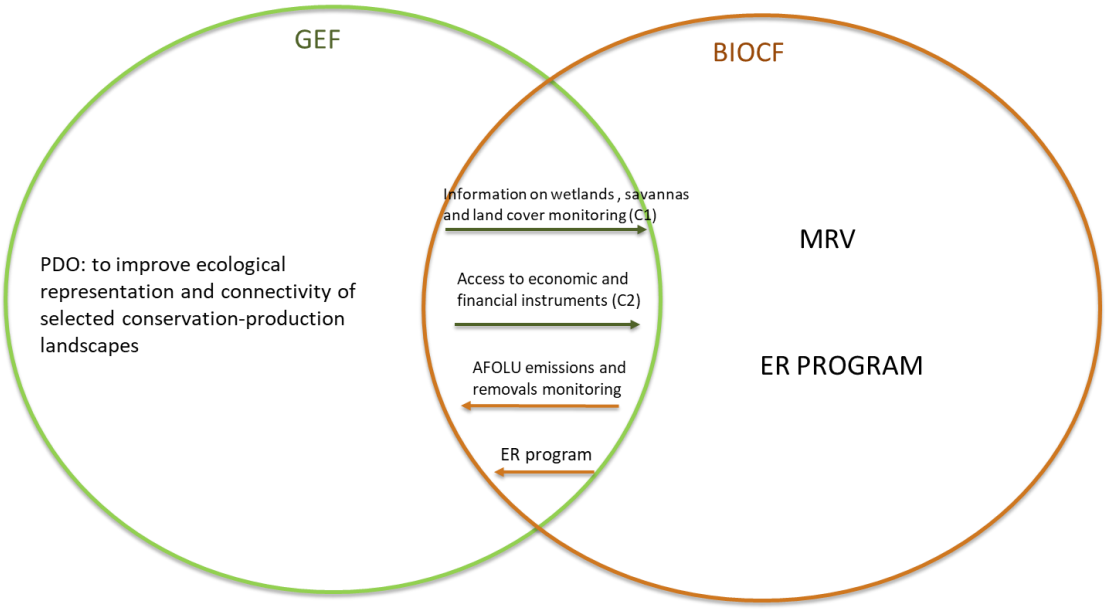


Diagram 4.4. Interactions of the GEF and BioCF projects in Component 3.

ANNEX 5: GENDER GAP ANALYSIS

COUNTRY : Colombia
Sustainable Low-Carbon Development in Orinoquia region Project

1. **It is widely accepted that rural women play a decisive role in agricultural labor** and food security, and that they possess important knowledge about the sustainable use of soils, water, seeds, and other related matters. Despite the important role of women in agricultural activities, the conditions under which men and women manage their Agricultural Production Units (APUs) continues to reflect significant gender gaps, which are accentuated under conditions of armed conflict or an illegality. Women have less access than men to loans, training, and land.[48]

2. **Based on the information provided by DANE, in Colombia, there are 2.2 million APUs operated by over 2.7 million people who are classified as farmers**.[49] Of these APUs, 22 percent are operated only by women, 52 percent by men, and 11 percent are jointly operated by women and men (15 percent, no response). In the departments where the project will be implemented, the percentage of APUs operated by women is much lower than the national average. The percentages of the APU with only women as main decision makers for production activities are Meta: 1.3 percent; Casanare: 1.0 percent; Arauca: 0.45 percent; and Vichada: 0.1 percent. The percentage of UPAs where both women and men share the production related decisions are Meta: 2.2 percent; Casanare: 1.7 percent; Vichada: 1.1 percent; and Arauca: 0.8 percent.

3. **In terms of TA or advice provided related to agricultural activities**, there is also a gender gap; similar to the national average; except for Vichada who has a much lower percentage of the whole population receiving TA and a larger imbalance.

Table 5.1. Percentage of APUs Disaggregated by Sex and who had Received Agricultural TA in 2013[50]

	APUs with only Men Responsible for Production	APUs with only Women Responsible for Production	APUs with Women and Men Responsible for Production
	Received Agriculture TA (2013) (%)	Received Agriculture TA (2013) (%)	Received Agriculture TA (2013) (%)
National	14.30	4.80	4.69
Arauca	8.66	2.88	2.71
Casanare	12.13	5.19	4.79
Meta	11.87	3.74	4.17
Vichada	2.59	0.67	0.95

4. **All of these figures point toward a rural environment where male-oriented decisions are made**. Women are secondary and have far fewer resources and means with which to tackle development and income generation than men. To address these gaps, Colombia has made great improvements in terms of regulations and has different

[48] Food and Agriculture Organization. *The State of Food and Agriculture: 2010–2011. Women in Agriculture. Closing the Gender Gap for Development,* http://www.fao.org/docrep/013/i2050s/i2050s.pdf.
[49] People in charge of operating and deciding all the agricultural issues regarding the APU, excluding from this definition those workers with the same responsibilities.
[50] DANE. 2014. National Agricultural Census. Results of the Third National Agricultural Census (definitive). Departmental annexes, http://dane.gov.co/files/CensoAgropecuario/entrega-definitiva/Boletin-7-Mujeres-rurales/7-Anexos.xls .

gender mechanisms at the national, departmental, and municipal levels. At the national level, the Presidential Office for Women's Equality[51] is responsible for assisting the Presidency as well as the National Government in designing government policies aimed at promoting equality between women and men and promoting the incorporation of a gender perspective into the creation, management, and monitoring of policies, plans, and programs in public entities at the national and regional levels. Also, within the MADR, guidelines have been established by the MADR's Rural Women Directorate (*Dirección de la Mujer Rural,* created in December 2015) which is responsible for the design, formulation, and evaluation of gender-informed programs that specifically help to address the main challenges faced by rural women in Colombia, namely unequal access to land and land tenure rights recognition, limited access to TA, and financing constraints for rural production.

Project's Contribution to Addressing Gender Gaps

5. **Within this context, it is necessary for the project to consider specific actions that drive the closure of these gaps** through the active participation of women in decision making, as well as equitable conditions for participation by men and women. The proposed operation will consider gender aspects during implementation and undertake a socially inclusive approach—one in which vulnerable or traditionally excluded social groups are treated as partners in the planning, operation of funds, and the deployment of support for various activities. It is expected that both men and women will have equal opportunities to access, participate in, contribute to, and henceforth, benefit from various activities under the project. This will further improve decision making of women and men over their natural resources.

6. **The project will particularly address gender inequalities** in terms of access to capacity-building activities and follow the legal frameworks established by the GoC. The project will be aligned with the World Bank Group Gender Strategy[52] that recognizes that stronger and better-resourced efforts are needed to address gender inequalities in access to jobs as well as control over and ownership of productive assets. The project's activities will particularly contribute to the strategy's Pillar 3 by removing barriers (capacity-building opportunities and access to financing) to Women's Ownership and Control of Assets. The project's progress in addressing these barriers will be measured through the Results Framework indicators. In addition, the project will promote participatory M&E to ensure women's participation in measuring their own outcomes.

7. **Table 5.2 specifies the different actions** that the project will conduct to mainstream gender considerations throughout the project activities. Special attention and evaluation of progress will be given to the following activities: (a) the information gathering and land-use planning activities (Component 1) will include socialization and diagnostic activities that will consider gender appropriate strategies; and (b) design training modules in production-conservation landscape practices with at least one specifically geared toward women, c) project interventions focusing on access to financing and conservation-production funding will adopt a gender specific focus.

[51] *Consejería Presidencial para la Equidad de la Mujer*, www.equidadmujer.gov.co
[52] World Bank Group. 2015. "World Bank Group Gender Strategy (FY2016–23): Gender Equality, Poverty Reduction, and Inclusive Growth."

Table 5.2: Project activities and Gender Mainstreaming Actions

Activity	Gender Mainstreaming Actions
Component 1. Effective Integration of Environmental Considerations at Appropriate Scales in Territorial and Sector Planning	
Status diagnostic of existing land-use planning instruments	Review the presence of gender considerations within existing land-use planning instruments
Institutional capacity building related to land-use planning	Gender roles to be clearly articulated while undertaking training needs assessment and incorporate in training modules Proactive inclusion of vulnerable population (women/youth) as participants in capacity development activities
Strengthen formulation of land-use planning instruments incorporating environmental criteria	Proactive inclusion of women[53]/youth in working groups Incorporation of the perspective of gender and natural resources management in land-use planning instruments
Component 2. Landscape Management for Connectivity and Resilience in Priority Biodiversity and Ecosystem Services Areas	
Identification, analysis, and prioritization of sustainable practices in connectivity agreements	Inclusion of gender criteria in the analysis of climate smart practices; prioritization disaggregated by gender, if differences are identified
Design, deployment, and piloting of training programs	Proactive inclusion of vulnerable population (women/youth) as participants in the design of training programs as well as beneficiaries of such programs and modules Design at least one program geared toward women
Financing and non-financing incentives and products (FINAGRO ITPS) to promote the adoption of low-carbon and sustainable practices and technologies	Proactive inclusion of women in working groups, committees Gender considerations in assessing potential beneficiaries of these incentives
Design and implementation of safeguards instruments	Incorporate gender considerations in safeguard instruments
Establish knowledge exchange platform	Proactive attention to lessons learned regarding gender roles
Component 3. Project Coordination, Management, and Monitoring and Evaluation	
PIU/RST	Apply gender clause to human resource recruitment, encouraging the applications from women and other vulnerable population candidates and their hiring
Project monitoring	Involve women/youth and women/youth organizations in the project M&E Specific monitoring of gender mainstreaming progress during project implementation

[53] Proactive inclusion of women will contribute to reduce the existent imbalance as men attend similar events in higher proportion than women.

	Information system to ensure gender disaggregated data
Supervision of the feedback and grievance redress mechanism	Consider gender-balanced participation in the GRM
Communications and information sharing for the project	Proactive inclusion of women and women's organizations in consultations Proactive attention to lessons learned regarding gender roles Gender-sensitive project communications

ANNEX 6: ECONOMIC ANALYSIS

COUNTRY : Colombia

Orinoquia Integrated Sustainable Landscapes

A. Global and National Relevance of the Orinoquia and Overviews of its Threats

1. **The economic analysis presents an incremental analysis of the economic (welfare) benefits generated by the proposed investment,** resulting from the provision of global and local environmental benefits, which are both private and public goods. The tendency to underestimate the value of ecosystems is related, for the most part, to their 'public good' quality. The ecosystems and the services that they provide are accessible to all and, thus, protected by none. They generate shared benefits and therefore encourage free riding. Being publicly provided, they are underpriced or unpriced and thus tend to be overused and abused. This public good character of the ecosystem applies at the local scale as well as globally.

2. **The region is considered globally as of high environmental value and climatic importance.** Its variety of ecosystems and species are considered key for ecological connectivity, carbon sequestration and water provision and regulation. The Orinoquia is dominated by herbaceous vegetation with patches of shrubs and trees in floodplains forming a mosaic landscape of grasslands, wetlands and riparian forests. These savannas are characterized by having a large diversity of plants, endemic, migratory and rare species. A recent WWF report states that the Orinoco basin has 71 percent of the water and swamps of Colombia, and its home to 167 mammal species, among which 26 species are threatened, 783 bird species and 658 fish species, as well as 2692 flowering plant species[54]. This vast biodiversity might benefit future generations from new medical discoveries. Its aquatic ecosystems (páramos, flooded savannas and wetlands) play an important role in regulating the water regime, climate and carbon cycle. These savannas are also subject to a periodic fire regime that usually peaks in the dry season between December and early April and represent a significant portion of burned areas of South America.[55] There is a natural dynamic between carbon emissions and sequestration, while sequestration dominates during the wet-season, emissions dominate during the dry seasons, that are expected to become longer due to intensification of land uses and associated desertification processes. Savanna lands and wetland transformation will have a significant impact on GHG emissions since these changes would influence ecological processes including fire regimes, soil, water and carbon storage, and carbon sinks in riparian and Amazonian forests[56].

3. **The region has been exposed to human interventions for the past decades**, such as oil exploration and exploitation (being one of the most important economic activities in the region), agro-industrial development, wetlands' drainage and diversion. All this presents a high risk for landscape fragmentation and ecological balance. The Orinoquia region provides eight percent of the national GDP and it has been declared as one of the last agricultural and development frontiers for the continent, due to its energy, agroindustry, and touristic potential.

4. **The Orinoquia Region is affected by severe levels of loss of ecosystem services** associated with water resources. Hydrological analysis on water yield, allow to infer that the Orinoco Region is a watershed where

[54] World Wildlife Fund Colombia (2014): Identifying Highly Biodiverse Savannas based on the European Union Renewable Energy Directive (SuLu Map)- Conceptual background and technical guidance. WWF Colombia.

[55] Savannas are being considered the most important biomes in terms of fire events in South America. It has been estimated that, between 2000-2008, the savannas of Colombia and Venezuela contribute 25% of overall fires on the continent, of which Colombia's savannas contribute 65%. See Romero-Ruiz, M. et al. (2010): Spatial and temporal variability of fires in relation to ecosystems, land tenure and rainfall in savannas of northern South America, in: Global Change Biology 16, 2013-2013.

[56] The Orinoquia region has about 2.2 Mio. ha of standing forests. See World Bank/ DNP: Low Carbon Development for Colombia, p.90

greatest amount of water runs off, but little is stored, having only certain specific zones where the characteristics of the soils and aquatic ecosystems allow fulfilling the function of water retention[57]. Risk analysis on ecosystem services loss show that highest risks related to overuse and poor management of soils by productive activities, are in soils with limited capacity of water retention.

5. **Between 2008 and 2014, 176,385 hectares of land in the region have been transformed into crops (a 47 percent increase**). The changes are related to the conversion of natural ecosystems, especially savannas and forests, to give way to crops and pastures, mainly in the department of Meta in the piedmont and mountainous landscapes. During the 1990-2015 period, the region lost more than 1 million hectares of forests equal to 20 percent of national deforestation during this period. There have also been changes in land use related to commercial forest plantations and agricultural products (such as corn, soybeans, forage grasses and rice), replacing the natural savannas of Meta and Vichada High Plains (Altillanura), while other plantations such as palm oil and rice over recent years are affecting the floodplains of the department of Casanare, one of the largest wetland systems in the country.

6. **The main indirect causes of land conversion in the Orinoquia Region include weak sectoral and land use planning,** and the underrepresentation of highly biodiverse ecosystems in the National and Regional Systems of Protected Areas (SINAP- SIRAP). This is aggravated by the low presence of national authorities, and a road infrastructure disconnected from the country's primary network. Additional pressures for terrestrial ecosystems could arise from land restitution programs, programs for land allocation to ex-combatants, and plans and objectives for increased agricultural development in the region (e.g. Agricultural Frontier, Zones of Interest for Rural, Economic and Social Development (ZIDRES), the Orinoquia Master Plan, Colombia Siembra, etc.). Therefore, ecosystems such as the savannahs of the Altillanura, floodplain savannas and wetlands that are currently not reflected in the national system of protected areas, are highly threatened.

7. **To significantly promote efficient land use and reduce deforestation in the Orinoquia region, the project needs to address key issues** across the complex set of drivers and barriers to sustainability. This proposed project aims at improving ecological representation and connectivity of selected conservation-production landscapes in two areas in the Orinoquia Region.

B. Without-Project Scenario (BAU scenario)

8. **For this analysis, a BAU baseline is used** and assumes that future development trends follow those of the past and no changes in policies will take place.

9. **The Conpes 3797 for the Altillanura, the Zones of Interest for Rural, Economic and Social Development (ZIDRES) law and the delimitation of the agricultural frontier promote large agro-industrial projects for the region**. Even though agricultural planning has started to factor in some environmental considerations (restrictions on use in protected areas and strategic ecosystems, such as páramos), pressure persists on natural ecosystems with high biodiversity values, especially seasonal ecosystems such as the savannahs of Arauca and Casanare, and the altillanura savannahs of Vichada, perceived as “vacant” for any type of development or productive intervention. In the BAU scenario it is assumed that the land degradation trend will continue, without the design and implementation of planning instruments with environmental and social criteria accordingly to the dynamics of the

[57] *http://www.minambiente.gov.co/images/GestionIntegraldelRecursoHidrico/pdf/macrocuencas/Macrocuenca_Orinoco/SINTESIS_-_REJ__IAvH_PEMO_FASES_III_y_IV_FINAL.pdf*

ecosystems and inhabitants of the region. It is also expected, a possible increase in deforestation by indirectly promoting the advance of the agricultural frontier, generating impacts on the region's biodiversity and the interruption of biological corridors, rupture of ecosystem integrity in protected areas, impact on quality and soil fertility, increased levels of threat due to landslides and flood phenomena, possible increases in monocultures, illicit crops, extensive livestock, and indiscriminate use of agrochemicals.

10. **The lack of and limited capacity of stakeholders** and key actors to participate in decision-making and negotiation processes will remain, resulting in an inadequate land and natural resources use and management, corruption and inadequate management of monetary resources.

11. **Regional planning and dialogue spaces will continue to be limited** and ineffective, therefore decision making will continue to be disarticulated, disorganized, problematic and below the needs and expectations of local stakeholders (civil society, ethnic communities). This will also affect the governance and appropriation of the community of actions and interventions proposed in the territory by projects like this.

12. **Land use planning instruments** (Territorial Planning Schemes and Plans – EOT and POT) will continue to be outdated, since the region is behind in terms of formulation and actualization of these instruments (89 percent of municipalities).

13. **Socially, conditions of poverty, violence and social segregation** in the community may increase, particularly in those most vulnerable (rural communities and indigenous peoples). In terms of inequality in the distribution of benefits, the tendency to land grabbing can continue, leaving vulnerable populations restricted to land and economic incentives access.

C. 'With Project' Scenario - Anticipated Outcomes and Their Associated Benefits

14. **With its different components and multiple areas of investments, the project will generate a diverse portfolio of economic benefits** ranging from direct use values, to indirect nonuse values. Only some of these benefits are reflected in market prices, due to widespread market imperfections and policy failures. These benefits are shown through the project's ***contribution to an innovative territorial and sector planning,*** with the inclusion of biodiversity and ecosystem services criteria. The introduction of technology and capacity building, that improve control, law enforcement and decision making, to correct, prevent and mitigate land and water degradation, deforestation, and conflicts between production and environmental strategic areas; also, through its ***integral planning and management of landscapes,*** to improve the ecological connectivity and resilience of environmental strategic areas and their ecosystem services. Precise mapping available to the region will allow solving doubts regarding the agricultural frontier, urban-rural expansion areas, and environmental determinants; and its impact on ***GHG emissions reduction***, as part of a larger ER program led by the BioCarbon Fund, this GEF project and similar others, under formulation and implementation, constitute an integrated and sustainable vision of the Orinoquia. Interventions focused on the reconversion of productive activities, mainly livestock and rice crops into sustainable agroforestry, silvopastoral and forestry systems, conservation of forests, restoration of catchments for water provision, and the correction of slash and burn practices, aim at reaching a territorial sustainability.

15. **Project's activities have been formulated to slow down the accelerated deforestation rate,** land degradation and biodiversity loss associated to the productive transformation of the region. Disorganized planning is leading to unnecessary environmental costs, that is why the project's approach of integrating environmental and

territorial management into conservation-production landscapes, may be an opportunity to move towards new environmental policies trends.

16. **Acceptable changing limits in an ecosystem exists and must be respected**, however, this is not an attribute of the ecosystems by itself, but it corresponds to a local, regional and national institutional and policy dynamics. The expected innovation and sustainable productive practices of the Orinoquia, will be only achieved with the synergy of a normative framework and the construction of an institutional confluence clearly presented in the stakeholders' map and engagement plan of this GEF project. These conditions allow to highlight the development and occupation model for the region, accordingly to the functioning of the ecosystems and selected sustainability indicators.

17. **The area for which costs and benefits are examined targets the Regional System of Protected Areas** (PNN El Tuparro, DNMI Cinaruco, RF Alto Satocá) and global designations such as the Ramsar Bita and the Biosphere Reserve El Tuparro, covering an area of 2,257,785 hectares, and a possible new Protected Area (Savannas and Wetlands of Arauca) currently under declaration, with 300,000 hectares. These areas will be brought under improved management, by the formulation of their management plans and guidelines and the implementation of prioritized actions, as well as by being endowed with infrastructure and equipment. The area benefited from an Integrated Landscape Management and located outside PAs, targets 61,235 ha, that includes productive landscapes dominated by livestock, rice and agroforestry that will go under a series of "connectivity agreements" for an environmentally friendly production and prioritized restoration. It is assumed that forest restoration and recovery will be seen within the project's lifetime, generating benefits in terms of biodiversity conservation, soil and water recovery, CO_2 sequestration, reduction of the deforestation rate, improved productivity, improved governance structures, bequest values and capacity building.

18. **By creating and strengthening dialogue spaces the project will correct the region's current limitations** and lack of effectiveness to solve land use conflicts, and it is expected that decision making will be more articulated, organized, and will fulfill the needs and expectations of local communities. This will also have a positive impact on governance and appropriation of the community of the actions and interventions proposed in the territory.

19. **These expected results are essential to achieve the ordained use and occupation of the territory**, the increase of productivity, innovation and the balance between use and conservation of natural resources. They are aimed at deactivating the current land use dynamics and creating the basis for a long-term agreement acceptable to the different actors. The coordinating work of the Region requires the support of a system to monitor the occupation of the territory, natural resources and ecosystems, based on economic accounting methods that incorporate the dynamics of the natural resource stock.

20. **Global Environmental Benefits-GEB:** For this economic assessment, these variables are related to the recognition of the environmental dimension as a structural factor in strategic and operational planning dynamics and in the execution of the society's efforts to order, promote and consolidate a sustainable development. It corresponds to benefits foreseen in the great international agreements, since they cross-cut all the sectoral activities of rural and urban development, but they have the distortion of their indivisibility and this generates uncertainty about the way are integrated into general decision making.

21. **To ensure these GEB, the most strategic suggestion as a result of the economic evaluation**, is to make sure project indicators are closely controlled and followed up, being coherent with the environmental reality. It is

also recommended to structure financing mechanisms that make conservation, restoration and reforestation viable, through consolidated markets such as carbon bonds emissions and REDD+ projects, payment for environmental services at local and regional level for water regulation and protection and overpricing for conservation at points of scenic beauty with scaled economies of high value.

D. Main Assumptions, Cost Factors, and Methodology

22. **It is important to point out that the economic analysis (qualitative and quantitative) is based on the hierarchy of the contributions of the different components of the GEF project**, their co-financing and of other projects with complementary objectives (BioCF, Natural Wealth – USAID; GEF SINAP; WWF – Parks Unit; TONINA - GIZ). The incremental costs mentioned in various theoretical evaluations, need a conceptual revision and technical regulation to enhance the instrument and advance towards its appropriate application. Incremental costs within the framework of this analysis are complementary and structured in three main blocks.

23. **The main blocks are:** (i) the explicit benefits of the assessed period (2020-2035) are directly related to the objectives and goals of the project and correspond to those of the cost/benefit analysis. Objectives and indicators have been described and explained in the Projects Results Framework; (ii) implicit indirect benefits involved due to technological contributions, are exponential and in favor of the territories. One example is the contribution that the project will make to the areas with an improved 1:25000 cartography, which will have medium and long-term benefits, as there will be training, and capacity building interventions and there will be replicas of procedures and results in other territories; (iii) the future benefits involved, will not only be generated because of the project funds, but from funding contributions from the national budget or from the private sector in the region. Such benefits have a high probability to occur in the future, because of the present decision, but are not part of the cost/benefit evaluation and can be both explicit and implicit.[58]

24. **As required for economic analysis of projects, a with- and without-project situation is used for estimating incremental benefits** generated by the project. Taking account of the current situation and the fact that the environmental as well as livelihood situation in the project areas is likely to continue to decline, even a slowing but continuation of an already negative trend represents a project benefit. For example, CO2 sequestration is quite stable in the region and it depends on the type of intervention on the territory: restoration, reforestation, productive reconversion, among others. Any new intervention of this kind will show a positive benefit on the territory and will be reflected when quantifying the amount of incremental carbon that is not emitted into the atmosphere compared to the 'without project' situation (this as part of the ER Program to be developed under the BioCarbon Fund Initiative).

25. **The GEF project was formulated towards the prevention and anticipation of impacts** on the territory, before being formulated for its recovery or restoration. Although, it should be noted that the progress of degradation processes, especially in the Orinoquia, is such that a combined strategy of prevention and action or immediate intervention is necessary to stop processes of degradation before they are irreversible.

26. **Quantitative assessment:** The consolidated results of the economic assessment of the GEF-BIOCF projects are estimated from the cumulative investments of US$ 36 million. Benefits were calculated for a short (5 years),

[58] Many of the effects and impacts associated to the lack of land use planning are "externalities", impacts that are not perceived in direct relation with the objectives, but that the GEF projects contribute in their achievement over time.

medium (10 years) and long (15 years) term scenario. Following what was stated in paragraph 21, the aggregate evaluation is presented:

FINAL RESULTS OF THE ECONOMIC ANALYSIS - GEF and BIOCF Projects - (USD)							
Parametre	Direct, indirect and incremental benefits				Cost	Cost / Benefit	Net increment benefit
	2025	2030	2035	TOTAL			
Optimum scenario	25,232,400	42,879,600	86,688,000	**154,800,000**		**4.3**	
Minimum Scenario	6,271,200	12,776,400	27,752,400	**46,800,000**		**1.3**	
Gross Incremental benefit	20,088,000	31,248,000	60,264,000	**111,600,000**	36,000,000	**3.1**	**1.8**

27. **The horizon of the projects is carried out until 2035**, estimated by five-year periods, with a progressive development, the first phase with the execution of the projects and the immediate results, the second foresees additional goals due to the replication of pilots and the applicability of the transmission of methods and information and technology planned by the projects, and the third are effects and impacts achieved in the parts of the region where additional training, capacity building and other instruments arrive, together with the externalities achieved by the expected dynamics of the technical components.

28. **The results are organized in three scenarios**. The optimal includes all the benefits, direct, indirect and incremental. The minimum corresponds to the expected benefits in the mosaics of intervention, these are the direct effects and impacts. Finally, the gross incremental benefit, with respect to the costs, and net incremental benefit once the costs are discounted.

29. **The results correspond to the feasibility of the projects**, fully evaluated, according to the distribution of the investments per component and activity. The optimal, is the effectiveness threshold, where the investment will have 330 percent additional benefits. The minimum shows that the investments require a strict control and monitoring system, that can contribute to fill the gap to achieve the optimal. The incremental benefits are important, since they represent an additional 210 percent to the initial effort, in net benefits the contributions can amount to 1.8 times the investment.

30. **The greatest incremental benefits of the project, nationally and globally, are in the quantification of ecosystem services** such as carbon sequestration, reduction of greenhouse gas emissions, water regulation and the development of sustainable ecotourism. The synergy of the GEF and BioCF projects, makes the Orinoquia pose as a future supplier of air, drinking water, wood, food, medicinal and pharmaceutical elements, biological pest controller, recreation, among many others, generating a new approach to the sustainable development of the region.

31. **Results by components:** The economic assessment by components is a disaggregated version of the table of paragraph 26. The following table shows this analysis results, clarifying that Component 3 corresponds to the Emissions Reduction Program of the BioCF Project and Component 4, to Program Management, communications, monitoring and implementation arrangements.

STRUCTURAL ECONOMIC ANALYSIS BY COMPONENTS. GEF-BIOCF (USD)										
Scenario	BioCF Components (GEF subcomponents integrated)	GEF investments and associated				BENEFITS EVALUATION				
		BioCarbon Fund	GEF	Cofinancing	TOTAL	2025	2030	2035	TOTAL	COSTS / BENEFITS
Optimum	Component 1	5,940,000	950,400	1,029,600	7,920,000	1,568,635	4,848,509	7,843,176	14,260,320	**1.8**
	Component 2	6,048,000	4,687,200	4,384,800	15,120,000	17,619,778	21,290,565	34,505,398	73,415,740	**4.9**
	Component 3	5,742,000	208,800	4,489,200	10,440,000	6,540,839	16,583,340	42,944,905	66,069,084	**6.3**
	Component 4	2,217,600	302,400	0	2,520,000	0	0	0	0	
Minimum	Component 1	5,940,000	950,400	1,029,600	7,920,000	1,568,635	4,848,509	7,843,176	14,260,320	**1.8**
	Component 2	6,048,000	4,687,200	4,384,800	15,120,000	2,797,200	3,477,600	8,845,200	15,120,000	**1.0**
	Component 3	5,742,000	208,800	4,489,200	10,440,000	1,566,000	3,758,400	10,335,600	15,660,000	**1.5**
	Component 4	2,217,600	302,400	0	2,520,000	0	0	0	0	
Incremental	Component 1					0	0	0	0	
	Component 2					14,822,578	17,812,965	25,660,198	58,295,740	**3.8**
	Component 3					4,974,839	12,824,940	32,609,305	50,409,084	**4.8**
	Component 4					0	0	0	0	

32. **The investment is distributed among components,** where component 2 has 41 percent of the investments, followed by component 3 with 31 percent, and component 1 with 21 percent, and component 4 with 7 percent correspondent to administration and management. The final cost/benefit ratio in the optimal scenario, benefits component 3, followed by 2, and finally 1. Component 4 is not evaluated since the costs associated to this component are support costs and not results.

33. **In the assessment of the minimum scenario the results differ**, since the highest contribution is of component 1, followed by 3 and finally by component 2, without benefit, which indicates that this component has very high investments, or that its contributions are important, always and when the projects approach the maximum cost/benefit. Regarding the incremental benefits, the most strategic component is 3, related to the Emissions Reduction Program, where benefits are more representative, with higher and stronger effects and impacts on relevant territories and the society.

34**. Economic Rate Return-ERR**: The different methods of calculating this rate were analyzed and according to specificities of the project, the Internal Rate Return corrected for the discount rate correspond to financial operations. The discount rate corresponds to the legal retention estimated in 2019 (11 percent) and the Consumer's price index (IPC) certified by DANE calculated in 3.5 percent.

35. **In the optimal scenario**, the economic evaluation is differential, since the impact must be measured with respect to a discount rate of traditional investment projects, which is estimated equivalent to the Average Placement Rate (Tasa de Colocacion Promedio) 2017 - 2019, reported by the Bank of the Republic. In the same way that in the minimum scenario the IPC DANE inflation rate discounted is of 3.5 percent.

36. **In all estimates,** these projects are positive with high social, economic and environmental performance.

Discount rate - NPV Net Present Value - Minimum Scenario															
YEAR	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
US$	$ 608,204.13	$ 912,467.70	$ 1,216,731.27	$ 1,520,994.83	$ 1,824,935.40	$ 1,824,935.40	$ 1,859,819.12	$ 2,479,651.16	$ 3,099,483.20	$ 3,134,043.93	$ 3,134,043.93	$ 4,110,465.12	$ 5,480,620.16	$ 6,850,452.20	$ 7,826,873.39
Initial invest	$ 9,003,229.97	$ 9,003,229.97	$ 9,003,229.97	$ 9,003,229.97											
NPV Benefits	$ 573,966.41	$ 812,015.50	$ 1,021,640.83	$ 1,204,780.36	$ 1,363,695.09	$ 1,286,498.71	$ 1,236,757.11	$ 1,555,878.55	$ 1,834,625.32	$ 1,750,000.00	$ 1,651,162.79	$ 2,042,635.66	$ 2,569,444.44	$ 3,030,038.76	$ 3,461,886.30
NPV Investments	$ 8,493,540.05	$ 8,012,919.90	$ 7,559,108.53	$ 7,131,459.95											
NPV Project	**$**														**10,646,317.83**
Discount rate	6														
EER	8%														
Internar Return rate	23														
B/C	1,3														

Discount rate - NPV Net Present Value - Optimal Scenario															
YEAR	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
US$	$ 2,567,829.46	$ 3,851,744.19	$ 5,135,658.91	$ 6,419,896.64	$ 7,703,811.37	$ 7,703,811.37	$ 6,484,819.12	$ 8,646,317.83	$ 10,808,139.53	$ 9,589,147.29	$ 9,589,147.29	$13,033,591.73	$ 17,377,906.98	$21,722,545.22	$ 25,166,989.66
Initial invest	$ 9,003,229.97	$ 9,003,229.97	$ 9,003,229.97	$ 9,003,229.97											
NPV Benefits	$ 2,292,635.66	$ 3,070,736.43	$ 3,655,684.75	$ 4,079,780.36	$ 4,371,447.03	$ 3,903,100.78	$ 2,933,462.53	$ 3,492,248.06	$ 3,897,609.82	$ 3,087,532.30	$2,756,782.95	$ 3,345,284.24	$ 3,982,558.14	$ 4,444,767.44	$ 4,597,868.22
NPV Investments	$ 8,038,436.69	$ 7,177,325.58	$ 6,408,268.73	$ 5,721,576.23											
NPV Project	**$**														**91,576,227.39**
Discount rate	12														
EER	111%														
Internar Return rate	134%														
B/C	4,3														

E. Results

Qualitative Analysis

37. The scope and contributions to development processes are plenty, the qualitative analysis measures the main and maximum impact on the territory, the local population and the specific society. The main impacts found through this assessment correspond to (i) effects and impacts on the institutional economy; (ii) effects and impacts of the territorial economy; (iii) contributions to the social economy of the territory; and (iv) contributions to environmental planning.

Dimensions	Project's components	Scope	Relevance of the impact and contribution by the project
Institutional economy	Component 1; Subcomponent 1.1	Scale economy in the investment required to updated territorial land use plans, and quality enhancement due to better recognition/knowledge of the territory	High
		Savings in land titling processes due to improved topography information	Medium
	Component 2; subcomponent 2.3	Reduction of costs in environmental planning investments	Medium
Territorial Economy	Component 2; subcomponent 2.2	Positive changes in productiveness by area unit, for cacao, rice and livestock.	Hight
	Component 1; subcomponent 1.2	Increase in production area, with no land use conflicts.	High
	Component 1; subcomponent 1.1	Catastro actualization through a new POT	High
Social Economy	Component 2; subcomponent 2.1	Opportunity access to women and the youth	Medium
		Investments for capacity building	High
Environmental Planning	Component 2; subcomponent 2.2; Component 3	Biodiversity conservation	High
	Component 2; subcomponent 2.2; Component 3	Ecological restoration, deforestation control	Medium
	Component 2; subcomponent 2.2; Component 3	Productive reconversion	High
	Component 2; subcomponent 2.2; Component 3	Commercial reforestation	Medium
	Component 2; subcomponent 2.1	Restoration of key ecosystems for water regulation and supply	High
	Component 2; subcomponent 2.1	Land use planning	High
	Component 2; subcomponent 2.1	Protected Areas management	Medium

Quantitative Analysis

38. The results of this quantitative analysis aimed at registering the escencial changes and the positive impacts of the GEF project (US$5.9 Million + US$10 million of cofinancing), and the complementary BioCarbon Fund

initiative (US$20 million). The cost/benefit analisys was built on two scenarios: a minimum expectations scenario and an optimal scenario, the later expects the achievement of all assumptions and the project's maximum efficiency in time.

39. Overall, the results show positive simulation outcomes for the project, thus confirming economic feasibility. The benefits are 1.3 times larger than the costs of US$36 million (US$5.9 GEF and US$30 million of co-financing) in a minimum scenario; for an optimal scenario benefits are four times larger than the costs of US$36 million. A 15-year period is assumed to assess the economic feasibility of the project (2020-2035).

Costs (US$ millions)	Benefits (US$ millions)	Ratio	Scenario
36	47	1.3	minimum
36	154	4.3	optimal

40. *Hedonic methods to value environmental services (minimum scenario)*, the objective of this method is to estimate the benefits of the economic contribution of forests and watersheds associated with landscape corridors in the two selected intervention mosaics, to demonstrate the economic importance of ecosystems and demonstrate the impact of the investment. The study focuses on estimating economic value to: (i) fix atmospheric carbon; ii) conserve water resources; and (iii) generate ecotourism. The estimate of benefits is based on the transfer of benefits.

41. The transfer of benefits method allows the evaluation of the impact of environmental policies when it is not possible to apply direct valuation techniques due to budgetary restrictions and time limits. The figures derived from the transfer of benefits constitute a first approximation, valuable for the decision makers, about the benefits or costs of adopting the project. In this method, benefits are estimated as a function of the value of the most relevant ecosystem services. It is important to highlight that the value of biomass and its carbon equivalents are not estimated, nor the effects on the temperature change that are produced by the captured CO_2.

42. *Assumptions*: (i) restoration interventions target goals regarding biodiversity conservation and sustainable forest management, protection-production forestry areas, reforestation/afforestation and degraded soils reconversion; (ii) CO_2/ha capture is a stable indicator in the region and it depends on the intervention on the territory (restoration, land reconversion); (iii) the reference tCO_2 prices are taken from average international carbon markets; (iv) the benefits from the water related ecosystem services (water supply and regulation) are proportional to the total area of the selected landscapes that generates the service; (iv) Willingness to Pay, this is a good approach to estimate the benefits expected by an environmental service.

43. *Carbon fixation benefits estimations*: Data on tCO_2/ha captured and its prices was collected from similar projects in the Orinoquia and adjusted to a 15 years horizon[59]. tCO_2 prices varied depending on the type of land conversion activity implemented. These activities correspond to restoration, agroforestry, and agro-silvo-pastoral systems, and the productive reconversion of rice crops and livestock.

[59] The indicator of tCO2 captured per hectare is taken from analogous projects for degraded soils reconversion in the Orinoquia, which is estimated at 6 tCO2 / ha.

44. *Water related ecosystem services (supply and regulation)*: for this evaluation there were considered the number of inhabitants per department and intervened municipalities, as well as information regarding the average water demand per inhabitant (m^3)[60] . Based on this a willingness to pay was calculated.

45. *Ecotourism*: calculated as an indirect benefit of the implementation of actions of the Management Plan of the Bita Basin, and the formulation of conservation guidelines of El Tuparro Biosphere Reserve. Information on the average number of visitors per year to the region and the value of the PNN El Tuparro entry tickets, was used to calculate the benefit of ecotourism for the Bita/Tuparro Mosaic.

46. Total economic benefits per mosaic and landscape are the following (minimum scenario):

Benefits calculated based on market prices and availability to pay.										
Mosaic	**Landscape**	**Municipalities**	**Intervention areas (ha)**	**Reference impacted areas (ha)**	**Main land use**	**Proposed productive system**	**Benefit for Carbon fixation (thousands of US$)**	**Benefit for flow increase and water regulation (thousands of US$)**	**Benefits – Ecotourism and recreation (thousands of US$)**	**Total benefit 15 years (thousands of US$)**
Cocuy /Cinaruco	Flooded savannas of Arauca and DNMI Cinaruco	Arauca and Pto. Rondon	885	322,000	Livestock	Silvopastoral	710	450		1.16
		Arauca and Arauquita	4619	54,985	Livestock	Agriculture/silvopastoral				
	Wetlands of Casanare	Paz de Ariporo and Tamara	4479	322,000	Agriculture	Agriculture/silvopastoral	140	21		161
	Flooded savannas of Casanare	Paz de Ariporo and Hato Corozal	4265	54,985	Agriculture	Agro-forestry	302	416		718
	DMNI Cinaruco	Arauca and Cravo Norte	322,000	322,000	Livestock	Management Plan implementation, endowment with infraestructure and equipment				307
Bita/Tuparro	Bita-Meta-Orinoco Corridor and BR El Tuparro	Puerto Carreno and La Primavera	31,351	54,985	Agriculture/silvopastoral	Agro-forestry	2,221	2,517		4,738
		La Primavera	9386	54,985	Forestry for protection/production	Agro-forestry	113	375		488
		Puerto Carreno and La Primavera	1.372.535	1.372.535	Agriculture/silvopastoral	Management Plan implementation: Bita Basin, and BR and PNN El Tuparro			75	301
Total							**3,541**	**5,308**	**75**	**9,458**
Sources: Biodiversidad de la cuenca del Orinoco: Bases científicas para la identificación de áreas prioritarias para la conservación y uso sostenible de la biodiversidad. Lasso, Usma, Trujillo, Rial. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, WWF, Fundación Omacha, Fundación La Salle e instituto de Estudios de la Orinoquia, 2010.										
Diálogos regionales para la planeación de un nuevo país. DNP 2019.										
Presentación institucional. Unidad de Planificación Rural Agropecuaria, UPRA. 2010.										
Primera Comunicación Nacional ante la Convención de Naciones Unidas sobre Cambio Climático. Colombia. FMAM – PNUD, 2001.										

47. Preventive costs for losses due to land use change. (optimal scenario): estimates of carbon storage and release depend mainly on the type of forest, the change in land use, the age of the forest and the type of ecosystem. The carbon captured and stored by forests has a positive environmental value, while its release into the atmosphere due to the change in land use causes environmental damage by promoting global warming.

[60] Water demand is calculated based on the demand values and population benefited, within the area of influence of the Protected Areas Regional System, this value is close to 65.7 m3 / inhabitant / year.

48. *Assumptions*: (i) carbon deposits implicitly estimate the biomass that the forest possesses, and the effect of temperature change due to their release into the atmosphere; (ii) land use change from forest to pastures or from forest to crops has a negative impact, while the change in the opposite direction, has a positive effect; (iii) the intervened areas are within the agricultural frontier and are oriented under the model of Family Agricultural Unit (UAF), where 2/3 of the Unit's area can be productive and 1/3 left for forest conservation (33 percent of the intervened area).

49. The most coherent production systems were defined to reduce the regional land use conflicts. Three main options are appropriate: i) agro-silvo-pastoral systems, which is recommended in cases where livestock is widespread, and the appropriate land aptitude/vocation corresponds to agroforestry; ii) silvopastoral, in extensive livestock areas and the appropriate land aptitude/vocation is livestock; iii) agro-silvo-pastoral, in cases where there are combined agricultural and livestock systems, and the appropriate land aptitude/vocation is agroforestry.

50. The benefits associated to forests were calculated for the long term and have an incremental tendency though time. Benefits associated to management plans' formulation and implementation, infrastructure, and office endowment for Protected Areas management enforcement were assessed for the short term. Overall, the results show that the project is very likely to generate large welfare gains.

51. Total economic benefits per mosaic and landscape are the following (optimal scenario):

Benefits calculated as prevention or reparation costs							
Mosaic	**Landscape**	**Municipalities**	**Intervention areas (ha)**	**Main land use**	**Proposed productive system**	**Total benefit 15 years (thousands of US$)**	**Ecosystem services included in the calculation**
Cocuy /Cinaruco	Flooded savannas of Arauca and DNMI Cinaruco	Arauca and Pto. Rondon	885	Livestock	Silvopastoral	1,690	CO2 sequestration, increase in water flow and regulation, ecotourism, and avoided erosion.
		Arauca and Arauquita	4619	Livestock	Agriculture/silvopastoral	1,780	
	Wetlands of Casanare	Paz de Ariporo and Tamara	4479	Agriculture	Agriculture/silvopastoral	341	
	Flooded savannas of Casanare	Paz de Ariporo and Hato Corozal	4265	Agriculture	Agro-forestry	1,630	
	DMNI Cinaruco	Arauca and Cravo Norte	322,000	Livestock	Management Plan implementation, endowment with infraestructure and equipment	307	
Bita/Tuparro	Bita-Meta-Orinoco Corridor and BR El Tuparro	Puerto Carreno and La Primavera	31,351	Agriculture/silvopastoral	Agro-forestry	11,982	
		La Primavera	9386	Forestry for protection/production	Agro-forestry	3,587	
		Puerto Carreno and La Primavera, Cumaribo	1.372.535	Agriculture/silvopastoral	Management Plan implementation: Bita Basin, and BR and PNN El Tuparro	226	
Total						**21,544**	
Sources: Valoración Economica de los Recursos Biológicos del Pais. Edmundo de Alba, Maria Eugenia reyes. Mexico. 1998.							
Biodiversidad de la Cuenca del Orinoco: bases cientificas para la identificacion de areas prioritarias para la conservacion y uso sostenible							
de la biodiversidad. Instituto Humboldt, WWF, Fundacion Omacha, Fundacion La Salle, Instituto de Estudios de la Orinoquia. 2010.							

F. INNOVATION, SUSTAINABILITY AND POTENTIAL FOR SCALING UP

52. *Innovation:* the projects are innovative in several ways, providing territorial development inputs for:

- the sustainable use of soil-water-environment of 9.8 million hectares, 39 percent of the available area, in the Departments of Vichada, Casanare and Arauca.
- the articulation of competitive production through the formalization of property, resolution of boundaries' discrepancies, and land titling in 1.5 million hectares of the Meta Department.
- areas for conservation-production, in approximately 8.6 million ha, 34 percent of the region, located in Vichada, Arauca and Meta.

53. *Sustainability*, the Orinoquia demands an innovative and sustainable development policy, whose strategies, investments and physical goals guarantee changes towards:

- the Meta River fulfills its role of articulating axis of the multimodal transport and commerce of the region.
- the Ariari region (Meta) is potential in the regional and national food supply, it is even a cluster of sustainable agricultural development with export possibilities.

- the cities of Yopal, Arauca and Puerto Carreño, strength their articulating role within the region's cities network to increase commercial exchange.
- Vichada requires additional investment efforts in infrastructure and access to credits to guarantee its economic and social integration to the rest of the country.
- the region diversifies its agricultural and ecosystem services supply. The agricultural and livestock sectors would increase the area used and its productivity based on research and development of genetics.
- Ecotourism, forestry production, agriculture, livestock, aquaculture and the conservation of ecosystems and biodiversity constitute complementary and interdependent economic activities.

54. *Potential for scaling up*, the potential to expand the coverage of this GEF project in the Orinoquia is expected in areas of strategic regional environmental importance such as:

- Meta-Casanare river corridor, in the alluvial plains of the municipalities of Orocué, San Luis de Palenque, Trinidad in Casanare; Santa Rosalia in Vichada and Puerto Gaitán in Meta; this corridor expands and presents eco-systemic connectivity with Casanare and Arauca wetlands, which are part of the intervention areas.
- ii) Cusiana River Corridor, in municipality where the main tributaries of the river are located.
- iii) Meta River High Corridor, located in that Department, in part of the municipalities: Castilla La Nueva, San Carlos de Guaroa, Acacias, Villavicencio, Restrepo, Cumaral, Cabuyaro, Upía Ravine and Puerto López.
- iv) Upper Guaviare river corridor, in the Andean piedmont, south of Meta, which involves areas of the municipalities of Macarena, Vista Hermosa, Mesetas, San Juan de Arama, Puerto Lleras, Puerto Rico, Fuente de Oro, Granada, El Castillo and The Golden. This corridor includes the PNN Sierra de La Macarena and the PNN Tinigua.

G. Conclusion

55. **This economic analysis conducted for the GEF 6 Orinoquia Project shows an overwhelmingly positive economic impact.** The results of the quantitative assessment are also robust across a range of sensitivity analyses assuming significant changes in discount rates and key benefit parameters. Throughout the analysis, benefit assumptions were built towards a minimum scenario and an optimal scenario. The optimal scenario corresponds to one where all targets are reached and there is a maximum efficiency in time. The optimal scenario depends on additional investments that strengthen a market for the environmental services provided by this GEF project and their associated.