



Gobierno de Reconciliación y Unidad Nacional
El Pueblo, Presidente!

2017
TIEMPOS DE *Por Gracia de Dios!*
VICTORIAS!

MARENA
Ministerio del Ambiente y los Recursos Naturales



Strategy to reduce emissions from deforestation and forest degradation.

ENDE - REDD+

2018 - 2040

MARENA
Ministerio del Ambiente
y los Recursos Naturales



ENDE-REDD+
National Avoided Deforestation Program
Nicaragua

**Strategy to reduce emissions from deforestation
and forest degradation**

Version to be approved by the World Bank

June 27, 2017



Table of Contents

Figures

Tables

Acronyms

I. Introduction	1
II. National Context	2
Socioeconomic aspects	2
Policy Aspects and Legal Framework	3
III. Implementation Framework.....	6
Distribution of Benefits	8
IV. Participatory Construction of ENDE-REDD+	9
V. Land Use and Causes of Deforestation and Forest Degradation.....	12
Present forest coverage	12
Deforestation	13
Causes of Deforestation	17
Fundamental causes.....	18
Direct Causes	19
Underlying or Indirect Causes	22
VI. The Strategy's Goals	28
Goals.....	28
Geographic Scope.....	28
Duration	29
VII. The Strategy's Axes and Lines of Action.....	29
VIII. ENDE-REDD+ Implementation Road Map.....	36
IX. Environmental and Social Management Framework.....	42
Political Aspects and Legal Framework.....	42
X. Implementation and Monitoring of the Environmental and Social Management Framework.....	49
XI. Reference Levels for ENDE-REDD+	49
XII. ENDE-REDD+ Measuring and Monitoring System.....	52
XIII. Financing scheme	57
Bibliography	59
Annexes	60



Figures

Figure 1 ENDE-REDD+work groups	7
Figure 2 Summary of work group activities	9
Figure 3 Female leaders of the RACCN exchanging experiences.....	11
Figure 4 Land Use in Nicaragua.....	13
Figure 5 Forest Generation and Reforestation, 2007-2016.....	14
Figure 6 Municipal Annual Deforestation Rates 2005-2015.....	15
Figure 7 Problem tree for nationwide deforestation and forest degradation	17
Figure 8 Value of main Nicaraguan export products, 2015.....	19
Figure 9 Dynamics of forest cover, pastures and crops at the national level, in the Caribbean regions and in the PCN, 1983-2015	20
Figure 10 Dynamics of annual and perennial crops in the Caribbean regions and the PCN, 1983-2015.	21
Figure 11 Geographic distribution of farmlands.....	22
Figure 12 Deforestation process at the agricultural frontier in Nicaragua	23
Figure 13 Components of the Strategy.....	28
Figure 14 National approaches supporting the guidelines for sustainable production and conservation	30
Figure 15 Structure of the ENDE-REDD+ Strategy	37
Figure 16 World Bank Safeguard Policies	46
Figure 17 Main decisions on the construction of the FREL	50
Figure 18 Inter-institutional team of the ENDE-REDD+ MRV round table	51
Figure 19 FREL Work Lines	51
Figure 20 Proposed Structure of the National Monitoring, Reporting and Verification System .	53
Figure 21 Structure of the Forest Monitoring System (SNMB), integral subsystem of the SNMRV	54
Figure 22 Responsibilities and technical aspects of institutions involved in the MRV.....	54



Tables

Table 1 Themes of workshops carried out during the readiness phase for the ENDE-REDD+ Strategy	10
Table 2 Participation in the formulation of the ENDE-REDD+ Strategy.....	11
Table 3 coverage, forest loss, total annual and relative deforestation rates per year between 1983 and 2015.	14
Table 4 Importance of factors contributing to forest degradation in the Caribbean Regions and the PCN	17
Table 5 Strategic guidelines, goals and actions of the National REDD+ Strategy (ENDE-REDD+).	33
Table 6 Legal framework for ENDE-REDD+	43
Table 7 World Bank safeguard policies activated for ENDE-REDD+	46
Table 8 Linkage between UNFCCC safeguards, WB and the Nicaraguan legal framework.....	46



Acronyms

*acronym in Spanish

BCN	Nicaraguan Central Bank
BICU	Bluefield's Indian and Caribbean University
CONAFOR	National Forestry Commission
CONAGAN	National Commission of Cattle-Ranchers
CRACCN	Regional Autonomous Council of the North Caribbean Coast
CRACCS	Regional Autonomous Council of the South Caribbean Coast
ENDE	National Avoided Deforestation Strategy
FCPF	Forest Carbon Partnership Facility
FONADEFO	National Forestry Development Fund
FREL/FRL	Forest Reference Emission Level/ Forest Reference Level
GEF	Global Environment Facility
GEI	Greenhouse Gas Emissions
GEO	Global Environmental Outlook
GIS	Geographic Information System
GIZ	German International Cooperation
GRACCN	Regional Autonomous Government of the North Caribbean Coast
GRACCS	Regional Autonomous Government of the South Caribbean Coast
GRUN	Government of Reconciliation and National Unity
GTI	Indigenous Territorial Government
IDB	Inter-American Development Bank
ILO	International Labor Organization
INAFOR	National Forestry Institute
INETER	Nicaraguan Institute for Territorial Studies
INGEI	Inventory of Greenhouse Gases
INIFOM	Nicaraguan Municipal Development Institute
INTA	Nicaraguan Institute for Agricultural Technology
IPCC	Intergovernmental Panel on Climate Change
MAG	Ministry of Agriculture
MARENA	Ministry of the Environment and Natural Resources
MEFCCA	Ministry of Family, Cooperative, Community and Associative Economy
MGAS	Environmental and Social Management Framework
MHCP	Ministry of Finance and Public Credit
PGR	Office of the Attorney General
PI-PCN	Indigenous People of the Pacific, Central and North regions
PN	National Police
PNDH	National Human Development Plan
PNF*	National Forestry Program
RACCN	North Caribbean Coast Autonomous Region
RACCS	South Caribbean Coast Autonomous Region
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RL	Reference Level
SERENA	Secretariat for Natural Resources and the Environment
SINIA	National Environmental Information System
SNMB	National Forest Monitoring System



SNMRV

National Monitoring, Reporting and Verification System

SPPN*

Private Secretariat for National Policies

UNFCCC

United Nations Framework Convention on Climate Change

WB

World Bank

I. Introduction

(The Strategy for Reducing Emissions from Deforestation and Forest Degradation (ENDE-REDD +) is based on the National Constitution. The constitutional mandate states that "The Nicaraguan State recognizes the person, family and community as the origin And end of its activity, and is organized to ensure the common good, assuming the task of promoting the human development of each and every Nicaraguan ... "This responsibility is fulfilled through a model of Dialogue, Alliance and Consensus. Allowed the welfare of the nation and I care for Mother Earth.)

In Article 60, the Political Constitution establishes that "We must protect and restore the integrity of the ecosystems, with a special focus on biological diversity and all the natural processes which sustain life." Nicaragua is the first signatory state to the Universal Declaration of the Common Good of the Earth and Humanity; by this commitment, the country assumes obligations in accordance with its Constitution, as well as commitments to set patterns for production and consumption that protect Mother Earth's vitality and integrity, develop the sustainable use of available clean energy, and implement initiatives and projects for climate change adaptation and sustainable forest management.

The National Human Development Plan (PNDH) specifies these approaches through its objectives: "economic growth with job creation and elimination of poverty, inequalities, as well as the eradication of hunger. This process will have to be sustainable by making wise use of natural resources and protecting the environment, to ensure the well-being of future generations and life on earth...the protection of natural resources, adaptation to climate change and comprehensive disaster risk management". In this framework, the country is fostering actions for afforestation, reforestation, conservation and regeneration of forests, and the national zoning map serves as guidance for the reforestation and natural regeneration of forests.

In this context, the present proposal for the STRATEGY TO REDUCE EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION has been worked out on the basis of the model of inclusion, dialogues, alliances and consensus with indigenous and Afro-descendant people, families, workers, farmers and the private sector. It represents an opportunity to strengthen the implementation of the National Environmental and Climate Change Strategy and the Biodiversity Strategy, and to consolidate national investments and attract international ones, with the objective of reducing natural disasters risks, protecting and/or restoring degraded water resources and ecosystems, restoring landscapes, protecting biodiversity, capturing carbon and generating an economic alternative for complementary income for families linked to the protection of the natural forest heritage of the Nicaraguan State.

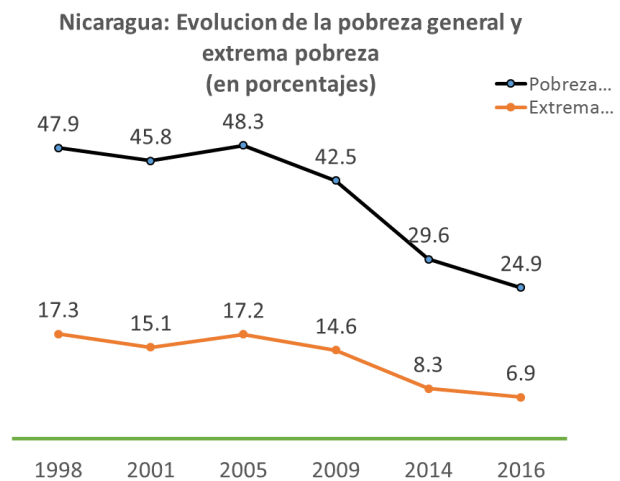
II. National Context

Socioeconomic aspects

Nicaragua is the largest country in Central America, with a territory of 130,373 km² and a population of approximately 6 million, with an annual demographic growth rate of 1.0% (INIDE, 2015). The Government of Reconciliation and National Unity continues implementing the PNDH, whose priority is to foster the country's socioeconomic development and reduce poverty.

Over the last years, the country has reached a privileged macroeconomic situation compared to the rest of the Latin American region: it is characterized by job growth, price stability, fiscal sustainability, as well as a healthy national financial system with a good credit rating. 2016 was the sixth year of robust growth and macroeconomic indicators performed positively. Economic activity grew by 4.7 percent, supported by the sectors of service, mainly commerce, financial intermediation public administration and defense, followed by agriculture and the manufacturing industry. Low international fuel prices had a favorable effect on income and consumption, a tendency also backed by the boost in infrastructure investments.¹

The macroeconomic performance was also reflected in an improvement of social indicators. General poverty decreased by 4.7. percent, passing from 29.6 percent in 2014 to 24.9 percent in 2016, and extreme poverty from 8.3 percent to 6.9 percent in 2016. This indicates that of every 100 Nicaraguans, 25 are living in poverty and seven in extreme poverty.² The Gini coefficient³ was 0.33 in 2016, which is 5 points less than in 2014 when it was 0.38.



Source: INIDE 2016

The average yearly growth of the Gross Domestic Product between 2011-2015 was 5.2%, a result of the macroeconomic policies in combination with a constant growth of exports and foreign direct investment; the latter were mainly due to the country's openness towards the private sector, and the alliance between government, entrepreneurs and workers. This alliance has been decisive to maintain the national stability, combat poverty and extreme poverty. It facilitated the

¹ Nicaraguan Central Bank. Annual Report 2016

² National Institute for Development Information. Poverty and Inequality Report. EMNV2016

³ Cuando el coeficiente asume el valor de 1, significa que existe total desigualdad y cuando asume el valor 0 significa que existe igualdad. A Gini coefficient = 1 means total inequality, if it is =0 it means equity

advance of the country's economic and social development as well as the comprehensive restitution of the rights of Nicaraguans, to overcome inequality and leave extreme poverty behind.

However, the economic growth has been to the detriment of the country's natural resources. Extensive cattle ranching is one of the most important causes for environmental degradation, as it is the main reason for land-use change; sugar-cane monocultures affect aquifers, and the cultivation of the staple grains corn and beans, mostly in hilly areas with shallow soils, lead to accelerated soil erosion.

Policy Aspects and Legal Framework

In the framework of good governance, important progress has been made as to legislation and public policies, strengthening the process of autonomy for the Caribbean Coast regions, land titling lands in territories of indigenous and Afro-descendant people, as well as in other parts of the country.

The ENDE-REDD+ strategy is based on a solid legal structure. The Nicaraguan Political Constitution recognizes and guarantees rights to different forms of property, rights on the use of lands and natural resources, mechanisms for citizen participation, participation in the management and the right to opt for incentives. In 1987, the rights of indigenous and Afro-descendant people were restituted by constitutional precepts, and these commitments and rights were later ratified by the adoption of ILO Convention No. 169 on indigenous and tribal peoples. Nicaragua has advanced enormously in the titling of almost 96% of indigenous territories, the remaining 4% correspond to Alto Wanky in the Jinotega region.

In relation to the environment, Article 60 of the Constitution establishes the fundamental right of all Nicaraguans to live in a healthy environment, and the obligation of preserving and protecting it. The Constitution also includes: "...caring for Mother Earth as the highest and universal common good, subject to dignity, she must be loved, cared for and regenerated. Making a call to protect and restore the integrity of ecosystems with a particular concern for the biological diversity and all natural life-sustaining processes. The Nicaraguan nation must adopt patterns of production and consumption that ensure Mother Earth's vitality and integrity...".

Over the last years, Nicaragua has designed public policies to define the state's course in environmental matters. It was the first country to sign the Universal Declaration of the Common Good of the Earth and Humanity. As to the problem of climate change, in 1993 the country approved and ratified the Regional Climate Change Agreement, which includes the obligation of Central American countries to create regional mechanisms for economic integration and cooperation to make rational use of the environment, so as to protect the climate system for the benefit of present and future generations. The Agreement stipulates that the States must, each according to its capacities, implement national programs and take measures to ensure the conservation of the climate within and outside of its jurisdiction.

In 1996, the country included principles of international legal instruments ratified by Nicaragua into its framework of environmental laws, and it has created special laws for the regulation of forests, protected areas, biodiversity, water, earth, and others, from a perspective of sustainability. The country has also adopted and ratified various conventions on forests, biodiversity, climate change, desertification, indigenous people, protection of the ozone layer, control of dangerous substances, and others. In accordance with the Constitution, these conventions have become part of the national legislation.

In general, the government's development and environmental policies are based on a new culture and new values: stakeholders of the general population and public institutions joining efforts to achieve sustainable development and preserve the environment, in order to improve the quality of life of the Nicaraguan people. The PNDH 2012-2016 emphasizes protection and sustainable use of natural resources, adaptation to climate change and comprehensive disaster risk management.

In Nicaragua, there are important policies ruling land use. The General Zoning Policy states the following in its guidelines: "to promote actions to convert the territory into a booster for programs and projects aiming at the sustainable use of natural resources, spatial distribution of human settlements, the development of a better organized and articulated economy in accordance with the natural potential of the territory's resources, the protection of the population and their belongings in the face of the effects of natural phenomena", and "to strengthen inter-institutional coordination in conformity with Law 290, its regulations and other legal provisions; for the purpose of land-use planning and in order to avoid the duplicity of efforts, financial resources and functions, which weakens the government's management in the eyes of local actors, its credibility before donor agencies, and limits comprehensive development."

In the General Framework for Land Policies, the Nicaraguan government conceives secure land tenure as an essential element for economic stability, good governance and social harmony in the country. Under this approach, the government has delivered land titles to 23 indigenous territories, which represent 35% of the national territory. It is a government priority to continue improving the legal certainty, with a view to boosting the economic and social development of the country. This policy promotes the productive and sustainable use of the land and its components, with the objective of recovering its true value as an economic, social and cultural factor. From this perspective, the regulation of land ownership, the consolidation of land rights and the operational integration of public policies in the territory are the axes aiming at economic and social development of the Nicaraguan people.

The National Policy for Sustainable Development of the Forestry Sector⁴ states that Nicaraguan families can improve their quality of life by gradually establishing a community-based model of sustainable forest use and management, including agroforestry and agroindustry, in articulation with other actors of rural and non-rural, national and international value chains, based on land-

⁴ Executive Decree 69-2008

use planning focused on environmental conservation and national sustainable production for food security and sovereignty.

In addition to these policies, there also are strategies related to the conservation and management of natural resources:

- **National Climate Change Strategy⁵**, which among its guidelines includes sustainable land use, and proposes advancing in land-use zoning with a watershed approach, to ensure adequate land use and spatial planning in rural and urban areas.
- **Development Strategy for the Caribbean Coast, Alto Wangki and Bocay:** an effort to articulate and complement national, regional and territorial public policies with the National Human Development Plan, giving priority to the recovery of community and personal values, such as the respect for Mother Earth and living in harmony with nature, as the inspiring principle for life in community.

Additional national plans and programs are:

- **Plan for Production, Consumption and Trade 2016-2017**, which promotes sustainable and environment-friendly farming that preserves forests, makes rational use of water, and uses inputs, fertilizers and pesticides which reduce damage to earth and protect biodiversity.
- **National Forestry Program:** its mission is the promotion of an equitable, consensus-based and articulated sustainable development that allows for the efficient and effective offer of goods and services stemming from agroforestry and forestry systems, with the participation of public and private sector, indigenous and Afro-descendant peoples and ethnic communities; thereby establishing a community-based sustainable forest use and management model, including agroforestry and agroindustry, that contributes to the food security and sovereignty of the Nicaraguan people.
- **National Reforestation Plan:** establishes the national lines of action for the recovery of areas devoid of forests.
- **National Plan for the Prevention and Control of Wildfires:** includes annually renewed instruments that articulate strategic inter-institutional efforts coordinated by a commission composed of entities such as CD-SINAPRED, INAFOR, MARENA, Civil Defense, MINED, Firefighters, Attorney General, National Police.
- **The Program for Reconversion of Cattle Ranching** (promoted by cattle-ranchers), with the objective of reconverting cattle farms into integrated silvopastoral models to increase the current indices for meat and milk production by at least 20%. It strengthens the development of sustainable cattle ranching by improving productivity in all corresponding indices of the sector, in order to secure national consumption of its by-products as well as the export quota.

⁵ Published on April 6, 2016.



III. Implementation Framework

ENDE-REDD+ Institutional Arrangements

Solid national organizational processes have made it possible to prepare and make significant advances in the national ENDE-REDD+ Program. The ENDE-REDD+ institutional process is conducted by a structure of three work groups to lead the processes of dialogues, consultations and consensus-building. This governance platform facilitates the participation of different government institutions, universities, environmental organizations, farmers, rural communities, indigenous and Afro-descendant peoples, all representing the national, regional and territorial levels:

- (i) Group (I) has a strategic political role in the decision-making processes at the highest levels: here, strategic guidelines are proposed for the readiness and implementation phases of the ENDE-REDD+. The Group is composed by the Production, Consumption and Trade Cabinet, represented by the following institutions:

Ministry of the Environment and Natural Resources (MARENA), Ministry of Agriculture (MAG); National Forestry Institute (INAFOR), Ministry of Family, Cooperative, Community and Associative Economy (MEFCCA), Ministry of Economic Promotion, Industry and Commerce (MIFIC), Nicaraguan Institute for Agricultural Technology (INTA), Institute for Agricultural and Livestock Health and Protection (IPSA), Institute for Fisheries and Aquaculture (INPESCA), Ministry of Finance and Public Credit (MHCP); Nicaraguan Institute of Territorial Studies (INETER); Private Secretariat for National Policies (SPPN), Secretariat for the Development of the Caribbean Coast (SDCC). Authorities of the Governments of the North and South Caribbean Autonomous Regions, representatives of the territorial governments of indigenous and Afro-descendant peoples in the Autonomous Regions of the Caribbean Coast, Bosawas and Indio-Maíz; representatives of the indigenous peoples of the Pacific, central and Northern Region; representatives of the Public Prosecutor's Office; Attorney General's Office; National Police and Nicaraguan Army.

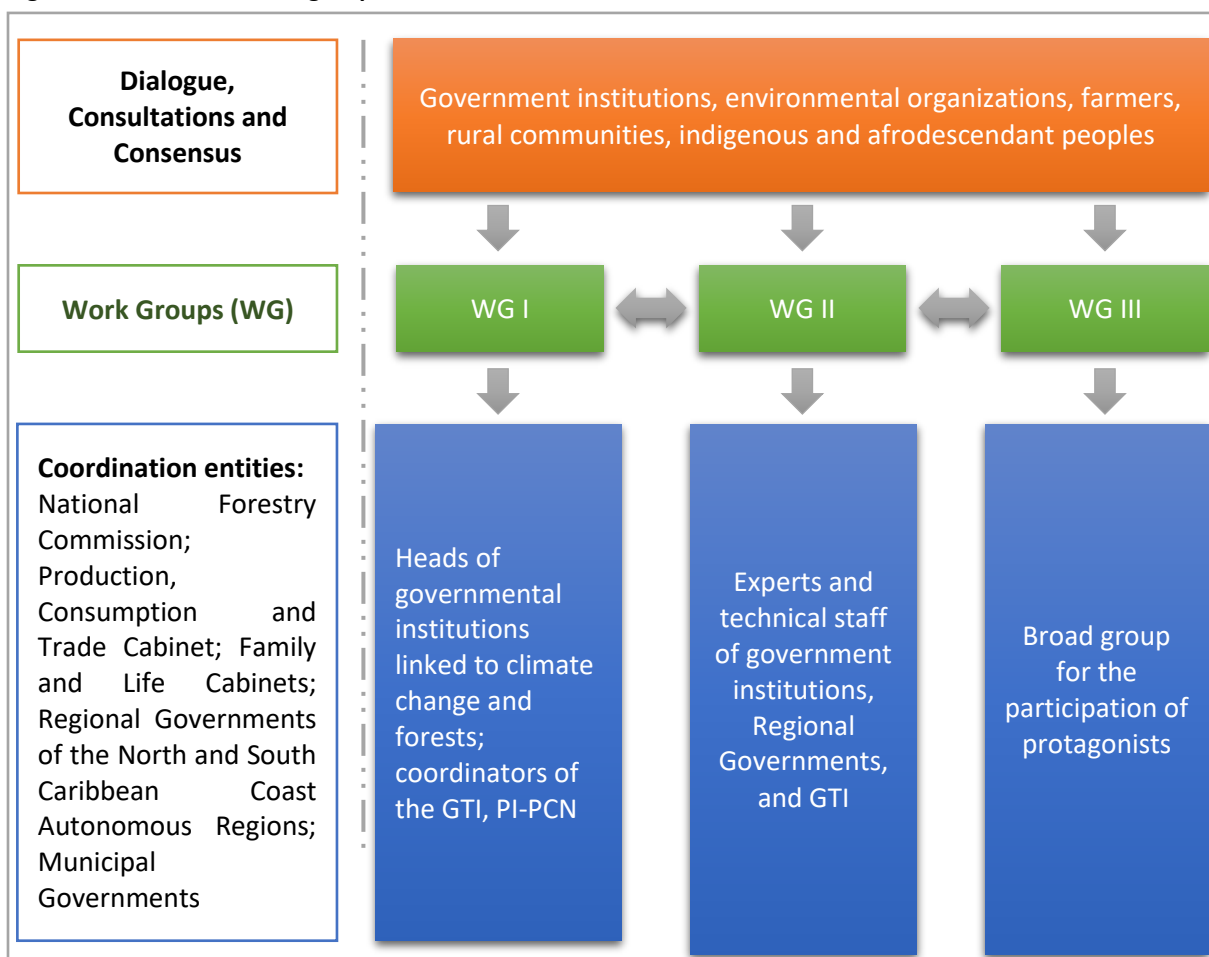
- (ii) Group (II) is in charge of enhancing the technical process of the ENDE-REDD+ and plays an important role in coordinating the strategic political level with the implementation and dialogue with the protagonists. It gives technical assistance and sets out needs, concerns and appeals from different social and productive sectors related to the topics of the ENDE-REDD+. The group is composed of experts of the institutions working on forestry policies, environment, climate change, research and technological innovation and information systems. Group II includes representatives of the institutions MARENA, INAFOR, INETER, MAG, SE-SINAPRED, GRAAN, GRAAS, the Nicaraguan Army and National Police, indigenous and Afro-descendant territorial governments, indigenous territories of the Pacific, Central and Northern region, universities, timber producer organizations and the agricultural sector.



- (iii) Group (III) is an entity for dialogue, consultation and consensus-building that allows for a broader participation for protagonists at the national, regional, territorial and community level. The Ministry of the Environment and Natural Resources is in charge of the national call, the call for the Caribbean Coast Autonomous Regions is made through the authorities of the North and South Caribbean Coast Autonomous Regions. Group III collects information, makes consultations and obtains inputs for the different ENDE-REDD+ processes. This group is composed of farmers, youth, women, members of the Family, Community and Life Cabinets, universities, environmental organizations, general population, members of the indigenous and Afro-descendant peoples, representatives of organizations, sector and other associations working on the themes forests, climate change, production, and others, as well as institutions of the public sector, municipalities and governments of the Caribbean Coast Autonomous Regions.

The structure for the development of dialogue and consensus is composed of the three work groups: Group I makes high-level decisions on public policies and strategic guidelines; Group II, is formed by the technical team advising and presenting recommendations to Group I; and Group III is an open space for community participation and consultation (Figura 1).

Figure 1 ENDE-REDD+work groups





Distribution of Benefits

In its legal framework for forest management⁶, Nicaragua establishes a choice of incentives for forest development to promote the involvement of natural or juridical persons in the sustainable management of forest resources, and thus increase the national forest coverage and reverse the country's deforestation. The distribution of utilities from exploitation fees⁷ is regulated by the law, based on the legal concept that the owner of the soil possesses the forest stand⁸. Through this measure, the state has been able to transfer monetary resources to communities, municipalities and regional government authorities of the Caribbean Coast Autonomous regions, where forest resources are exploited sustainably.

Carbon rights are not specifically regulated in this country; however, the Nicaraguan Political Constitution recognizes property rights, and carbon rights are closely linked to property rights and rights over forest resources. The state fully recognizes the land tenure and the owners' usufruct of the forest.

On the basis of the country's norms and experience, a clear, equitable and efficient mechanism will be designed for the distribution of utilities generated by REDD+ initiatives.

The REDD+ utilities are conceived in terms of carbon and co-utilities for the country. The distribution of benefits will be based on the norms and policies of the State. The distribution of benefits at the national level will take into account the reduction of carbon dioxide emissions into the atmosphere due to diminished deforestation and forest degradation, conservation and sustainable forest management, as well as the increase of forest carbon stocks in the country.

In the framework of the national efforts to reduce deforestation and forest degradation, the Ministry of Finance and Public Credit is chairing a Financial Assistance Team for the management of investments for the reduction of deforestation, forest degradation and vegetation cover increase. One of its functions is to define the financing modalities for projects with REDD+ components, according to criteria of fiscal sustainability and macroeconomic stability.

Equally, the Financial Assistance Team together with the ENDE-REDD+ Social and Legal Team will discuss and define complaint procedures and mechanisms, so that beneficiaries have the means to present complaints when necessary.

⁶ Law 462, Article 28, establishes that the state shall promote and give incentives for forest restoration, its protection and conservation, and shall establish the regulations to ensure the restoration of conservation areas.

⁷ Art. 48 of Law 462 and its amendments state: "For the right to exploitation, a single payment shall be established per extracted cubic meter of round timber from natural forests, and it shall be fixed at six percent (6%) of its price...". Art. 49. -"The amount of revenue collected by the State in form of exploitation fees, fines, renewal fees, auctions of forfeited property in conformity with the stipulations of the present law and its regulations, shall be paid to a special account kept for this purpose by the General Treasury of the Republic..." In the Caribbean Coast, 25% shall be distributed to the indigenous community or communities of origin of the resource that is to be exploited, 25% shall be destined to the municipality, 25% to the corresponding Regional Council and Government and 25% to INAFOR through FONADEFO; in the rest of the country, 35% shall go to the municipalities of origin of the exploited resource and 65% to INAFOR.

⁸ Article 4, definition of forest stand: All trees, bushes, woody plants and other vegetable species on the soil. Regulations for Law Nr. 462, Law for the conservation, promotion and sustainable development of the forestry sector, Decree no.73-2003, published in the Official Gazette No. 208 on November 3, 2003.



IV. Participatory Construction of ENDE-REDD+

The design of the ENDE-REDD+ strategy was based on the model of Faith, Family and Community and the model of Alliances, Dialogue and Consensus, which have made it possible to analyze, formulate, consult and build consensus on the challenges of climate change, causes of deforestation and degradation of forests, and to draft proposals to tackle the environmental and social problems and risks implied by these proposals or strategic guidelines.

During this process, MARENA has been joined by many economic and social actors: national government institutions, Regional Governments of the Caribbean Coast Autonomous Regions, Indigenous Territorial Governments, Municipal Governments, families of indigenous and Afro-descendant peoples as well as rural communities, forest owners, farmers, academia, social organizations and the private sector.

The work groups were in charge of the readiness activities; following is a description of each group's dynamics:

Chaired by MARENA and with active participation from the heads of INAFOR, MAG, MEFCCA, MHCP, INETER, Private Secretariat for National Policies, Secretariat for the Development of the Caribbean Coast, Regional Governments and leaders of Territorial Governments, Work Group I ensured the inclusion of ENDE-REDD+ into the coordination spaces for highest-level national decision-making: the Production, Consumption and Trade Cabinet, CONAFOR, PRO-Nicaragua⁹ and development cooperation agencies. This group has also held dialogues with private enterprise through organizations of the farming sector, especially the National Commission of Cattle-Ranchers, CONFOR¹⁰, owners of private forests, Chamber of Forest Professionals, financial sector, and development cooperation agencies.

Figure 2 Summary of work group activities



This group has reviewed the technical progress in the preparation for ENDE-REDD+, as well as for the Emission Reduction Program, implementing its recommendations and ensuring the corresponding approvals for the negotiations with the FCPF and WB.

Work Group II has requested the creation of inter-institutional thematic round tables. Four working tables were established: coordination for monitoring and follow-up on the ENDE-REDD+

⁹ PRONicaragua is the agency for the promotion of investments in Nicaragua, a public-private institution whose mission is the generation of economic growth and creation of jobs in Nicaragua by attracting high-quality foreign direct investment.

¹⁰ National Commission of Reforesters (*Comisión Nacional de Reforestadores*)



program; a round table in each Autonomous Region for the Social and Environmental Strategic Evaluation; a round table for social communication, which has been accompanying the ENDE-REDD+ construction process; and a round table for the design of the Monitoring, Reporting and Verification System and the fixing of reference levels. This group has been in charge of the preparation of the ToRs, planning of local activities, methodological approaches and technical proposals.

Work Group III has been the space for dialogues and consultations at the national, regional and local levels with stakeholders from indigenous and Afro-descendants peoples, rural communities, women and farmers. It facilitated the exchange of information, validation and consultation on ENDE-REDD+, the causes for the deforestation and degradation, the analysis of the related legal framework, the rights and safeguards of indigenous and Afro-descendant peoples, the analysis of environmental and social risks, as well as topics related to Forest Reference Levels and Monitoring and the ER-PIN.

The readiness phase implied permanent coordination, communication, collaboration, consultation, articulation, appropriation and empowerment in decision-making regarding the design and management of ENDE-REDD+. Each drafted document is backed by a participatory process, as can be observed in the table on the workshops that were carried out.

Table 1 Themes of workshops carried out during the readiness phase for the ENDE-REDD+ Strategy

No	Themes	Workshops	Participating stakeholders
1	Workshops to exchange information (presentations), with women, cattle-ranchers, communicators	35	1698
2	Workshops to design the mechanism to strengthen communication	13	786
3	EESA Workshops (Safeguards, Legal Framework, Guidelines)	18	640
4	Consultation Workshops (including presentations to the CRACCS)	10	667
5	GIS, FREL and Monitoring Workshops (including needs assessment)	15	379
	Total	91	4170

ENDE-REDD+ has strengthened the autonomy process in the Autonomous Regions by consolidating the leadership of the Regional and Territorial Governments, SERENA, the Forest and Environment Consultative Committee (CCF-A). Dialogues were also held with organizations of indigenous women. This process ensured the free previous and informed consent of the



Miskitu, Sumu-Mayagna, Ulwa, Creole, Garifuna and Rama peoples, as well as of the Council of the Indigenous Peoples of the Pacific, Central and Northern Regions.

In the dialogues and consultations, farmers expressed their commitment to supporting ENDE-REDD+, recognizing environmental services provided by forests, and declaring their will and need to include environment-friendly, low emission farming practices.

There was an overall participation of 8,650 protagonists, 60% of them men and 40% women; 22% of the group were young people and 49% were stakeholders of indigenous and Afro-descendant peoples, as detailed in Table 2.

Table 2 Participation in the formulation of the ENDE-REDD+ Strategy

Distribution of ethnic groups by % among participants in the preparation of ENDE-REDD+							
<i>Mestizos</i>	<i>PI-PCN</i>	<i>Miskitu</i>	<i>Mayagna</i>	<i>Rama</i>	<i>Ulwa</i>	<i>Afro-descendants</i>	
51	3	24	11.8	0.5	0.2	9.5	
Distribution of background of stakeholders in %							
<i>Central Government</i>	<i>Regional Government</i>	<i>Indigenous Territorial Government</i>	<i>Municipal Government</i>	<i>Academia</i>	<i>Organizations</i>	<i>Army</i>	<i>Development Cooperation Agencies</i>
19	15	34	5	2	24	1	1



Figure 3 Female leaders of the RACCN exchanging experiences



V. Land Use and Causes of Deforestation and Forest Degradation

Present forest coverage

According to INETER, the Nicaraguan territory of 13,037,340 million ha is covered and used as follows¹¹: 39% (5,089,472 ha) are destined to farming (annual crops, perennial crops and pasture), 30% (3,938,670 ha) are covered by forests, 18% (2,406,005 ha) are covered by secondary vegetation (bushes, natural savannah and brushwood), 9% (1,129,101 ha) are covered by water (lakes, crater lakes and rivers), and 4% (474,092 ha) correspond to other uses, as shown in Figure 3.

Nicaragua's forests are classified into broadleaf, conifers, mangroves and palm forests. In 2015, broadleaf forests covered 3,484,135 ha in total (2,166,721 ha closed forest and 1,317,414 ha open woodland) and pine forests 263,840 ha (100,177 ha closed and 163,663 ha open). The remaining 190,695 ha of forest areas are distributed almost equally between mangroves (98,186 ha) and natural palm forests (92,509 ha).

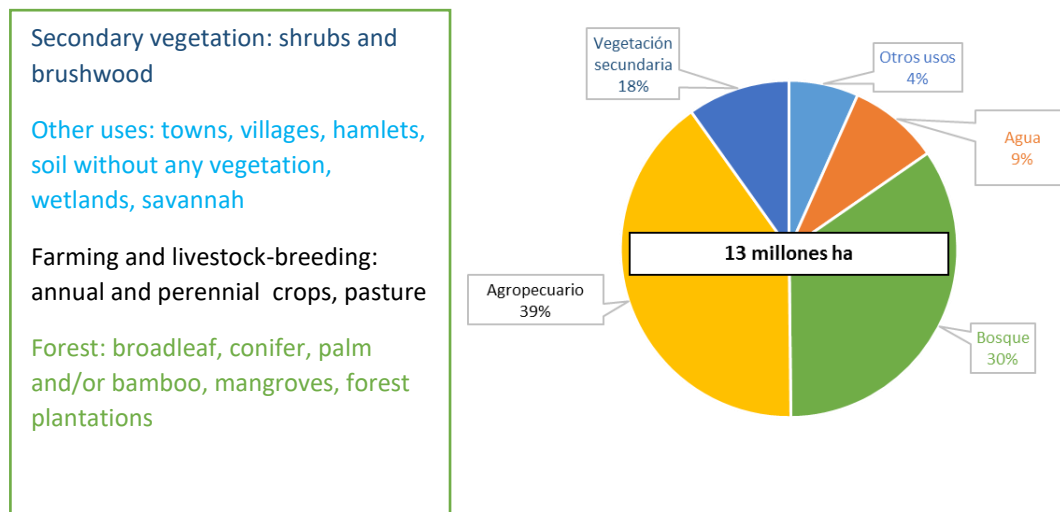
Almost 89% of the forests (3.19 million ha) lie in the Caribbean Coast region (which includes the North Caribbean Coast Autonomous Region – RACCN and the South Caribbean Coast Autonomous Region – RACCS), the BOSAWAS Biosphere and the Indio-Maíz Biological Reserve. These regions are inhabited by more than a million people whose well-being depends on the forests.

The remaining approx. 750,000 ha lie in the country's Pacific, Central and Northern regions. Jointly, these regions host 70 ecosystems, 13 of the most important hydrographic basins.

¹¹ The 2015 coverage map is presently being reassessed by INETER; total areas could differ at the end of this process. Source: Made in-house for ENDE-REDD+



Figure 4 Land Use in Nicaragua.



Deforestation

Between 1983 and 2015, Nicaragua lost 4.32 million hectares of forest, more than half of its forest cover. The loss of dense broadleaf forests (approx. 4 million ha) accounted for 93% of total deforestation, and almost all remaining deforestation was owed to the loss of dense pine forests (approx. 350,000 ha). The amount of sparse forests of any kind, mangroves and palm forests changed little over this period.

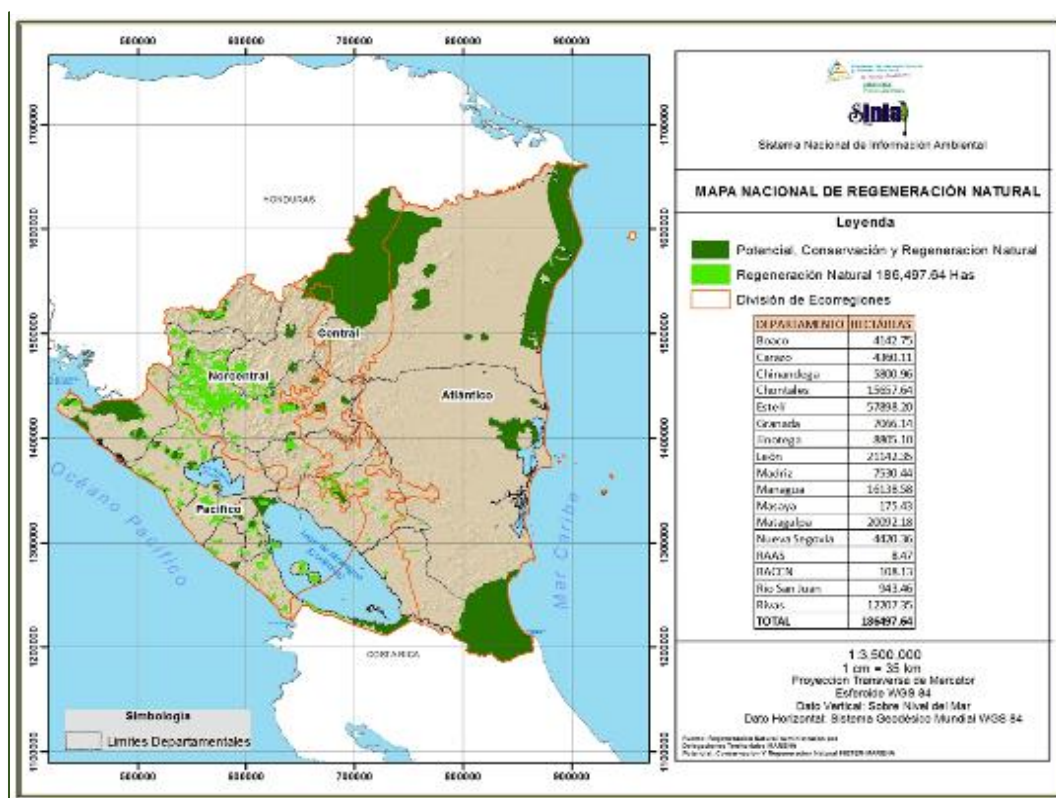
Between 1983 and 2005, deforestation rates were high, over 165,000 ha/ year, and the forest losses took place mainly in the country’s Central Region, in pine forests in the North Caribbean Coast Region, and in areas to the east of Prinzapolka. Part of the deforestation was caused by Hurricane Joan in 1988, which hit half a million hectares.

Since 2005, deforestation has decreased sharply in the Caribbean regions, and forests have recovered in the Pacific, Central and Northern Regions. This change was due to the difficult access to remaining forests and a recovery of 161,178 ha of forests: partly as a result of national reforestation programs (approx. 32,000 ha); the rest regenerated between 2007 and 2016 (Figure 4). It should be pointed out that in the Pacific, central and Northern Regions, a recovery of 200,000 ha of forests took place (Table 2).

Table 3 coverage, forest loss, total annual and relative deforestation rates per year between 1983 and 2015.

Variable	1983	2000	2005	2010	2015
Nation					
Forest coverage (ha)	8,255,861	5,449,384	4,545,859	4,049,257	3,938,669
Forest loss (ha)		-2,806,476	-903,525	-496,602	-110,588
Total annual forest loss (ha/año)		-165,087	-180,705	-99,320	-22,118
Relative deforestation rate per year (%)		-2.0	-3.3	-2.2	-0.5
Caribbean					
Forest coverage (ha)	6,013,844	4,552,479	3,913,874	3,491,224	3,188,867
Forest loss (ha)		-1,461,365	-638,605	-422,649	-302,357
Total anual forest loss (ha/año)		-86,021	-127,721	-84,529	-60,471
Relative deforestation rate per year (%)		-1.4	-2.8	-2.2	-1.7
Pacific, Central, Northern regions					
Forest coverage (ha)	2,146,986	854,204	586,984	513,130	713,441
Forest loss (ha)		-1,292,782	-267,220	-73,855	200,311
Total anual forest loss (ha/año)		-76,046	-53,444	-14,771	+40,062
Relative deforestation rate per year (%)		-3.5	-6.3	-2.5	+7.8

Figure 5 Forest Generation and Reforestation, 2007-2016

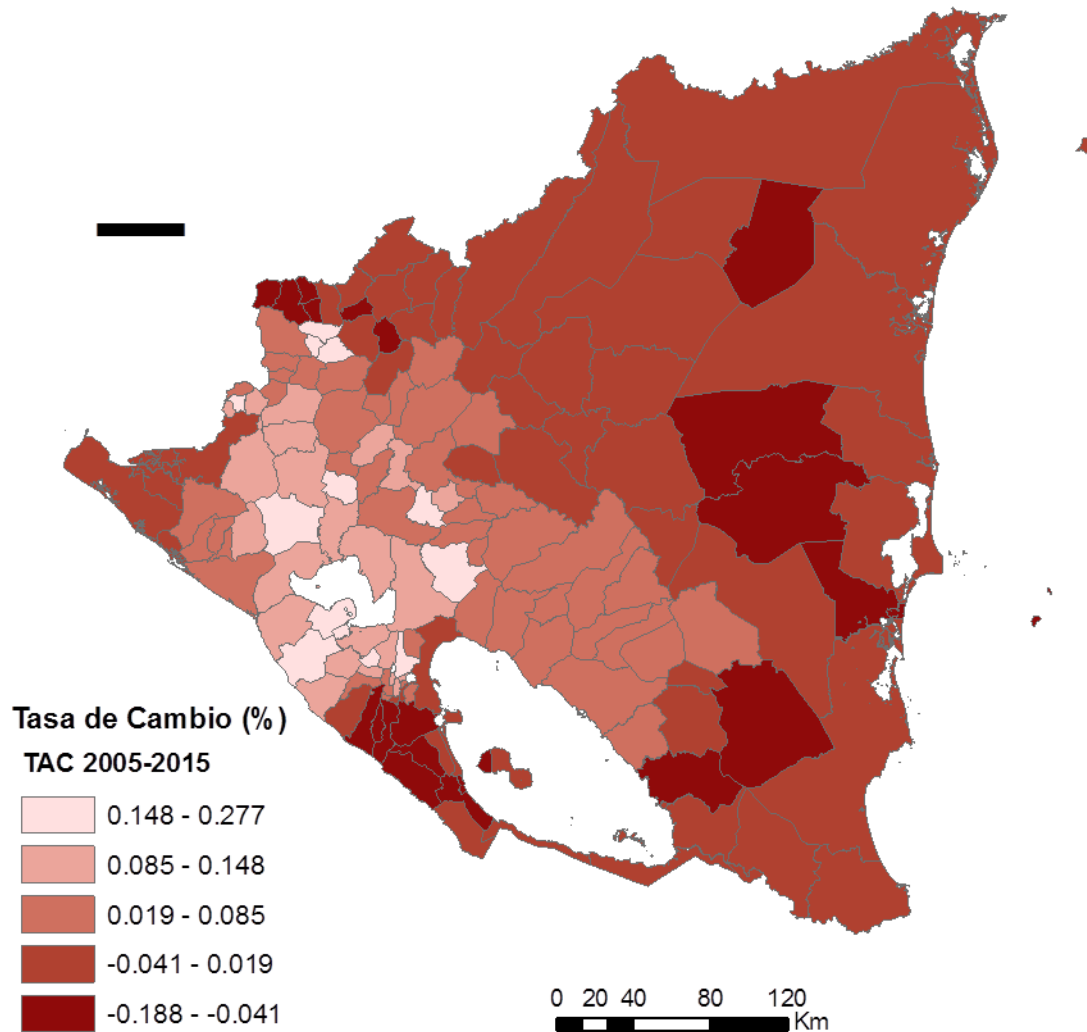




Geographically, deforestation has advanced gradually, from the Pacific coast to the country's Central Region and then to the Caribbean Region (Figure 5). Deforestation in the Caribbean region represented half of the national deforestation between 1983 and 2000, but grew to 70% in 2000-2005, 85% between 2005 and 2010, and 100% between 2010 and 2015.

Between 2005 and 2015, the highest relative deforestation rates in the Caribbean Region occurred in the municipalities of Rosita, La Cruz de Rio Grande, Kukra Hill, Nueva Guinea, and El Almendro (Figure 6). In the Pacific Region, the highest rates belong to Jinotepe, La Conquista, Carazo, Belén, Tola and Rivas. In the Central-Northern Region, deforestation took place mainly in Dipilto, Ocotal, Macuelizo, Santa María, Ciudad Antigua, San Juan del Rio Coco.

Figure 6 Municipal Annual Deforestation Rates 2005-2015





Forest Degradation

In general, forest degradation has been poorly quantified. Its main causes are legal and illegal logging for different uses of wood, and wildfires.

Historically, firewood and carbon produced from biomass have been the main source of fuel used in Nicaragua, although in recent years their importance and growth rate have diminished. In 2008, firewood represented 47% of total energy consumption (MARENA et al., 2011). The majority of firewood is consumed in residential and commercial areas, 5% in the industrial sector and 6% in the production of charcoal. At present, the consumption of firewood is estimated at 1.81kg/person/day. Firewood generates employment for about 250,000 persons who are permanently occupied with its extraction; 75% are small and medium-sized rural producers. However, many firewood-collectors do not comply with legal norms or techniques and therefore jeopardize this resource's sustainable use.

Legal logging is estimated to be as high as illegal logging, with a total amount of 500,000 m³/year, the largest part of which comes from the Caribbean Region. 20,000 ha are estimated to be affected by wildfires every year, 20% of these occurring in the Caribbean Region, the rest in the Pacific, Central and Northern regions. In both cases, it is estimated that the wildfires consume half of the biomass.

On the basis of these data and assumptions, estimations were made on the contribution of wildfires, logging and extraction for firewood to forest degradation. This analysis suggests that forest degradation is responsible for the loss of approximately 2.62 Mt Carbon/year, 85% of which in the Pacific, Central and Northern Regions. Consequently, in these regions the main focus of an intervention program must be forest degradation.

Forest Degradation

This analysis includes data and assumptions for each cause of degradation: extraction of firewood, legal and illegal logging and the effect of wildfires.

Firewood: consumption is 1.81 kg/person/day (ENL, 2006-2007), the population of the Caribbean Region is of 670,000 inhabitants = 442,635 t of biomass firewood/year = 221,317 t Carbon/year. In contrast, firewood consumption in the rest of the country is estimated to be 1.88 million Mt Carbon/year.

Legal and illegal logging: legal logging amounts to 250,000 m³/year, the illegally logged volume is similar, in total: 500,000 m³/year = 300,000 t of biomass/ year = 150,000 t Carbon/year. It is estimated that its great majority stems from the Caribbean region.

Wildfires: The national average of damages by wildfires over the last 10-15 years is 20,000 ha/year (MARENA, 2016). Under the assumption that 20% of wildfires occur in the Caribbean region (due to the wet climate), that 50% of the biomass is burnt, and that carbon constitutes half of the biomass, then: 20,000 ha x 0.2 x 0.5 x 0.5 = 1000 ha x 95 t Carbon/ha = 95,000 t Carbon/year. For the rest of country, firewood harvesting is estimated in 380,000 t Carbon/year.

In total, degradation impacts 2.64 Mt Carbon/year, 0.38 Mt Carbon/year in the Caribbean and 2.26 Mt Carbon/year in the PCN.



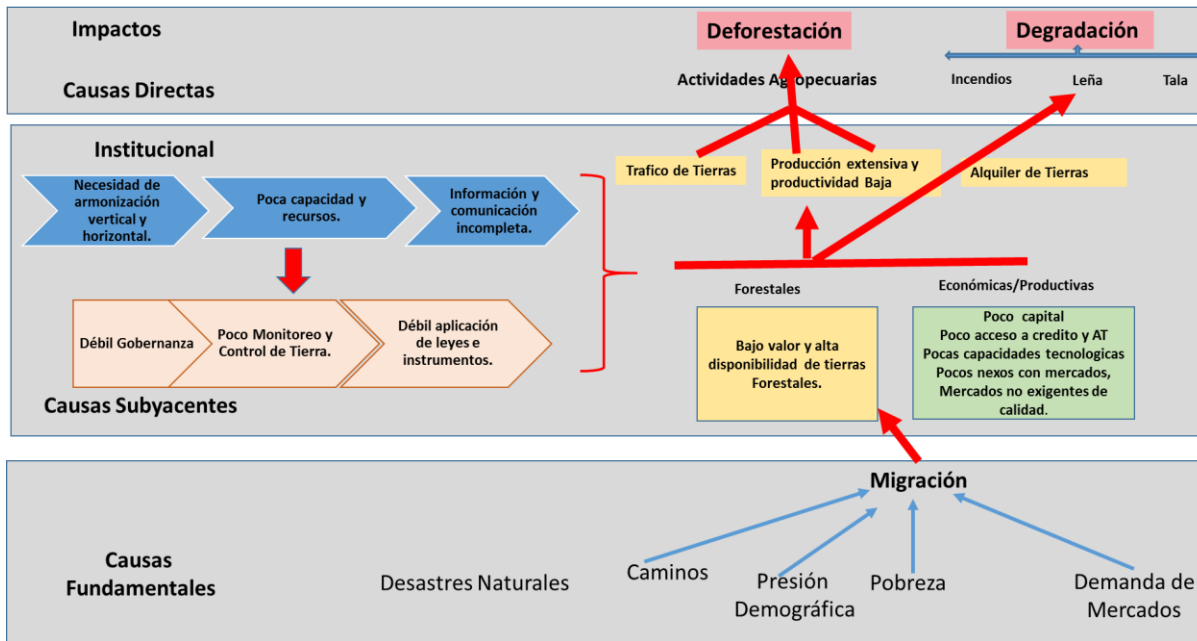
Table 4 Importance of factors contributing to forest degradation in the Caribbean Regions and the PCN

Country area / Direct causes	Firewood	Wildfires	Logging
Caribbean	X	X	XX
PCN	XXX	XX	X

Causes of Deforestation

The causes of deforestation can be divided into direct causes, intermediate underlying causes, and fundamental causes, as shown by the problem tree in Figure 7.

Figure 7 Problem tree for nationwide deforestation and forest degradation



Source: Study Causes of Deforestation for the Emission Reduction Program - MARENA ENDE-REDD + 2017.



Fundamental causes

In Nicaragua, the fundamental causes of deforestation and forest degradation are: demographic pressure, poverty, roads, human migration from the Pacific Coast and Dry Corridor towards the Caribbean region, and the favorable market conditions for agricultural products; these processes are difficult to control or solve in the short or medium term.

The population, mainly poor and rural and concentrated in the Pacific coast region, is growing at an annual rate of 1.4%. This generates a growing demand for land, increases its price and reduces its availability. Farmers on the Pacific coast are thus encouraged to sell their lands to export crop farmers at relatively high prices, and then migrate to the Central and Caribbean region, where the land is cheaper (Polvorosa, 2015).

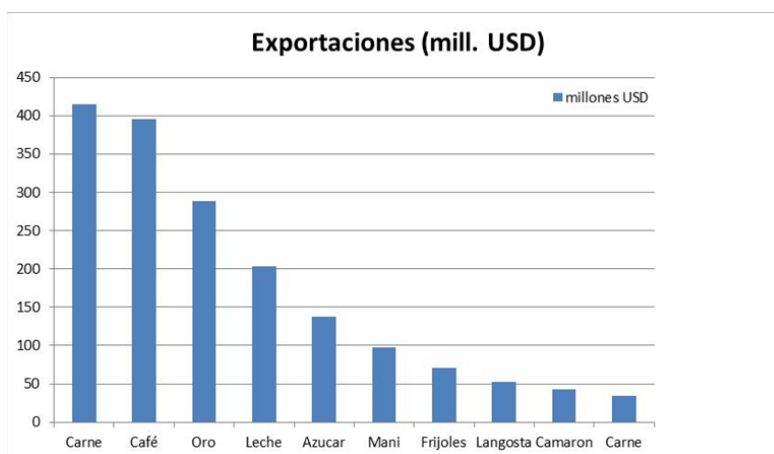
In addition to these spontaneous migrations, there have been migrations related to the agricultural colonization of the 1970s, to the resettlement of demobilized troops at the beginning of the nineties, especially in the RACCS and RACCN, and to the orientation of development policies and programs towards promoting traditional and extensive agricultural activities (staple grains and extensive cattle ranching). In the settlement areas, colonists change forest lands to agriculturally used lands, a process encouraged by credit policies that attribute a higher value to “improved” (i.e. deforested) lands.

The favorable market conditions for agricultural products and the expansion of the agricultural sector also encouraged migrations, and consequently deforestation. Over the last decade, the agricultural sector expanded due to free trade agreements with Central American countries and the U.S.A. In 2015, of the five main export products in terms of value, four stemmed from the agricultural sector: meat (US\$ 454.3 million), coffee (US\$ 392.3 million), dairy products (US\$ 218.2 million), and sugar (US\$ 153.0 million); together with gold (US\$ 317.9 million), these products represented 63% of the total value of exports (BNC 2015).

In recent years, the export of meat and dairy products has also grown. Between 2000 and 2009, the cattle ranching sector grew at an annual rate of 5%, and between 2006 and 2015, the value of exports from cattle ranching products rose by 176% (TechnoServe, 2017). In 2015, 3 out of 10 main exports products were related to cattle ranching (Figure 8), with a combined value of approximately US\$700 million, the dairy sector with exports valued US\$ 203 million and the meat sector with US\$ 415 million. At present, the cattle ranching sector represents almost 10% of the GDP and contributes 25% of the total value of exports.



Figure 8 Value of main Nicaraguan export products, 2015



Source: <http://www.ico.org/documents/cy2015-16/Presentations/national-coffee-policies-nicaragua-march-2016.pdf>

Direct Causes

The main direct cause for deforestation at the national level is land use change from forests to agricultural purposes. Among the agricultural activities, cattle ranching has the strongest impact on forests. Between 1983 and 2010, pasture areas increased by almost 3.05 million ha throughout the country: 1.71 million ha in the Caribbean regions and 1.34 million ha in the PCN (Figure 9). However, between 2010 and 2015, pasture areas decreased by 580,000 ha nationally: approximately 120,000 ha in the Caribbean regions and 460,000 ha in the PCN.

The dynamics of pasture areas and forests are closely related. At the national level, pasture areas increased from 1.89 million ha in 1983 to 4.33 million ha in 2015, a net increase of 2.44 million ha, while the loss of forests was 4.32 million ha over the same period (Figure 9). In the Caribbean region, between 1983 and 2015 pastures increased by 1.58 million ha, while 2.2 million ha of forests were lost. In the PCN, a loss of approximately 1.7 million ha of forests between 1983 and 2010 was linked to an increase of almost 1.4 million ha of pastures. In the period 2010 – 2015, this connection was weaker: both pasture areas and forests decreased throughout the country and in the Caribbean regions (and were associated to increased crop areas, see below); however, in the PCN, the reduction of pastures was related to an increase of forests.

Crops, alone or hand in hand with cattle ranching, also contribute to deforestation. At the national level, the area for annual crops varied between 434,000 ha and 577,000 ha in the period from 1983 to 2015, due to a reduction from 550,000 ha to 360,000 ha in the PCN and a sustained increase from 27,000 ha to 149,000 ha in the Caribbean regions (Figure 9). During the same period, perennial crop areas multiplied by more than 3 times nationwide: from 76,000 ha to 165,000 ha in the PCN, and from 7,000 ha to 67,000 ha in the Caribbean regions. In both zones, the main increase occurred between 2010 and 2015. Perennial crops that increased most in the Caribbean regions include cocoa and oil palms.



Figure 9 Dynamics of forest cover, pastures and crops at the national level, in the Caribbean regions and in the PCN, 1983-2015

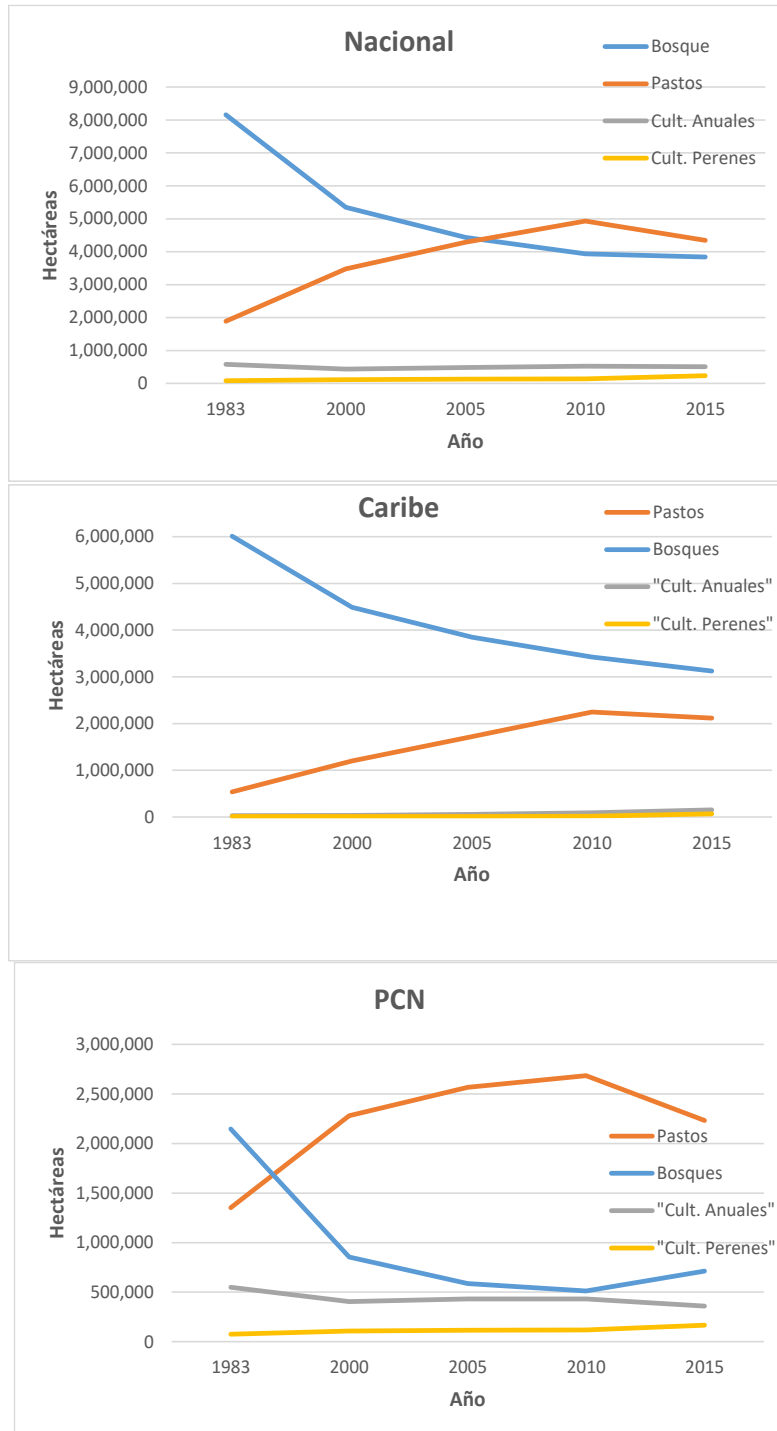
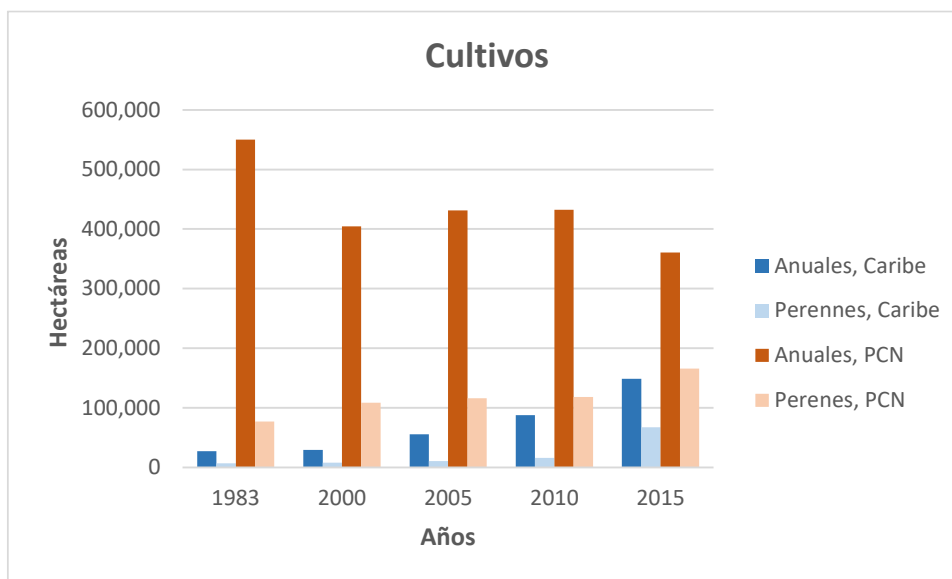




Figure 10 Dynamics of annual and perennial crops in the Caribbean regions and the PCN, 1983-2015.

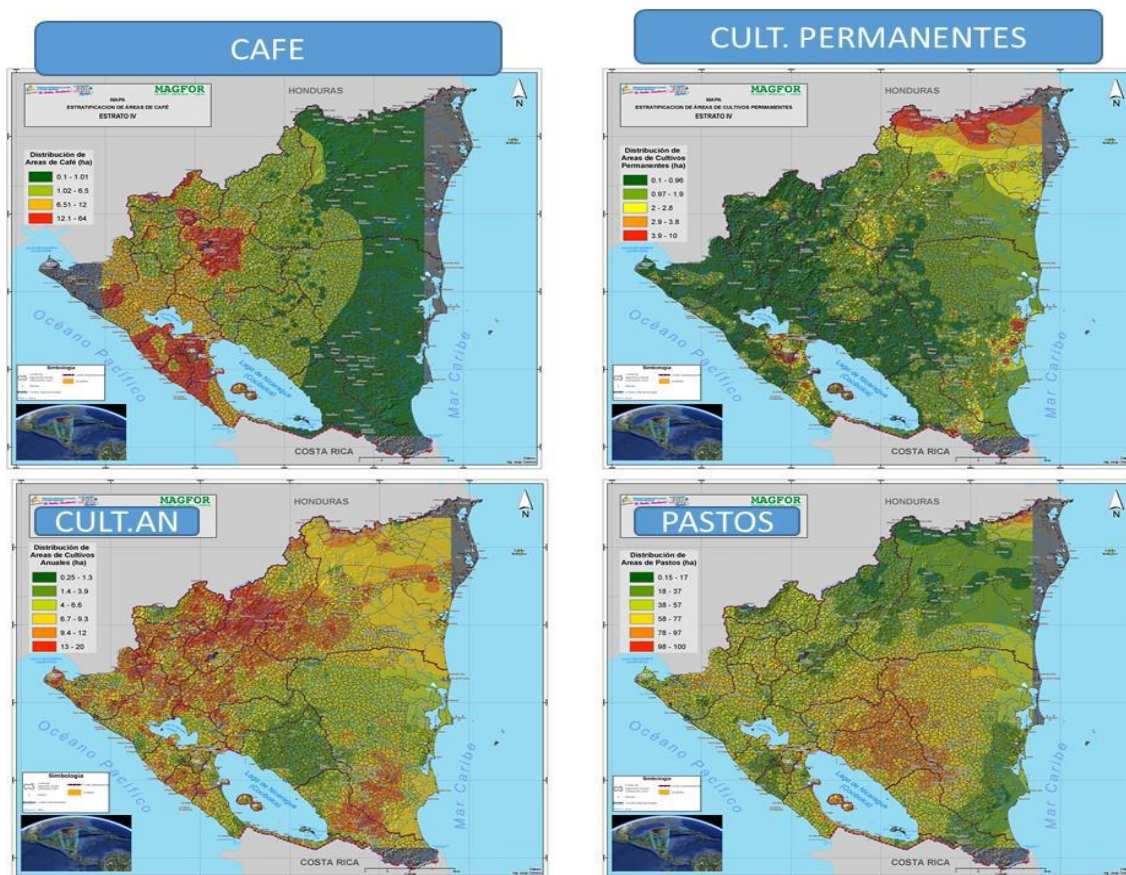


In the case of cattle ranching as well as farming, production and cultivated areas grew at a faster pace than their yields, which confirms that increased demand for these products has been satisfied by extensive production systems, to the detriment of forests. The Private Secretariat for National Policies (SPPN) exposed the issue in detail, indicating that the inefficiency of the farming sector has been one of the causes for deforestation in the country. Over the last 50 years, a strong increase of areas cultivated with red beans and white corn was observed, but few changes as to the yields. On the other hand, crops requiring higher levels of mechanization and capital (rice, sorghum, sugarcane) show significant yield increases.

Currently, the geographic distribution of crops is as follows: annual crops are mainly grown in the Pacific region and Dry Corridor, perennial crops in the North Caribbean Coast region, around Bluefields in the RACCS, and in the area around Masatepe in the Pacific region; coffee is found in the Central and Pacific highlands; and pastures in the Central and Caribbean region (Figure 11). Sugarcane is grown in the Pacific region and cocoa and oil palms in the RACCS.



Figure 11 Geographic distribution of farmlands



Underlying or Indirect Causes

Underlying Economic/Agriculture-related Causes

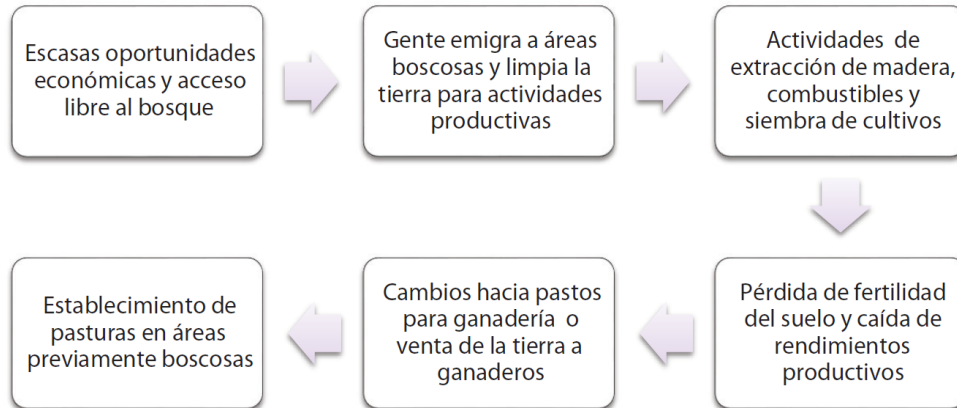
Underlying causes can be grouped into economic/agricultural and institutional. Among the underlying agricultural causes are: low agricultural productivity and low value of forest lands, as well as of forest products and services, low productive capacity of farmers, including low capitalization, little access to credits and technologies, and local and international markets with low expectations as to quality and farming methods.

The low value of forest lands is due to the undervaluation of the goods and services produced by forests, which makes it impossible for forest production to compete with alternative land use. Forest goods have a low value, as its production chains, such as the wood chain, are inefficient, of low productivity and without much added value; environmental services lack demand on the national market, and international markets have shrunk significantly.

On the other hand, low agricultural productivity on forest lands converted to agricultural use is linked to the low capitalization level and limited access to credits, resulting in low agricultural investment and poor technological capacities of farmers. In a context where forest lands and workforce are abundantly available and cheap, and the capitalization of farmers is low, they

choose to exploit forest lands to buy inputs, which leads to deforestation – once the productivity of the plots decreases, they are abandoned and new forest areas are converted to cropland and pasture. This linkage between agricultural processes and deforestation on the agricultural frontier is shown in Figure 12.

Figure 12 Deforestation process at the agricultural frontier in Nicaragua



Source: Polvorosa and Bastiansen, (2016)

Thus, changing forests into pasture or croplands is part of an extensive farming strategy characterized by the availability of low-cost land and workforce, meaning low production costs. For example, López (2012) mentions that *“In Nicaragua, animals are fed through extensive free grazing, and in buffer areas of the agricultural frontier pasture has a low cost compared to the rest of the country. While leasing grazing land in the Northern region costs between 150 and 200 Córdoba for one cattle/month, in the Caribbean regions the extensive forms of leasing land allow for prices of between 10 and 20 Córdoba cattle/month.”* These low-cost systems require little capital and produce relatively stable income, but the profitability for the majority of farmers is low. In the case of cattle ranching, this tendency is enhanced by the cattle ranching culture and the social status attributed to it.

The extensive use of land is also an element of other strategies of capitalization: farmers without capacity to invest in cattle lease their pasture, directly or under shared production arrangements, to bigger and more capitalized cattle-ranchers; or land speculation occurs, taking advantage of the “improvements” in the form of deforested lands with pasture, to sell them at better prices to more capitalized farmers of the Central or Pacific regions, then continuing the cycle in new areas of the agricultural frontier (Lezama, 2007).

This situation discourages intensive farming. Polvorosa and Bastiansen (2016), quoting White et al. (2001) and other actors, emphasize that *“whenever land prices are low, farmers will choose to expand production by incorporating more land; but as the land becomes more expensive and farmers cannot easily buy more of this factor, they will choose to increase production by using intensive farming techniques. This leads to the conclusion that scarcity of tropical forest is a necessary pre-condition for farmers to adopt intensive farming practices (Kaimowitz & Angelsen,*



2008; White et al., 2001, Translator's note: Quote was retranslated from Spanish into English). In this context, the loss of tropical forest in Central America can be explained mainly by the growing dynamic of agroexports, which has turned cattle ranching (and some crops) into a more profitable activity. Likewise, the barriers excluding some farmers from these opportunities (mainly small and/or poor farmers) push these to consider migrating to the agricultural frontier, especially in the face of high land price differences, which make this option attractive. Since Central America still has unprotected forest areas with free access, efforts destined to promote changes in farming are hindered and will fail to halt the advance of the agricultural frontier, as long as the agricultural system based on the purchase and increase of farmland persists (Tomich et al., 1998)."

Similarly, the SPPN (2016) indicates that "the abundance and low price of land, in combination with the low costs of workforce, has never motivated large farmers to increase their productivity levels through technological improvements, mechanization and irrigation, because the demand for agricultural products was satisfied by expanding the agricultural frontier, purchasing cheap land devastated by thousands of landless poor farmers."

Other factors contributing to the lack of investment and low productivity are:

Limited credit access

According to the SPPN (2016) "the percentage of the combined portfolio of all national private banks dedicated to agriculture is only 9%, an amount of approximately US\$316 million. Generally, these credits are aimed at large agricultural enterprises and those farmers who can present the corresponding guarantees and have a good organizational level on their farms. The case of cattle ranching is more distressing, as the percentage of the portfolio is only 2%, equivalent to approximately US\$72 million, with the same characteristics as the agricultural credit". In the case of the forestry sector, there never has been any credit at all. Additionally, small and medium-sized farmers face restrictions to access loans and the best markets, particularly if they are located at a distance of more than two hours off the main paths or roads.

Commercial banks and microfinance mention the following limiting factors:

- i. The complexity of value chains weakens their integration as well as the alliances between financial institutions and representative enterprises to make credit to farmers viable.
- ii. Limited long-term credit funds or financial products adapted to farming conditions
- iii. Limited or nonexistent technical assistance results in poor technology adaptation, and consequently in low productivity and high risk.
- iv. Farmers lack management and financial information, which makes it difficult for them to analyze the viability of their operations.
- v. High risk perception due to weak commitment to responsible payment culture

- vi. Land tenure, when only possession exists, but no ownership
- vii. Weak legal certainty as to contract compliance
- viii. Credit officers have little understanding about the sector's dynamics
- ix. Fundamental problems with *Produzcamos* or non-bank financial intermediaries
- x. High costs of credit transactions for unorganized and geographically dispersed farmers

Little technical knowledge and capacities.

Technical Assistance, Technology Transfer and Agricultural Extension are tools to guide farmers and their families and to build their knowledge, abilities and skills in various topics related to farming, administration and human relations, as a means to improve their quality of life. However, these have had limited coverage and their effectiveness was minimal. Según el IV CENAGRO del total de fincas existentes sólo un 17.4% de los productores recibieron algún servicio de asistencia técnica y/o capacitación; el 2.5% de ellos sólo recibieron asistencia técnica y principalmente de carácter temático. De ese 17.4% de fincas que recibieron algún servicio de asistencia técnica, hay que considerar que una buena proporción de ese tipo de servicio fue suministrado por técnicos de las casas comerciales expendedoras de insumos agropecuarios (abonos, semillas, pesticidas, etc.), plantas industriales, Universidades, proyectos de la cooperación, de las organizaciones de ganaderos, ONG, etc. According to the IV CENAGRO survey, only 17.4% of farmers have received some kind of technical service and/or training; 2.5% of them only received technical assistance, mainly of thematic nature. Of the technical assistance received by this group of 17.4% of farms, a considerable portion was offered by technical staff of commercial establishments selling agricultural input (fertilizers, seeds, pesticides, etc.), industrial plants, universities, projects of development cooperation, of cattle-ranching organizations, NGOs, etc.

Additionally, the fact that farmers are unaccustomed to associating and apply empirical know-how and management styles on their farms that have been passed down from one generation to the next, makes them unable to innovate, and they believe tradition can keep them viable even on a more and more demanding market – which contributes to a low productivity of farms.

For these and other reasons, in many cases the farming systems have not changed in 60 years. In the cattle ranching sector, it is interesting that, in spite of a great number of projects focused on sector improvement over the last decades, sector indicators continue to be low, showing little improvement (IICA, 2014). Programs for the restructuring of the cattle ranching sector, focusing on increasing the productivity and profitability of cattle ranching, have had undesired consequences and encouraged the expansion of cattle ranching to the detriment of forests.



Local and international markets with low expectations as to quality and production methods

The relative lack of capital and access to loans prevent farmers from investing in necessary infrastructure to comply with the quality standards of the best markets and invest in improved fodder or forage to increase their productivity. As they receive no bank loans, large cattle ranchers, buyers and providers of agricultural products as well as timber merchants have filled the void, with high intermediation costs charged on the product, and no requirements as to the farming system. The local market for agricultural products has been ruled by the search for cheap prices, without no interest for product origin, legality and quality. Even regional markets, mainly in El Salvador and Honduras, are undemanding as to the quality of agricultural products stemming from the agricultural frontier.

Underlying Institutional Causes

In recent years, the consolidation of Nicaragua's institutions has made significant progress. A legal framework was created and robust policies have been designed in relation to land rights and natural resources, environmental protection and sustainable development, and 31.4% of the country's total indigenous territory has been titled. Autonomy for the Caribbean regions has been established and they have been integrated to the rest of the country. At the economic level, forging alliances between the State, private sector and workers, and promoting private sector investment, in combination with achieving a good credit rating of the national financial system, has generated sustained growth, which allowed for the reduction of poverty and extreme poverty.

In order to be able to continue this positive evolution, the country needs to integrate and harmonize farming and environmental aspects more comprehensively at institutional levels. The considerable growth of the agricultural sector was based on a model of extensive and unsustainable farming systems, which have caused deforestation and forest degradation, invasion of protected areas and the loss or degradation of ecosystems, soils, water and biodiversity. These processes increase the country's vulnerability to climate change¹² and are diminishing the well-being of present and future generations.

The capacity to control the occupation and use of forest lands that are unused or damaged by natural disasters and to conserve protected areas is affected by a series of factors associated with the capacities of institutions to unify and align efforts, and to monitor, control and overview land use.

The weak application of success criteria based on economic, social and environmental considerations, as mentioned in the PNDH, reduces the effectiveness of government efforts, and opportunities are missed to include these considerations in the application of policies and

¹² According to the Global Climate Risk Index 2016 by Germanwatch, Nicaragua has been the fourth most vulnerable country to climate change over the last 20 years.



programs. The coordination and information flow between the national and departmental/regional levels has to be improved.

These factors, combined with insufficient resources (staff, equipment, infrastructure and financing), cause a series of problems, especially at the regional or local levels:

- Little institutional prioritization of environmental problems (the environment is not considered a priority in the National Budget)
- Weak institutional consolidation at the regional and local levels, especially in the far-off rural areas; insufficient application of management tools (leading to a system with many gaps, red tape, the incomplete coverage and effectiveness of programs, e.g. in the prevention and control of wildfires, use of lands damaged by hurricanes, and the effective implementation of tools such as forest management plans and domestic forest permits issued by indigenous territorial governments)
- Weak monitoring, control and overview of land use hampers the efficiency of the different government levels in the management of natural resources and their capacity to effectively respond to the pressure for land.



VI. The Strategy's Goals

Goals

The overall goals of the Strategy to reduce Emissions from Deforestation and Forest Degradation are:

To reduce greenhouse gas emissions caused by deforestation and forest degradation; conservation and improvement of forest carbon stocks; and contribution to the protection of Mother Earth in the face of climate change. At the same time, the Strategy is expected to help improve the quality of life of the Nicaraguan people and the resilience of ecosystems to climate change, and increase the flow of funds towards the environmental and forest sector to enhance their national as well as international positioning and competitiveness.

The Strategy's starting points are: government policies, economic progress, natural advantages, ongoing national programs and the problems described above (Figure 13). It employs alliances, dialogue and consensus for the purpose of building a prosperous Nicaragua with the capacity to mitigate and adapt to climate change, retribute rights and overcome poverty.

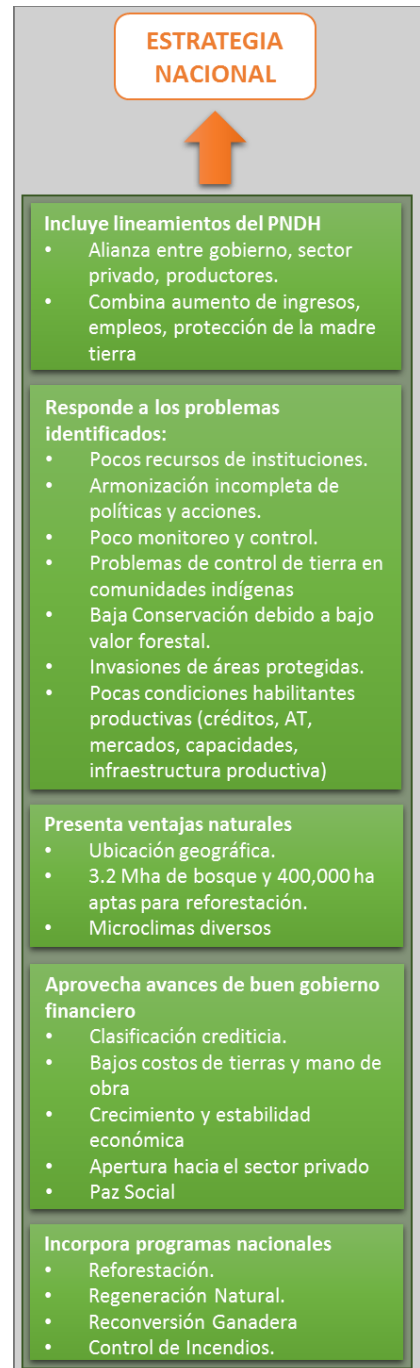
Geographic Scope

The Strategy will have a national scope. To design the necessary strategic actions, the country was divided in three big geographic areas: Caribbean Coast region, Central-Northern region and Pacific region.

Caribbean Coast

It is comprised by the Autonomous Region of the North Caribbean Coast (RACCN) and the Autonomous Region of the South Caribbean Coast (RACCS). The RACC represents 49% of the national territory and includes the Regime of the Special Zone of Development of the Territories located in the Upper Wangki and Bocay Basin. This area contains the vast majority of the country's forests.

Figure 13 Components of the Strategy





Central-Northern Region

The Central-Northern Region includes the Departments of Estelí, Madriz, Nueva Segovia, Matagalpa, Boaco, Chontales and Río San Juan (El Almendro, Morrito, San Carlos and San Miguelito).

Pacific Region

The Pacific Region includes the Departments of Chinandega, León, Managua, Masaya, Granada, Carazo and Rivas.

These regions have been defined as the PCN Region when referring to both regions as one; they have relatively few forests, but include a great part of private and public protected areas, the volcanic chain and the main remnants of the country's Natural Tropical Dry Forest, and various projects for natural regeneration and reforestation are located here.

Duration

This Strategy will help the country to reduce its deforestation rate by at least 50% until the year 2040¹³.

This reduction of deforestation will ensure additional forest benefits or co-benefits linked to the improvement of the main watersheds, improved water retention in superficial sources and aquifers, in addition to benefits linked to a stronger conservation and protection of biodiversity.

VII. The Strategy's Axes and Lines of Action

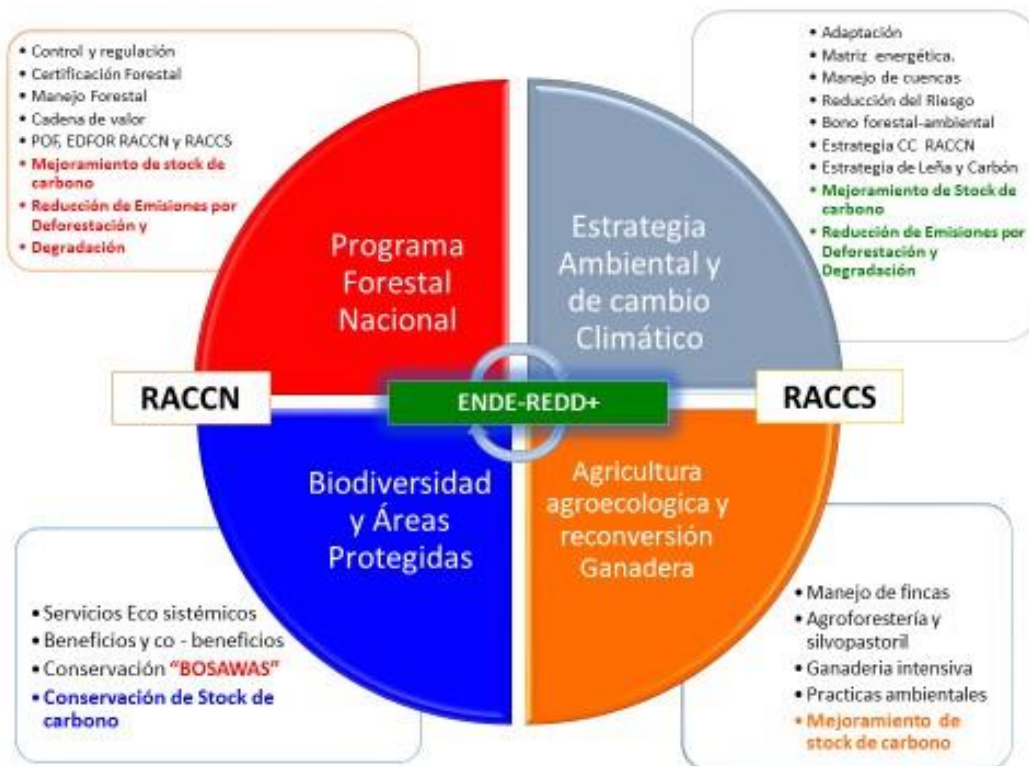
The Strategy's interventions are focused on removing the direct and underlying causes mentioned in the section *Causes of Deforestation*, although they do not directly target fundamental causes, such as the construction of the necessary infrastructure for the country's development, international markets, poverty, demographic expansion and migration, due to their structural nature. However, they are expected to have an indirect impact on markets, infrastructure and poverty.

ENDE-REDD+ is based on the promotion of sustainable forest production, food security, the stabilization of vulnerable areas, protection of water recharge areas, and the development of a funding mechanism. In addition, as an implementation platform it considers the strengthening of strategic alliances, interinstitutional coordination and forest governance, all according to their corresponding capacities.

¹³ According to the second INGEI, the country emitted 135000 GgCO₂eq over the period 1983-2000.

The umbrella structure of the interventions was built on a fundament of six pillars, or complementary strategic guidelines, supporting an approach of increasing sustainable forestry and farming while at the same time protecting forests (production-protection). The institutional pillar is focused on improving land use preconditions, the pillar of awareness-raising, communication and information is cross-cutting, and the indigenous pillar stresses the importance of indigenous and Afro-descendant peoples for the fulfillment of the Strategy.

Figure 14 National approaches supporting the guidelines for sustainable production and conservation



The pillars related to agriculture and conservation are based on national efforts in 4 strategic areas, as shown in Figure 14.

The six pillars or guidelines are:

- 1) Strengthening awareness-raising, education, communication and the fostering of values and information related to the protection of Mother Earth, taking into account the territorial identity and cosmovision of indigenous and Afro-descendant peoples
- 2) Strengthening the national, regional and local coordination and building capacities of governments for the management of land use and natural resources, in accordance with the laws and policies on forests, environment, agriculture and energy

- 3) Encouraging the protection, conservation and restoration of landscapes and biological corridors through afforestation, reforestation and natural regeneration in the Caribbean Coast region as well as the Pacific, Central and Northern regions.
- 4) Increasing sustainable and low-emission agro-forestry production, as well as the incomes of producers and number of jobs.
- 5) Encouraging investments and strengthening forestry and agricultural value chains with a focus on sustainable and low- emission markets, which value sustainability and reduced deforestation.
- 6) Strengthening climate change adaptation initiatives in territories of indigenous and Afro-descendant peoples of the Caribbean Coast, the Pacific, Central and Northern regions.

The pillar of awareness-raising, communication and information – Strategic Guideline 1 – is cross-cutting and focuses on improving public environmental education, the availability of information on natural resources to the general public and at all government levels, and institutional communication capacities.

The institutional pillar – Strategic Guideline 2 – is cross-cutting the other three pillars, and focuses on: inclusion of sustainability criteria and alignment of policies, programs and projects; building institutional capacities, in order to improve the monitoring and control of land use on the basis of surveillance systems allowing real-time monitoring and the development and implementation of response mechanisms; improving the enforcement of laws and land and application of natural resource management tools; and consolidating indigenous institutional structures linked to the use of land and resources.

The conservation approach – Strategic Guideline 3 – will boost the value of forests through the encouragement of activities based on sustainable forest use (e.g. Sustainable Forest Management, Community Forest Management, management of non-wood forest products), granting of incentives for forest conservation or recovery (e.g. natural regeneration), and the consolidation of protected areas. Indirectly, a more intensified use of agricultural lands, a result of the pillar for sustainable agricultural systems, will reduce the pressure on forests.

The pillar of low-emission sustainable agriculture – Strategic Guideline 4 – and the strengthening of investments and value chains under a sustainable market approach – Strategic Guideline 5 – are complementary. They are based on: a) the reduction of differential costs between the use of natural capital (forests) vs. financial capital (credit and inputs) to discourage the extensive use of forest land, b) the promotion of investments in sustainable agricultural systems, private or as an alliance between the State and forest owners, to foster productivity, employment and forest conservation through productive activities such as intensified cattle-farming, agro-forest and silvopastoral systems, and forest plantations, c) the improvement of product quality and access to differentiated markets, and d) the encouragement of private sector participation in the regions

by improving the political as well as socioeconomic preconditions, as well as productivity and competitiveness.

Wood production takes place in two scenarios: natural forests, and forest plantations for present and future industrial purposes. Both scenarios are relevant, as they contribute to the generation of rural employment, wealth and serve as the basis for a solid wood industry that has to face the challenge of positioning wood products with added value on the national and international markets.

According to INAFOR, at present Nicaragua owns 32,094 hectares of forest plantations, of which 17,944 ha are plantations with commercial purposes, and 15,150 ha are for conservation and protection. Among the most important species are: Teak, Melina (*Gmelina arborea*), Pacific Mahogany, African Mahogany, Pochote (*Bombacopsis quinata*), Roble (*Tabebuia rosea*), Ñambar (*Platymiscium pleiostachyum*), Laurel (*Cordia alliodora*), Guanacaste (*Enterolobium cyclocarpum*), Coyote (*Platymiscium pinnatum*).

Finally, the pillar of climate change adaptation initiatives in the territories of indigenous and Afro-descendant people – Strategic Guideline 6 – highlights the importance forest inhabitants play in forest conservation, and their vulnerability to climate change.

Many of these changes will depend on the success of monetary, tax as well as non-monetary incentives for individuals, families, territories as well as enterprises.

The linkages between strategic guidelines and actions are shown in Table 5.



Table 5 Strategic guidelines, goals and actions of the National REDD+ Strategy (ENDE-REDD+).

	Guidelines	Goals	Lines of action
1	Strengthening awareness-raising, education, communication and the fostering of values and information related to the protection of Mother Earth, taking into account the territorial identity and cosmovision of indigenous and Afro-descendant peoples.	To increase awareness-raising, availability of information related to the protection of Mother Earth and land use, and its communication by governments as well as the general public, with a focus on the common good and shared responsibility.	<ol style="list-style-type: none"> 1.1 Development of cultural campaigns that promote a healthy environment 1.2 Training teachers and social communicators on environmental topics 1.3 Facilitating exchange of experiences to foster knowledge about biodiversity and the country's natural treasures 1.4 Management of the knowledge derived from successful experiences of forest resource management and climate change adaptation 1.5 Ensuring the flow of necessary information for decision-making on land use and natural resources at regional and local government levels. 1.6 Inclusion of forestry and environmental policies and legislation into the educational contents of national education system 1.7 Contributing to the recognition of the cultural heritage and good environmental practices of indigenous and Afro-descendant peoples
2	Strengthening the national, regional and local coordination and building capacities of governments for the management of land use and natural resources, in accordance with the laws and policies on forests, environment, agriculture and energy	To encourage good governance of land use and natural resources by including consistent and shared criteria for environmental success, as well as an adequate level of resources to permit the implementation of effective monitoring and control systems and the application of laws, policies and tools for the management of land use and natural resources, especially in indigenous territories.	<ol style="list-style-type: none"> 2.1 Improvement of the coordination at the national, regional and local levels, especially the access and flow of information related to land use and natural resources. 2.2 Increasing the coverage and building management capacities of key institutions for the ENDE-REDD+, including the improvement of the equipment of regional governments and specific programs such as the campaign against wildfires, the monitoring and control of forest pests, the national reforestation crusade and the management of natural regeneration, as well as strengthening the application of natural resource management tools 2.3 Building the capacities of INAFOR, INETER and MARENA to monitor land use changes, supervise forest management plans and management plans for protected areas, as well as land-use planning for climate change adaptation. 2.4 Strengthening of the Early Warning Systems in the SNMRV by applying them in the Caribbean Coast and PCN regions, establishing an institutional plan and a response unit 2.5 Promoting the inclusion of criteria for climate change adaptation and sustainable management of forest ecosystems in agricultural and environmental policies as well as in land-use planning processes
3	Encouraging the protection, conservation and restoration of landscapes and biological corridors through afforestation, reforestation and natural regeneration in the Caribbean	To contribute to the conservation and expansion of forests through reforestation, sustainable forest management, natural regeneration, consolidation of protected areas, ecotourism, and forest conservation on farmlands,	<ol style="list-style-type: none"> 3.1 Granting agricultural incentives in dependence of forest conservation on farmlands 3.2 Promoting payments for ecosystem or conservation services to foster forest conservation in prioritized indigenous territories 3.3 Consolidating monitoring and control of Protected Areas (SINAP) 3.4 Promoting sustainable ecotourism 3.5 Promoting reforestation and natural regeneration under different modalities, especially for the production of firewood or forage banks.



	Coast region as well as the Pacific, Central and Northern regions.	as well as to the increase of forest values.	<p>3.6 Promoting reforestation and natural regeneration under different modalities (e.g. gallery forests, plantations, regeneration, enrichment planting in perforated forests, windbreaks) to maintain or restore ecosystem services (e.g. carbon capture, water recharge, protection of water resources, reduction of landslides and erosion by wind and water, conservation of protected areas, restoration of biological corridors).</p> <p>3.7 Promotion of sustainable forest management/community forest management for wood as well as byproducts or non-wood products, as a way to improve the production and conserve forests at the same time.</p> <p>3.8 Strengthening of the institutional framework and the protection, conservation and sustainable use of mangrove ecosystems, which are strategic to fishing, ecotourism and climate resilience of coastal areas.</p>
4	Increasing sustainable and low-emission agro-forestry production, as well as the incomes of producers and number of jobs.	To contribute to the transformation of traditional farms into profitable, sustainable and low-emission farming models, through trainings, technical assistance, improved credit access, and the organization of farmers.	<p>4.1 Promoting the organizational development of farmers, cattle-ranchers and foresters (cooperatives, associations, etc.) to improve their productivity and access to markets.</p> <p>4.2 Promoting successful experiences with silvopastoral systems, agroforestry, forest plantations, with a focus on sustainable low-emissions production in combination with forest conservation.</p> <p>4.3 Fostering technical assistance for groups with a commercial focus and best environmental practices.</p> <p>4.4 Facilitating access to credits (e.g. through guarantees, cost reduction and risk aggregation) linked with stipulations on the adoption of conservation measures</p> <p>4.5 Fostering research and development based on present needs, in order to define adapted and climate smart technologies</p> <p>4.6 Increasing use of degraded lands through plantations, SAF, and the management of natural regeneration.</p> <p>4.7 Promoting the quality and added value of products generated under zero deforestation schemes or carbon footprint reduction schemes (in agriculture, livestock-breeding and forestry).</p>
5	Encouraging investments and strengthening forestry and agricultural value chains with a focus on sustainable and low-emission markets, which value sustainability and reduced deforestation.	To contribute to the transformation of farming in the country by encouraging investments in sustainable and low-emission farming activities, diversification and intensified farming, with an approach of natural resource protection; taking advantage of ecological market niches, which implies the	<p>5.1 Promoting the capture of private investments and the model of public-private alliances and shared responsibility for sustainable and low-emission farming projects</p> <p>5.2 Fostering the strengthening and articulation of the value chain links of prioritized products (cacao, coffee, meat, milk, wood and staple grains), focusing on different markets and giving preference to green markets.</p> <p>5.3 Promoting linkages to new green markets or markets for sustainable products, especially to markets with meat coming from systems with reduced deforestation</p> <p>5.4 Promoting organizational eco-innovation and the organizational development of farmers and foresters (cooperatives, associations, etc.) according to their participation in the links of the different value chains</p>



		adoption of sustainable and low-emission farming systems	<p>5.5 Implementing market intelligence to identify new inclusive green markets and improve access to commercial information and information about market requirements with an emphasis on sustainable products</p> <p>5.6 Fostering traceability, certification and responsible purchase of agriculture and forestry</p>
6	Strengthening climate change adaptation initiatives in territories of indigenous and Afro-descendant peoples of the Caribbean Coast, Pacific, Central and Northern regions.	To enhance resources and coordination and build capacities of governance and territorial forest management among indigenous and Afro-descendant peoples	<p>6.1 Building technical and technological capacities of Regional and Territorial Governments and the Council of Indigenous Peoples of the Pacific, Central and Northern Regions, to enhance their involvement in the implementation of programs, projects, plans and actions linked to ENDE-REDD+.</p> <p>6.2 Contribute to the strengthening of community structures, building technical and administrative capacities to ensure efficient governance with responsibility for land, forests, water, fishing and biodiversity.</p> <p>6.3 Development of training programs on topics related to climate change, forest co-benefits, carbon accountability, restitution of rights</p> <p>6.4 Building institutional capacity and ensuring the distribution of knowledge for the implementation of ENDE-REDD+, based on the territorial reality and recovering ancestral knowledge.</p>

VIII. ENDE-REDD+ Implementation Road Map

The implementation of ENDE-REDD+ will take place progressively, in different phases. Initially, efforts will be concentrated on the Caribbean Coast, due to the fact that it is the region with the country's largest forest areas and has been identified as being at present the area most affected by deforestation. The Implementation Road Map is as follows: Phase 1: Caribbean Coast (North and South) and Biosphere Reserves BOSAWAS and Indio Maíz; Phase 2: National System of Protected Areas (SINAP), and Phase 3: Other sites of the Pacific, Central and Northern regions.

Phase 1 includes the Autonomous Regions of the Caribbean Coast and the municipalities covering the Biosphere Reserves BOSAWAS and Indio Maíz; this phase is at present in the readiness process with the Program for Emissions Reduction on the Caribbean Coast¹⁴ and many municipalities in both reserves, by which approx. 5 million tCO₂eq of emissions are expected to be reduced within 5 years.

Considering the potential of the National System of Protected Areas (SINAP), and the potential of other sites in the Pacific, Central and Northern regions identified on the Reforestation Map, a Phases 2 and 3 could be developed including new programs for the reduction of emissions to contribute to the decrease or eradication of deforestation and forest degradation.

The ENDE-REDD+ Strategy has six strategic guidelines with 37 identified measures or actions, which serve as the umbrella to respond to (diminish or revert) the causes of deforestation and forest degradation, as well as to help increase carbon stocks. The strategy is supported by four pillars: institutional pillar; indigenous pillar; awareness-raising, communication and information pillar; production and conservation pillar.

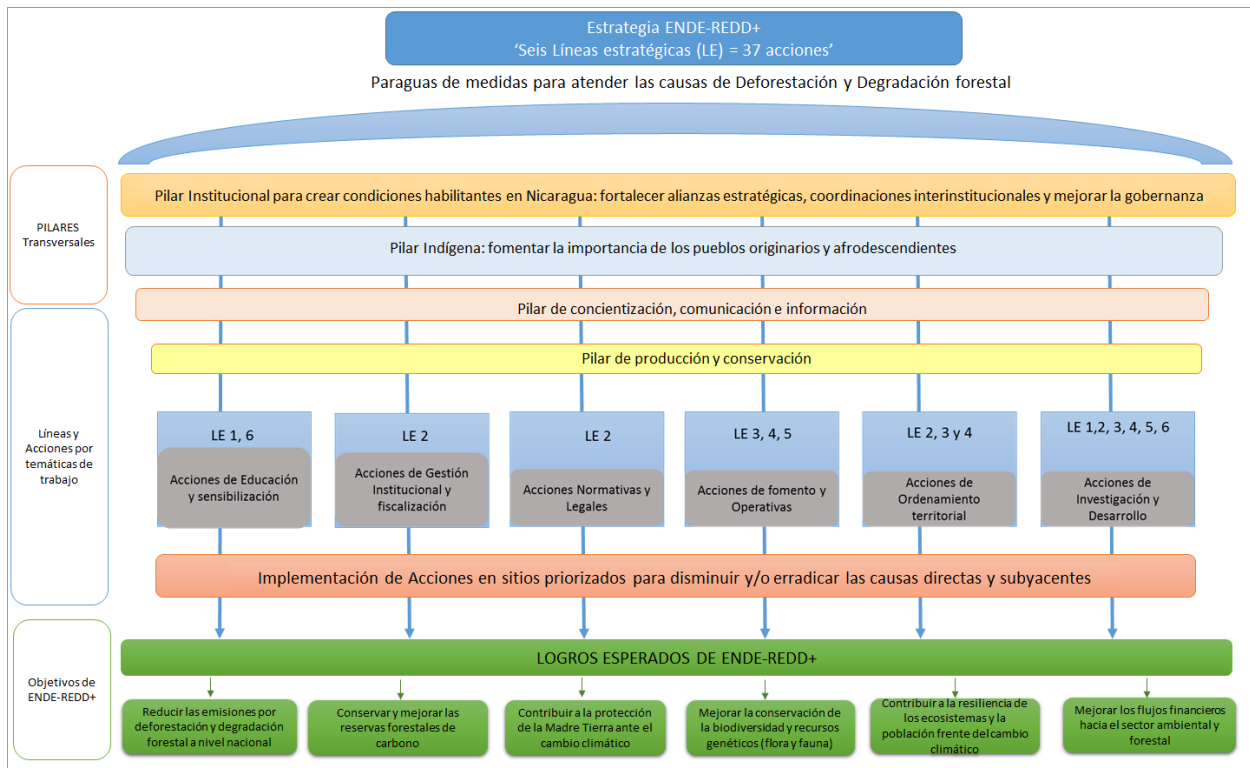
The institutional pillar is cross-cutting all strategic guidelines. It contributes to the creation of adequate preconditions in the country to facilitate the implementation of ENDE-REDD+ at the local, regional and national levels, by strengthening strategic alliances, inter-institutional coordination and improved governance. The indigenous pillar contributes to fostering the indigenous and Afro-descendant cosmovision, their intrinsic bond to Mother Earth and guarantees the restitution of their rights. The pillar of awareness-raising, communication and information contributes to carrying out the defined actions with adequate methods considering the specific population and identified information needs. The pillar of production and conservation is linked to all actions related to promotion and operations in the territories, but most of all to fostering low-emission economic activities as well as strengthening investments and value chains targeting sustainable markets.

¹⁴ The Program for the Reduction of Emissions on the Caribbean Coast (PRE-Caribe or ERPD) is presently being designed and is expected to be finalized during 2017.

https://www.forestcarbonpartnership.org/sites/fcp/files/2015/September/Nicaragua_ERPIN_Sept%2021%202015_final_Sp.pdf

Figure 15 shows the structure of the ENDE-REDD+ Strategy, its pillars supporting the strategic guidelines and actions and the inter-relation of its actions to ensure a holistic approach to the problem of forest loss and forest degradation, and foster the increase of carbon stocks. ENDE-REDD+ actions will contribute to the achievement of the general objectives of the ENDE-REDD+ Strategy, as well as concrete goals, such as the reduction of the deforestation rate by at least 50%.

Figure 15 Structure of the ENDE-REDD+ Strategy



Strategic guideline 1 includes actions related to the themes of education and awareness-raising, research and development. This guideline is cross-cutting and needs to be implemented continually throughout the period, in the Caribbean coast regions as well as in the PCN, because it centers on promoting changes of attitude and behavior through education and sensitization of the population (and it takes time to see positive results or changes as a consequence of the processes). However, in five of the seven actions, activities shall be intensified during the first years of the Strategy for 2018-2015.

Strategic guideline 2 includes actions related to institutional management and overview, land-use planning, norms and regulations, and research and development. This guideline concentrates key aspects to improve governance, institutional consolidation and to ensure the approach to the causes complies with norms and laws and will consequently be sustainable in future. It is recommended that in the five actions of this Strategic Guideline, activities should be intensified during the first decade of ENDE-REDD+, on the Caribbean Coast regions as well as in the PCN.



Themes		Strategic Guideline 1	Involved Entities	2018-2020	2021-2025	2025-2030	2031-2035	2036-2040		
1	Education and awareness-raising	1.1	MARENA INATEC MINED Academia INTA PRONICARAGUA INIFOM MEFCCA AMUNIC Municipal Governments GRACC GTI PI-PCN Academia Other* ¹⁵							
2		1.2								
3	Research and Development	1.3								
4	Education and awareness-raising	1.4								
5	Research and Development	Ensuring the flow of necessary information for decision-making on land use and natural resources at regional and local government levels.								
6	Education and awareness-raising	1.5								
7		1.6								
Themes		Strategic Guideline 2	Involved Entities	2018	2109	2020	2025	2030	2035	2040
8	Institutional management and inspection	2.1	MARENA (SINIA, SINIA-Nodes) INETER INAFOR SERENAs MAG							
9	Institutional management and inspection / Land-use planning	2.2	PRONICARAGUA SINAPRED INTA INIFOM MEFCCA AMUNIC Municipal Governments GRACC							

¹⁵ Other entities may be public and/or private.

10	Norms and regulations/ Research and Development	2.3 Building the capacities of INAFOR, INETER and MARENA to monitor land use changes, supervise forest management plans and management plans for protected areas, as well as land-use planning for climate change adaptation.	GTI PI-PCN Academia Other*								
11	Institutional management and inspection/Research and Development	2.4 Strengthening of the Early Warning Systems in the SNMRV by applying them in the Caribbean Coast and PCN regions, establishing an institutional plan and a response unit									
12	Land-use planning/ Research and Development	2.5 Promoting the inclusion of criteria for climate change adaptation and sustainable management of forest ecosystems in agricultural and environmental policies as well as in land-use planning processes									

Strategic Guideline 3 includes actions related to Promotion, Operation, Research and Development. As this guideline is key to reaching the goal of ENDE-REDD+ (reduction of deforestation rate by at least 50%), it is suggested that it should be implemented throughout the Strategy’s duration, in the Caribbean Coast regions as well as the PCN. However, it has also been proposed that in the case of all eight actions for this strategic guideline, activities should be intensified until 2040.

Themes		Strategic Guideline 3	Involved Entities	2018	2109	2020	2025	2030	2035	2040
13	Promotion and Operations	3.1 Granting agricultural incentives in dependence of forest conservation on farmlands	MHCP MARENA (SINIA, SINIA-Nodes) INETER							
14	Research and Development	3.2 Promoting payments for ecosystem or conservation services to foster forest conservation in prioritized indigenous territories	INAFOR SERENAS FONADEFI MAG							
15		3.3 Consolidating monitoring and control of Protected Areas (SINAP)	MEM SINAPRED							
16		3.4 Promoting sustainable ecotourism.	INTA INTUR							
17		3.5 Promoting reforestation and natural regeneration under different modalities, especially for the production of firewood or forage banks	PRONICARAGUA INIFOM MEFCCA AMUNIC							
18		3.6 Promoting reforestation and natural regeneration under different modalities (e.g. gallery forests, plantations, regeneration, enrichment planting in perforated forests, windbreaks) to maintain or restore ecosystem services (e.g. carbon capture, water recharge, protection of water resources, reduction of landslides and erosion by wind and water, conservation of protected areas, restoration of biological corridors).	Municipal Governments GRACC GTI PI-PCN Sector organizations: CONAGAN, UPANIC, CONAFOR, etc.							
19		3.7 Promotion of sustainable forest management/community forest management for wood as well as byproducts or non-wood products, as a way to improve the production and conserve forests at the same time.	Academia Others*							
20		3.8 Strengthening of the institutional framework and the protection, conservation and sustainable use of mangrove ecosystems, which are strategic to fishing, ecotourism and climate resilience of coastal areas.								



Strategic Guideline 4 includes actions related to Promotion, Operation, Research and Development. This guideline is key to reach the objective of ENDE-REDD+ and it is suggested that it should be intensified from 2018 to 2030, and later remain active throughout the strategy’s duration, in the Caribbean Coast regions as well as the PCN. However, it has also been proposed that in the case of all eight actions for this strategic guideline, activities should be intensified until 2030.

Themes		Strategic Guideline 4	Involved Entities	2018	2109	2020	2025	2030	2035	2040
21	Promotion and operations	4.1 Promoting the organizational development of farmers, cattle-ranchers and foresters (cooperatives, associations, etc.) to improve their productivity and access to markets.	MHCP MARENA (SINIA, SINIA-Nodes) INETER INAFOR	■	■	■	■	■	■	■
22	Research and Development	4.2 Promoting successful experiences with silvopastoral systems, agroforestry, forest plantations, with a focus on sustainable low-emissions production in combination with forest conservation.	SERENAS FONADEF0 MAG MEM SINAPRED	■	■	■	■	■	■	■
23	Promotion and operations	4.3 Fostering technical assistance for groups with a commercial focus and best environmental practices.	PRONICARAGUA INTA INTUR	■	■	■	■	■	■	■
24		4.4 Facilitating access to credits (e.g. through guarantees, cost reduction and risk aggregation) linked with stipulations on the adoption of conservation measures	INIFOM MEFCCA AMUNIC Municipal Governments	■	■	■	■	■	■	■
25	Research and development	4.5 Fostering research and development based on present needs, in order to define adapted and climate smart technologies	GRACC GTI PI-PCN	■	■	■	■	■	■	■
26	Promotion and operations	4.6 Increasing use of degraded lands through plantations, SAF, and the management of natural regeneration.	Sector Organizations: CONAGAN, UPANIC, CONAFOR, etc.	■	■	■	■	■	■	■
27		4.7 Promoting the quality and added value of products generated under zero deforestation schemes or carbon footprint reduction schemes (in agriculture, livestock-breeding and forestry).	Academia Others*	■	■	■	■	■	■	■

Strategic Guideline 5 includes actions related to topics of promotion and operations, as well as research and development. This guideline is key to reaching the objectives of ENDE-REDD+ (improved quality of life and increased flows of funds towards the environmental and forestry sector, with the aim of enhancing their national as well as international positioning and competitiveness); therefore, it should be implemented throughout the Strategy’s duration, in the Caribbean Coast regions as well as PCN regions.

In comparison to other countries in the Central American and Caribbean region, Nicaragua is lagging behind in terms of value chains, traceability, access to markets and technology; for this reason, it has been proposed that the activities of this Strategic Guideline’s seven actions should be intensified until 2030 and continue until the current gap has been reduced.



Themes		Strategic Guideline 5	Involved Entities	2018	2109	2020	2025	2030	2035	2040
28	Promotion and operations			5.1 Promoting the capture of private investments and the model of public-private alliances and shared responsibility for sustainable and low-emission farming projects	MHCP MARENA (SINIA, SINIA-Nodes) INETER INAFOR					
29		5.2 Fostering the strengthening and articulation of the value chain links of prioritized products (cacao, coffee, meat, milk, wood and staple grains), focusing on different markets and giving preference to green markets.	SERENAs FONADEFO MAG MEM SINAPRED PRONICARAGUA							
30		5.3 Promoting linkages to new green markets or markets for sustainable products, especially to markets with meat coming from systems with reduced deforestation	INTA INTUR INIFOM MEFCCA AMUNIC							
31		5.4 Promoting organizational eco-innovation and the organizational development of farmers and foresters (cooperatives, associations, etc.) according to their participation in the links of the different value chains	Municipal Governments GRACC GTI PI-PCN Sector organizations:							
32		5.5 Implementing market intelligence to identify new inclusive green markets and improve access to commercial information and information about market requirements with an emphasis on sustainable products	CONAGAN, UPANIC, CONAFOR, etc. Academia Others*							
33		5.6 Fostering traceability, certification and responsible purchase of agriculture and forestry								

Strategic Guideline 6 includes actions related to themes of education and awareness-raising, and research and development. This guideline is also key to the achievement of the objectives of ENDE-REDD+ (improvement of the quality of life of Nicaraguans, particularly for vulnerable indigenous and Afro-descendant peoples); therefore, it is suggested that three of the four actions be intensified until 2030 and then continued throughout the Strategy’s duration, in the Caribbean Coast region as well as PCN regions.

Themes		Strategic Guideline 6	Involved Entities	2018	2109	2020	2025	2030	2035	2040
34	Research and Development			6.1 Building technical and technological capacities of Regional and Territorial Governments and the Council of Indigenous Peoples of the Pacific, Central and Northern Regions, to enhance their involvement in the implementation of programs, projects, plans and actions linked to ENDE-REDD+.	MHCP MARENA (SINIA, SINIA-Nodes) INETER INAFOR MAG SERENAs FONADEFO PRONICARAGUA					
35	Education and Awareness-raising	6.2 Contribute to the strengthening of community structures, building technical and administrative capacities to ensure efficient governance with responsibility for land, forests, water, fishing and biodiversity	MAG MEM SINAPRED							
36	Research and Development	6.3 Development of training programs on topics related to climate change, forest co-benefits, carbon accountability, restitution of rights	INTA INTUR INIFOM MEFCCA							



37	Research and Development	6.4 Building institutional capacity and ensuring the distribution of knowledge for the implementation of ENDE-REDD+, based on the territorial reality and recovering ancestral knowledge.	AMUNIC Municipal Governments GRACC GTI PI-PCN Sector organizations: CONAGAN, UPANIC, CONAFOR, etc. Academia Others*							
----	--------------------------	---	---	--	--	--	--	--	--	--

IX. Environmental and Social Management Framework

The analysis of environmental and social benefits and risks carried out in the Social and Environmental Strategic Assessment does not foresee for the implementation of the ENDE-REDD+ to cause any negative impacts, neither socially nor environmentally. An Environmental and Social Management Framework (MGAS) has been designed to regulate, order and control the projects executed in the framework of the ENDE-REDD+ implementation, ensuring that possible negative impacts are reduced through compliance with the corresponding national environmental legislation and commitment to defined safeguards. The MGAS establishes the necessary tools and procedures to this end.

The MGAS is an instrument for internal use by MARENA and the institutions involved in ENDE-REDD+ that serves to identify the environmental and social legislation related to the Strategy. As a framework, it provides the elements to comply with the applicable national environmental and social legislation, identifies risks for each line of action and establishes the mitigation measures to implement, and includes the elements of compliance with the World Bank Environmental and Social Safeguard Policies that are applicable to ENDE-REDD+.

Political Aspects and Legal Framework

As a complement to the content of chapter II of this document, the MGAS indicates that national environmental laws are based on the Constitution, and presents the corresponding articles relevant to the ENDE-REDD+.

- Art. 2: Direct participation of the people in national matters
- Art.5: Recognition of indigenous and Afro-descendant peoples, their forms of social organization, their self-administration of local matters, their right to maintain their forms of community property, their right to the usufruct of natural resources.
- Art. 8: The Nicaraguan people is of a multiethnic nature.
- Art. 44: Recognition of different types of property which have to fulfill social functions
- Art. 60: Right to live in a healthy environment

- Art. 89: right of the peoples of the Caribbean Coast to preserve and develop their identity, recognition of the communal forms of usufruct of water bodies and forests
- Art. 102: Natural resources are a national heritage; contracts for concessions on natural resources may be formalized if the national interest so requires.
- Art.103: The State guarantees all forms of property, legal ownership and possession shall not be disturbed, except in the cases provided by the laws on the matter.
- Art.180: The usufruct of their natural resources is an inalienable right of the communities of the Caribbean Coast.
- Art. 181: Autonomy status requires the approval of the corresponding Regional Autonomous Council for the concessions and contracts granted by the State.

The MGAS identifies the legal framework in connection with ENDE-REDD+, as shown in Table 6.

Table 6 Legal framework for ENDE-REDD+

Currently Valid Legal Framework
Law 28 on the Autonomy of the Caribbean Coast and its regulations, Decree no. 3584
Law 40 Municipal Law, and its regulations. Amendments and additions to Law No. 40 and 261
Law 217, General Law on the Environment and Natural Resources. Approved on March 27, 1996, published in the Official Gazette No.105 on June 6, 1996, and its regulations, Decree 9-96
Law 290, Law on the Organization, Competence and Procedures of the Executive Power and Law 929 on Amendments and Additions to Law 290. Law 462 on the Conservation, Promotion and Sustainable Development of the Forestry Sector, published in the Official Gazette No. 97, on May 25, 2016.
Law 445, Law on Communal Property of Indigenous Peoples and Ethnic Communities of the Nicaraguan Caribbean Coast Autonomous Regions and Río Bocay, Coco, Indio and Maíz. Published in the Official Gazette No. 16 on February 23, 2003.
Decree No.19-2008 Declare in Special Development Regime for the purpose of serving the Executive to the Indian Territories Miskitu Indian Tasbaika Kum, Mayagna Sauni Bu and Kipla Sait Tasbaika, located in the Upper Wangki and Bocay Basin. Approved on April 14, 2008. Published in La Gaceta No.83 of May 05, 2008.
Law 462, Law on the Conservation, Promotion and Sustainable Management of the Forestry Sector and its Amendments. Approved on June 26, 2003, published in the Official Gazette No.168 on September 4, 2003.
Law 757, Law on the Decent and Equitable Treatment of Indigenous and Afro-descendant Peoples. Approved on March 02, 2011, published in the Official Gazette No.96 on May 26, 2011.
Law 765, Law on the Promotion of Agro-ecological or Organic Farming and its regulations. Published in the Official Gazette No. 124 on July 5, 2011.
Law 805, Law on the Conservation and Sustainable Use of Biodiversity, October 19, 2012.
Decree 01-2007, Regulations of Nicaraguan Protected Areas. Approved on January 8, 2007. Published in the Official Gazette No.08, on January 11, 2007.
Decree 76-2006, Environmental Assessment System, approved on December 19, 2006. Published in the Official Gazette No. 248 on December 22, 2006
Law 759, Law on Ancestral Medicine.

The country's legal framework also includes adopted and ratified international treaties and agreements on environmental and sustainable development matters. As to the problem of climate change, the country signed the Regional Agreement on Climate Change in 1993. This Agreement commits Central American countries to establish regional mechanisms of economic integration and cooperation for the rational use of the environment, with the aim of protecting the climate system to the benefit of the present and future generations. The Agreement establishes that each State, according to its capacities, shall implement national programs and take measures to ensure climate conservation within and outside their jurisdiction.

The Treaties, Agreements and Declarations ratified by Nicaragua which are relevant to the implementation of ENDE-REDD+ include the following:

- Universal Declaration for the Common Good of the Earth and Humanity
- United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol
- CITES (Convention on International Trade of Endangered Species of Wild Flora and Fauna)
- RAMSAR
- ILO Convention 169 "Indigenous and Tribal peoples' Convention", including the right to previous, free and informed consent
- UN Declaration on the Rights of Indigenous Peoples
- International Convention on the Elimination of All Forms of Racial Discrimination
- Convention on the Elimination of All Forms of Discrimination against Women (CEDAW).

Safeguards and ENDE-REDD+

The constitutional mandate establishes a model of Dialogue, Alliance and Consensus that allows the construction and implementation of the ENDE-REDD + Strategy with the participation of indigenous and Afro-descendant peoples, business sector, productive sector, universities, environmental organizations, women, youth and Different governmental institutions in a model of faith, family and community to ensure the common good and care for Mother Earth.

The UNFCCC¹⁶ as well as the World Bank have defined social and environmental conditions or criteria, known as safeguards, which have to be considered in order to prevent or mitigate direct or indirect negative impacts on ecosystems and the communities inhabiting them, during the implementation of strategies to reduce greenhouse gas emissions due to deforestation and forest degradation.

The safeguards are social or environmental conditions or criteria that, from the beginning of the implementation of the legal framework, facilitate the attention to, participation of, and improvement of conditions for, specific and vulnerable groups, while favoring environmental protection. They try to ensure that social and environmental issues are taken into account in the

¹⁶ United Nations Framework Convention on Climate Change

decision-making process, with the aim of identifying, assessing, preventing, minimizing and mitigating adverse impacts on ecosystems and the communities inhabiting them.

The safeguards established by the UNFCCC are known as the REDD+ Safeguards or Cancún Agreements¹⁷. These safeguards refer to measures that are already regulated by the provisions of various international instruments and constitute the international framework of environmental and social principles as a basis for any activity related to REDD+. The Cancun Agreements require that all REDD+ activities be carried out in accordance with the following REDD+ safeguards:

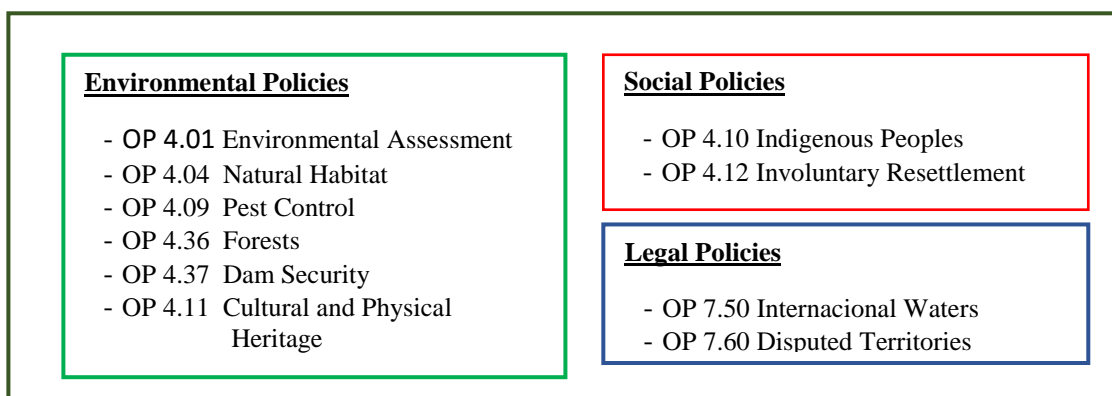
- a) Complementation and compatibility of measures with the objectives of national forest programs and international conventions and agreements on the matter;
- b) Transparency and effectiveness of national forest governance structures, taking into account national legislation and sovereignty;
- c) Respect for the knowledge and rights of indigenous peoples and members of local communities, considering the relevant international obligations and circumstances as well as national laws, and keeping in mind that the UN General Assembly approved the UN Declaration on the rights of indigenous peoples;
- d) The full and effective participation of the stakeholders, in particular, indigenous peoples and local communities
- e) The compatibility of the measures with the conservation of natural forests and biodiversity and guarantee that they are not used to convert natural forests, but serve to encourage the protection and conservation of those forests and the services derived from their ecosystems, and to enhance other social and environmental benefits;
- f) Mitigation of reversion risks
- g) Actions to reduce emissions displacement

The World Bank itself has 10 safeguards or operative policies, divided into environmental and social themes, and topics related to legal aspects (Figure 16). Likewise, it has a cross-cutting public outreach policy which is applied to all policies.

¹⁷ Appendix I to decision 1/CP.16



Figure 16 World Bank Safeguard Policies



Seven of the World Bank safeguards have been identified as applicable to the implementation of ENDE-REDD+ (Table 7).

Table 7 World Bank safeguard policies activated for ENDE-REDD+

OP	Safeguards	Activated
4.01	Environmental assessment	Yes
4.04	Natural habitats	Yes
4.09	Pest management	Yes
4.10	Indigenous peoples	Yes
4.11	Cultural physical resources	Yes
4.12	Involuntary resettlement	Yes
4.36	Forests	Yes
4.37	Dam safety	No
7.50	Projects in international rivers	No
7.60	Projects in conflict zones	No

The linkage between UNFCCC safeguards, WB and the Nicaraguan legal framework is shown in Table 8.

Table 8 Linkage between UNFCCC safeguards, WB and the Nicaraguan legal framework

Linkage between UNFCCC safeguards, WB and the Nicaraguan legal framework				
Cancún safeguards	World Bank Safeguards activated for ENDE-REDD+		Linkages with Nicaraguan legal and political instruments	Linkage with recognized International Legal Instruments
	OP	Safeguards		
a, f, g	4.01	Environmental assessment	Law 217 General Law on the Environment and Natural Resources, Decree 76-2006.	Sustainable Development Goals (SDGs). Montreal Protocol



Linkage between UNFCCC safeguards, WB and the Nicaraguan legal framework				
Cancún safeguards	World Bank Safeguards activated for ENDE-REDD+		Linkages with Nicaraguan legal and political instruments	Linkage with recognized International Legal Instruments
	OP	Safeguards		
			Environmental Assessment System in Nicaragua	
b, d, g	4.04	Natural habitats	<p>Law 217, General Law on the Environment and Natural Resources,</p> <p>Decree 01-2007, Regulations for Nicaraguan Protected Areas, Law 462, Law on the Conservation, Promotion and Sustainable Development of the Forestry Sector</p> <p>Law 807, Law on the Conservation and Sustainable Use of Biological Diversity</p>	<p>CITES, RAMSAR,</p> <p>Decree on the creation of Habitat Sustainable Development Goals (SDGs) UNFCCC</p> <p>United Nations Forum on Forests</p>
	4.09	Pest Management	Law 765, Law on the Promotion of Agro-ecological or Organic Farming, NTON 11037-12	Stockholm Convention on Persistent Organic Pollutants
c, d	4.10	Indigenous Peoples	<p>Law 28 and Law 445</p> <p>Laws 40 and 261, Amendments and additions to 40, “Municipal Law”</p>	<p>Convention 169</p> <p>Convention on Indigenous Peoples</p> <p>International Convention on the Elimination of all Forms of Racial Discrimination</p> <p>Convention on the Elimination of all forms of Discrimination against Women</p> <p>CEDAW</p> <p>Convention on Biological Diversity</p>
C	4.11	Physical cultural resources	<p>Law 445 – Law on Communal property of Indigenous peoples and Ethnic Communities of the Caribbean Coast Autonomous Regions and Río Coco, Indio and Maíz</p> <p>Law 28, Statute of Autonomy of the Caribbean Coast Regions, Decree 1142 on the Law on the Cultural Heritage of the Nation</p> <p>Law 759, Law on Traditional Ancestral Medicine</p> <p>Law 217 (Article 18)</p> <p>Law 272 Law on the Electric Industry</p>	UN Declaration on the Rights of Indigenous Peoples

Linkage between UNFCCC safeguards, WB and the Nicaraguan legal framework				
Cancún safeguards	World Bank Safeguards activated for ENDE-REDD+		Linkages with Nicaraguan legal and political instruments	Linkage with recognized International Legal Instruments
	OP	Safeguards		
C	4.12	Involuntary Resettlement	Nicaraguan Political Constitution Law 28. Statute of Autonomy for the Caribbean Coast Regions Statute of Autonomy Law 445 - Law on Communal Property of Indigenous Peoples and Ethnic Communities of the Nicaraguan Caribbean Coast Autonomous Regions and Río Bocay, Coco, Indio and Maíz. Law 217, General Law on the Environment and Natural Resources. Decree 01-2007, Regulations on Nicaraguan Protected Areas Law 309 on the Regulation, Zoning and Titling of Spontaneous Human Settlements Law 475 on citizen participation	Universal Declaration of Human Rights (Articles 17, 22, 25) American Declaration of the Rights and Duties of Man International Covenant on Economic, Social and Cultural Rights, United Nations 1976 International Covenant on Civil and Political Rights American Convention on Human Rights, of the Organization of American States ILO Convention 169 UN Declaration on the Rights of Indigenous Peoples
a, b, c, d, e, f	4.36	Bosques	Law 462 on the Conservation, Promotion and Sustainable Development of the Forestry Sector Law 217 General Law on the Environment and Natural Resources.	UN Forum on Forests UNFCCC Sustainable Development Goals (SDGs)

In view of the possible future involvement of various financing agencies in the implementation of ENDE-REDD+, each with its own and different policies and procedures, the FCPF has developed a common framework to ensure consistency with the World Bank safeguards, the “Common Approach to Environmental and Social Safeguards for Multiple Delivery Partners”, these are substantially equivalent to the World Bank safeguards.

The Common Approach offers a common platform for risk management and to guarantee the quality of the readiness process for the REDD+ initiative. Within this framework, Nicaragua has prepared itself by complying with the Common Approach to the application of the FCPF environmental and social safeguards. To this end, it has prepared the following four instruments:



- Implementation of a strategic social and environmental assessment and the preparation of an Environmental and Social Management Framework
- Preparation of principles to effectively involve the stakeholders
- Communication Strategy
- Mechanisms to Strengthen the Communication on ENDE-REDD+ (accountability and complaints procedures).

X. Implementation and Monitoring of the Environmental and Social Management Framework

Safeguard Information System

Under the leadership of MARENA and in Alliance with Regional, Territorial and Municipal Governments, a Safeguard Information System (SIS) has been designed since August 2016, which is to become an integral part of the National Monitoring, Reporting and Verification System (SNMRV) of the ENDE-REDD+ Program. The SIS will allow to define how the safeguards should be coherently addressed, making sure all REDD+ actions and measures are covered, independently of the financing source or initiative. Likewise, it will facilitate a framework of indicators to monitor the fulfillment of the safeguards at the national, sub-national and community levels.

The main objective of the SIS is to strengthen the data collection system and data processing, in order to generate information on how the safeguards are approached and respected during the implementation of the ENDE-REDD+ Program. The SIS will include processes to generate summaries or reports as required by the UNFCCC for the follow-up or compliance with safeguards activated by Nicaragua.

Due to the fact that this component is still being defined, the system has to consider whether it is recommendable to take into account traditional knowledge and collect data from the community. To this purpose, indicators have been established to monitor, assess and evaluate the fulfillment of the applicable legal framework in accordance with the UNFCCC, and thus avoid potential risks in connection with the implementation of the ENDE-REDD+ activities.

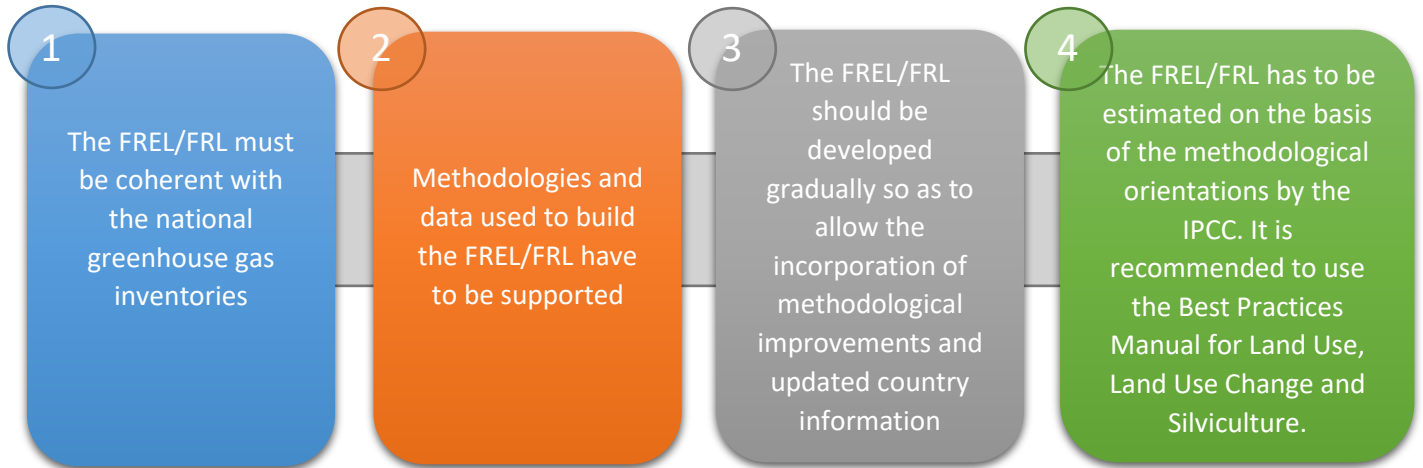
XI. Reference Levels for ENDE-REDD+

Reference emissions levels and forest reference levels are the baseline for greenhouse gas emissions caused by deforestation and forest degradation. They serve to compare and thus measure Nicaragua's progress during the implementation of the REDD+ activities. In addition, they serve as tools for the assessment of the progress of national policies and measures adopted to mitigate climate change.



As a signatory state to the UNFCCC, Nicaragua is constructing its FREL/FRL on the basis of the technical indications of the Conference of the Parties (COP). Within this framework, the fundamental decisions guiding stakeholders to participate in the ENDE-REDD+ process are:

Figure 17 Main decisions on the construction of the FREL



In 2015, Nicaragua started the process of readiness, design and construction of the REDD+ Reference level. In its first phase, the FREL/FRL will be national, with an estimation of emissions and absorption by deforestation and forest degradation. Subsequently, regional reference levels will be estimated for the regions defined in ENDE-REDD+ (Pacific, Central and Northern regions; North Caribbean Coast and South Caribbean Coast).

The following elements were considered for the preparation of the FREL/FRL: historic data on land use, land use change and forest cover; dasometric estimates and national forest inventories. On the basis of this information, estimates are made of carbon stocks and emissions (in tCO₂eq/year).

At present, there are three official maps of the years 1983, 2000 and 2015¹⁸, as well as control maps worked out by the ENDE-REDD+ Program for the years 2005 and 2010. The historic series of national data on land use change will help to estimate emissions and absorptions over 5- year-periods.

Emission factors¹⁹ can be estimated on the basis of the information of the National Forest Inventory²⁰, collected by INAFOR (2007-2008); during 2015 a re-sampling was made in 54

¹⁸ INETER

¹⁹ Emission factor definition according to IPCC

²⁰ <http://www.inafor.gob.ni/inventario/html/Resultados.html>



permanent plots. The collected data will serve to estimate the quantity of forest biomass²¹ carbon fraction and tons of dry material through allometric equations.

For ENDE-REDD+, a monitoring, reporting and verification (MRV) round table was formed with the participation of technical staff from various institutions: MARENA, INAFOR, INETER, MAG, INTA and territorial technical staff from the country's different regions. These groups have been trained in satellite image analysis and forest carbon estimates, with the aim of guaranteeing the sustainability, formulation and updating of FREL during the implementation of ENDE-REDD+²².

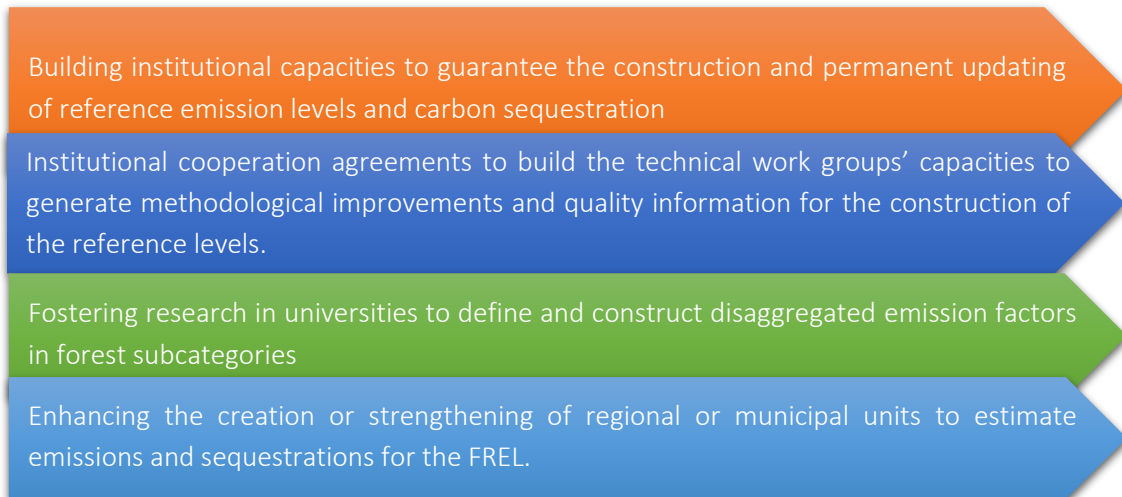


Figure 18 Inter-institutional team of the ENDE-REDD+ MRV round table

Work Lines

Work lines related to FREL are shown in Figure 19.

Figure 19 FREL Work Lines



²¹ Forest biomass will be estimated for two carbon stocks: aerial and subsoil biomass

²² <http://enderedd.sinia.net.ni/index.php/2015-06-04-16-22-24/2015-12-21-20-52-28>



XII. ENDE-REDD+ Measuring and Monitoring System

Nicaragua needs a system that can articulate the institutional work and collect information on land use change occurring within or outside forests, in order to carry out early actions to avoid deforestation and control degradation processes.

The National Monitoring, Reporting and Verification System (SNMRV) is designed to measure and monitor the evolution of deforestation and forest degradation and the corresponding greenhouse gas emissions, and to ensure the precision, trustworthiness, replicability and transparency of the reported information. It will manage, process and provide information of national indicators on forests, non-carbon benefits (water resources, biodiversity and food security) and information on safeguards (SIS) validated by the ENDE-REDD+ Program. On the other hand, the SNMRV will be a platform for the participation of all national sectors (institutions, regional governments, indigenous and territorial communities), guaranteeing integrity, trustworthiness and transparency of information made available to the entire population.

The SNMRV integrates theoretical fundamentals and norms established by the ruling entities and institutions specialized on this theme, such as the FCPF, IPCC and UNFCCC; it also includes existing institutional arrangements, the protocols for the collection and processing of spatial, cartographic, gasometric and epidometric data, statistics, as well as indicators for non-carbon benefits to be monitored and the mechanism for the strengthening of the ENDE-REDD+ communication. It includes the structure shown in Figure 20, with every institution contributing to the system according to its competences and strengths.

Each institution's contribution to the information systems is as follows:

Land use and land use change monitoring system (USCUS): It will be managed by INETER and facilitate annual geospatial data on gains or losses of forest cover.

National Forest Inventory (INF): Carried out by INAFOR, contains information on the state of forests and biomass. Its data will serve as input for the calculation and updating of the national "Emission Factors", to know the carbon stocks and emissions generated by deforestation and forest degradation.

National Inventory of Greenhouse Gases: created by MARENA's climate change department. Collects national statistics from: ENACAL, municipal governments, MEM, MTI and INAFOR, to estimate GHG emissions and absorptions during the preparation of National Communications.

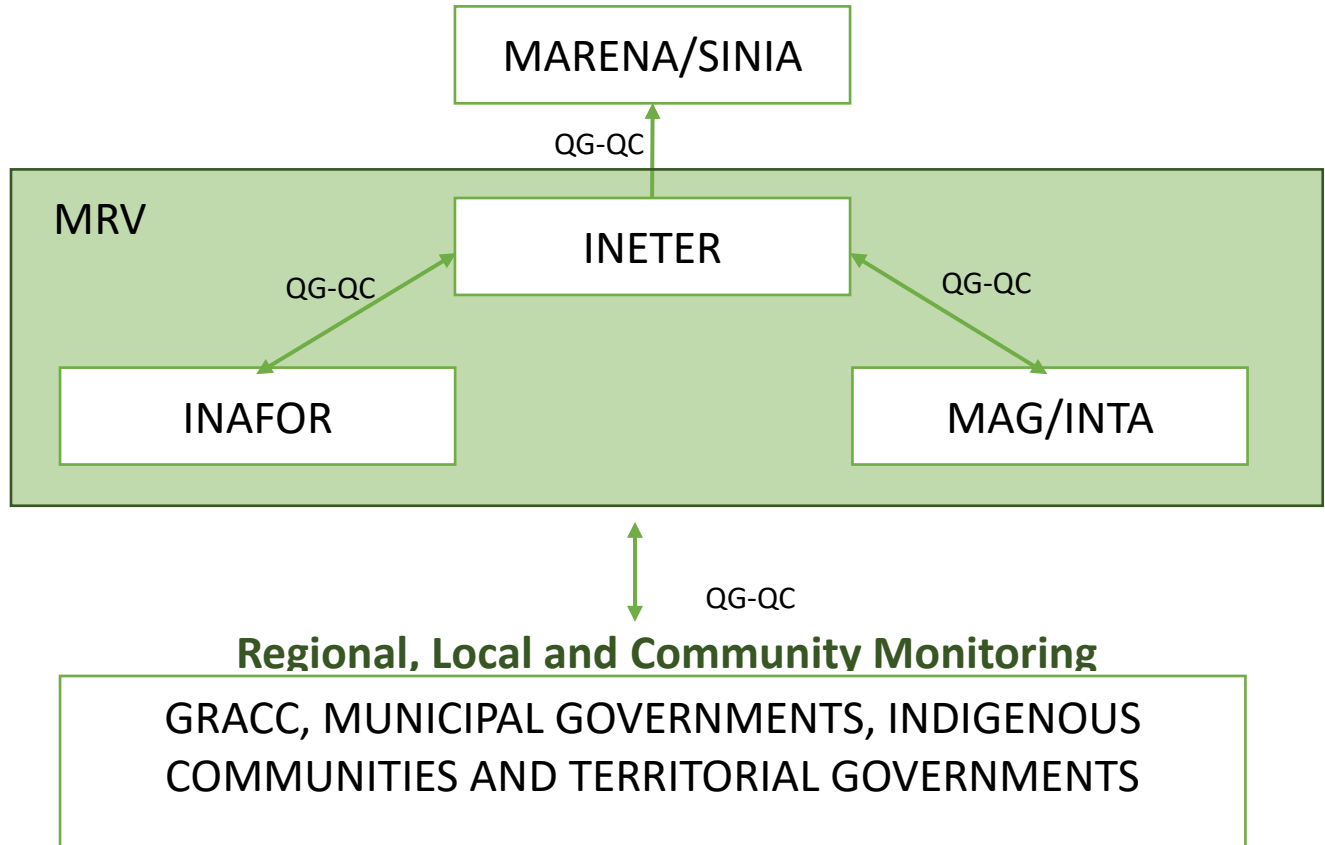
National Environmental Information System (SINIA): sub-agency of MARENA, monitors variables and indicators related to topics such as non-carbon benefits, among which are: food security, water resources, biodiversity and safeguards.

National Agricultural Census (CENAGRO): prepared by MAG, presents information of agricultural variables (agriculture and livestock-breeding).



The subsystem of the Forest Monitoring System (SNMB) will contribute information on the REDD+ MRV, co-beneficiaries as well as safeguards (Figure 20).

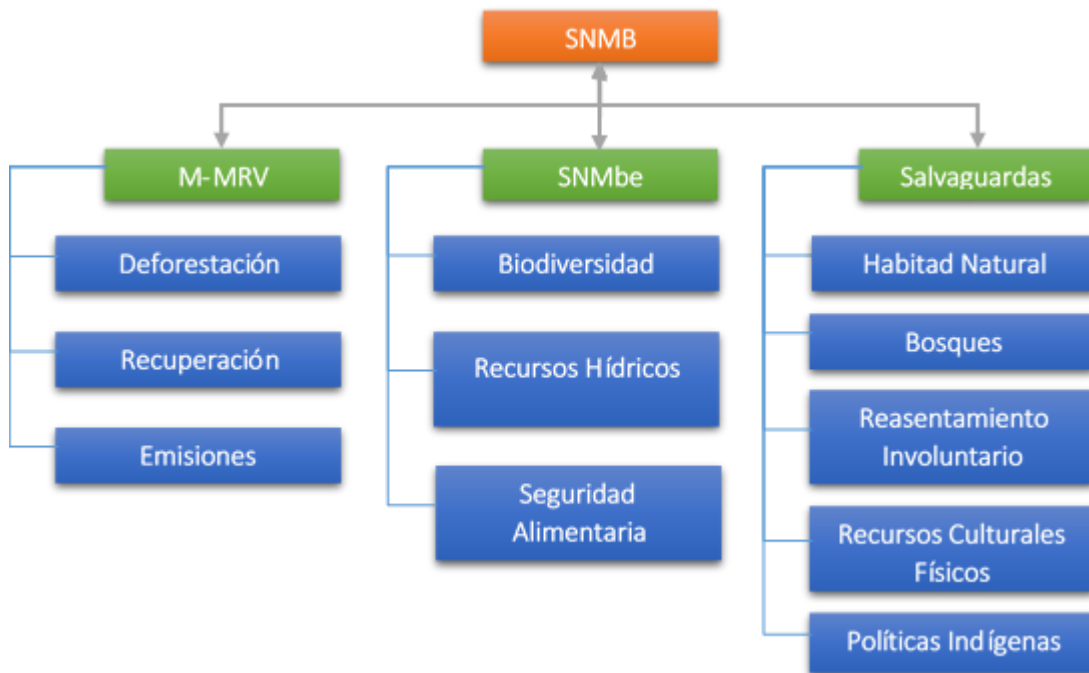
Figure 20 Proposed Structure of the National Monitoring, Reporting and Verification System



Note: QG: Quality Guarantee / QC: Quality Control



Figure 21 Structure of the Forest Monitoring System (SNMB), integral subsystem of the SNMRV



Technical Basis for Monitoring, Reporting and Verification

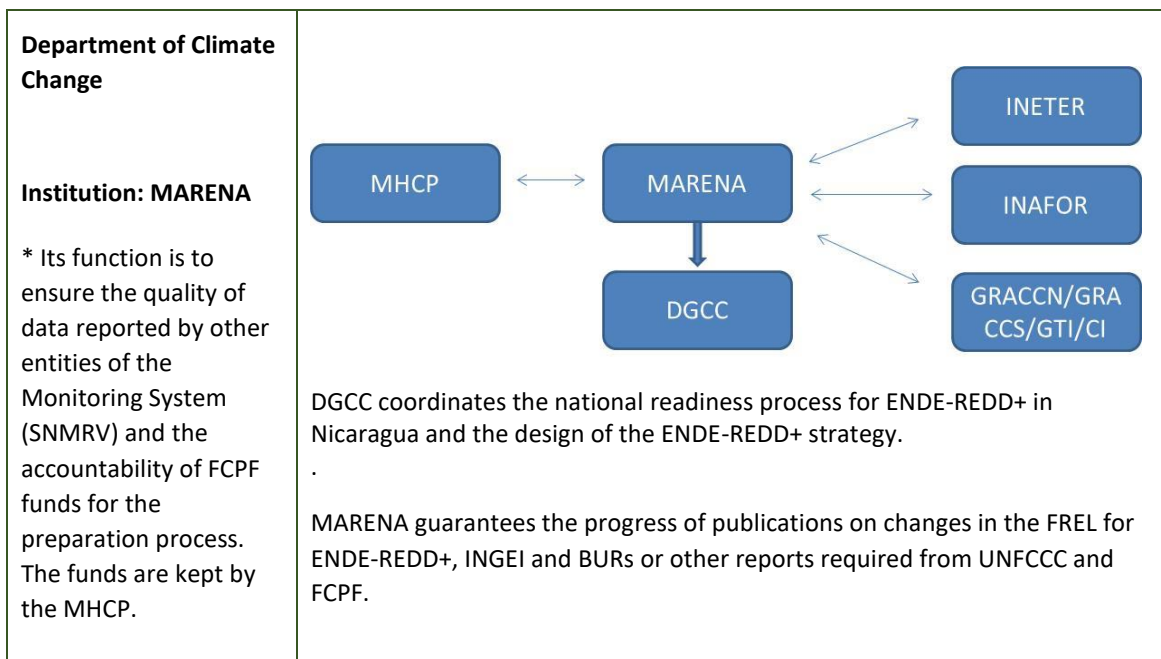
To activate the SNMRV, the country has created a structure and consolidated it during the readiness process. The System is composed of various public entities that have been coordinated to monitor, register and verify the activities developed by ENDE-REDD+. Figure 21 below shows the information related to each institution’s technical tasks.

Figure 22 Responsibilities and technical aspects of institutions involved in the MRV





<p>NATIONAL INVENTORY</p> <p>Institution: INAFOR</p> <p>*INF 2007-2008 Sampling units: 371</p> <p>*New design INF 2011-2015 Sampling units: > 600</p> <p>*Grid of permanent plots for updated sampling: > 2400</p> <p>*Plots with geographical data, facilitating monitoring with special tools</p> <p>*Biannual or quinquennial monitoring of the state of forests and areas outside forests</p>	
<p>National Environmental Information System (SINIA)</p> <p>Institution: MARENA</p> <p>*Reports national statistics on the state of the environment (including forests)</p> <p>* Saves reported data on its digital platform</p> <p>*Decentralizes the published information through SINIA-Nodes and other implementing partners in the territories</p>	<p>SINIA offers an interoperability platform for the MRV system and the expediting of national reports.</p>



Nicaragua is presently developing a tool to measure forest cover changes and other indicators related to biodiversity and water resources. This monitoring could be carried out at the national level as well as locally, in different administrative or geographical units. It allows a spatially explicit identification of where and in what size forest cover changes occur, and the causes generating the loss. This will facilitate the design and implementation of strategies to reduce deforestation and forest resource degradation.

The design of the National Monitoring, Reporting and Verification System – SNMRV – includes indigenous communities as strategic allies in monitoring, as they are the ancestral owners of the forests, and carry out their daily chores in close contact with nature. It is important to mention that the SNMRV includes building capacities in these communities and equipping them with technology to help them develop the necessary abilities for forest monitoring.

Additionally, Nicaragua is developing a registration system on climate risk adaptation, called Climate Change Expense Classifier, Disaster Risk Management and General Environmental Management, which will allow for the integration of climate change policies and disaster risk management in government plans and the General Budget of the Republic, in accordance with the needs determined in the National Human Development Plan, the National Environmental and Climate Change Strategy, and the National Policy for Comprehensive Disaster Risk Reduction Management.

This instrument is particularly relevant in terms of transparency of public expenditure in Climate Change, and is the Classified of expenses on climate change, risk management and environmental management, aimed at adaptation as well as mitigation and losses and damages. The MHCP is gradually implementing the Classifier for expenses on Climate Change, Disaster Risk Management and General Environmental Management, which will improve the linkage between

policies and the Budget, assigning resources to Climate Change, Risk management, as well as to identify the gap in the response to these, in order to request additional resources, among other things.

XIII. Financing scheme

The implementation of the National Avoided Deforestation Program (ENDE-REDD+) in Nicaragua is based on a Family and Community Culture, a Christian, Socialist and Fraternal Society, and a Model of Alliances, Dialogue and Consensus, which allows us to advance in unity and respond to pending challenges with our commitment to Continue Changing Nicaragua, WITH LOVE FOR NICARAGUA, and Always Further and Further, and advancing, step by step, in the eradication of poverty, promoting Well-Being and Rights.

International financing mechanisms have been identified which could support the implementation of ENDE-REDD+, such as the Adaptation Fund, Green Climate Fund, Global Environment Facility (GEF), Climate Investment Funds of the World Bank (composed of Clean Technology Fund and Strategic Climate Fund). The latter is made up of three kinds of funds: Pilot Program for Climate Resilience, Forest investment Program, Program for Increased Utilization of Renewable Energy Sources. Nicaragua also benefits from bilateral and regional cooperation efforts of countries such as Germany, Norway, Finland, Switzerland and the European Union.

The financing scheme proposed by ENDE-REDD+ will be articulated with the Economic and Financial Program of the Government of Reconciliation and National Unity, which is aiming at the generation of wealth and reduction of poverty as the unifying elements of the country's economic and social development. In this sense, it will be coherent with the public policies framed in the National Human Development Plan (PNDH), Economic and Financial Plan (PEF) and Public Investment Program (PIP).

ENDE-REDD+ will implement actions in response to climate change effects, improve social and ecosystemic resilience, protect forests, biodiversity and environmental services provided by forest ecosystems for the Well-being of Families and Communities. This demands important efforts as to human and financial resources, especially considering that Nicaragua requires international financial resource to face the losses and damages suffered from various natural phenomena related to climate change, as its national financial resources are very limited.

ENDE-REDD+ will contribute to achieving the country's prioritized economic, social and environmental goals, which are consistent with the 2015-2030 sustainable development target 15.2. "By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally", complementing target 15.5: "Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species".

Incentive payment, a country mechanism to contribute to maintaining forest carbon reserves, will become the main tool of ENDE-REDD+ to distribute benefits for a particular kind of land tenure: private lands whose legal status is consistent with the current legal framework.

Incentive payment will consist in a financial recognition by the State to forest and forest plantation owners for the environmental services they provide, which have direct effects on the protection and improvement of the environment. The environmental services forest ecosystems provide are identified in CO₂ fixation, protection of water bodies, protection of biodiversity, protection of ecosystems, contention of sediments, prevention of erosion and landslides, retention and infiltration of rainwater, protection from disasters, providing habitat and refuge for biodiversity.

The ENDE-REDD+ financial mechanisms have to be articulated with the Forest Incentive Program implemented by the GRUN through INAFOR, with investment initiatives financed by FONADEFO, and with the Forest Endorsements issued by INAFOR to request exemption from the Property Tax (IBI) and Income Tax (IR) for Private Enterprises. This mechanism can incorporate options for private, community, public or mixed financing, according to what is most adjusted to the legal nature of the participants in the concrete activities, actions, initiatives or projects.

In this sense, the design of an ENDE-REDD+ benefit distribution mechanism will use a participatory and inclusive approach (bottom up), from the communities, GTI, municipalities and regional governments. To this purpose, the inclusion of cultural, social, economic and organizational elements has been considered as a guarantee that the benefits reach the communities.

Moreover, the distribution of benefits will be based on the experience and culture of indigenous and Afro-descendant peoples of the Caribbean Coast region, who manage their natural resources according to their community rights and distribute the generated incomes within their communities. The experience in the distribution of resources transferred through the General Budget of the Republic will be incorporated to strengthen governance in indigenous communities.



Bibliography

- BCN, 2015, Informe Anual 2015, Managua Nicaragua, 174 p.
- BEUCHLE, 2011; Bases de datos satelitales para bosques tropicales.
- CEPAL, 2016, Agenda 2030 y los objetivos de desarrollo sostenible, Santiago de Chile, 63 p.
- CRAAN, 2011; Estrategia de la Región Autónoma del Atlántico Norte, RAAN, 85 p.
- FAO, 2000; Informe sobre el estado de los recursos zoo genéticos de Nicaragua, Rome, 53 p.
- FAO, 2010; Estrategia de la FAO para los bosques y el sector forestal, Rome, 9 p.
- GFOI, 2014; métodos y guías para la observación de cobertura de bosque mundial, Geneva, Switzerland, 200 p..
- GRUN, 2011; Estrategia nacional de la leña y el carbón vegetal en Nicaragua, 2011-2021, Managua Nicaragua, 47 p.
- GRUN, 2012; Plan Nacional de Desarrollo Humano, Managua Nicaragua, 261 p. <http://faostat3.fao.org/browse/Q/QA/S>
- INETER, 2015; Atlas de Nicaragua, uso actual de la tierra. Managua Nicaragua.
- INIDE, 2006; Población características generales, Managua Nicaragua, 335 p.
- INIDE, 2012, Informe final y bases de datos del IV Censo nacional agropecuario, Managua Nicaragua, 70 p..
- IPPC, 2003; Guía de buenas prácticas para el uso de suelo, cambio de uso de suelo y silvicultura, Japón, 350 p.
- MARENA, 2010, Estrategia Nacional Ambiental y del Cambio Climático, 2010-2015, Managua Nicaragua, 27 p..
- MARENA, 2013; Readiness Preparation Proposal (R-PP). Managua. Nicaragua. 261 p.
- MARENA, 2015; Emission Reductions Program Idea Note (ER-PIN), Managua Nicaragua. 87 p.
- MARENA, 2015; Nota conceptual del programa de reducción de emisiones ERPIN, Managua Nicaragua, 88 p.
- MARENA, 2016; Análisis del marco legal y de políticas públicas y su relación con la ENDE-REDD+ en Nicaragua, Managua Nicaragua, 66 p.
- MARENA, 2016; Estudio de las causas de la deforestación y la degradación forestal en Nicaragua, Managua Nicaragua, 75 p.
- MARENA, 2016; Metodología para la elaboración de los niveles de referencia versión II, Managua Nicaragua, 26 p.
- MARENA, 2016; Reporte de medio término programa ENDE-REDD+, Managua Nicaragua, 124 p.
- Naciones Unidas, 1988; Daños ocasionados por el huracán Joan en Nicaragua, Mexico, 50 p.
- ONU-REDD, 2015; Estrategia del programa 2011-2015, Geneva, Switzerland, 30 p.
- REDD+, 2014; REDD+ en América Latina (Estado actual de las estrategias de reducción de emisiones por deforestación y degradación forestal, Santiago de Chile, 70 p..
- Unasylva/FAO vol. 59, 2008, Deforestación, cambio de uso de la tierra y REDD, Rome, Italy, 60 p.
- Polvorosa y Bastiansen, 2016, Ganadería lechera y deforestación en Nicaragua
- MARENA 2017. Estudio de las causas de la deforestación y la degradación forestal en Nicaragua. “La problemática de las existencias de carbono forestal y el enfoque estratégico del Programa ENDE-REDD+ para atender estas causas a nivel nacional”. Proyecto Apoyo a la Preparación de la Estrategia para la Reducción de Emisiones por Deforestación y Degradación Forestal (ENDE-REDD+) -TF099264. Dirección General de Cambio Climático, Ministerio del Ambiente y los Recursos Naturales. 2017. 80 p.



Annexes

Annex 1:

Description of models and variables analyzed to assess potential sites for ENDE-REDD+ implementation

The Spatial Multicriteria Models collected, reviewed and prepared spatial information on each of the “driving forces” of deforestation and degradation processes.

Each spatial model evaluated every single variable in a multicriteria matrix, weighing them according to the degree of participation of each variable in the processes of deforestation and degradation. For example, variables were evaluated that describe the spatial land use distribution, vegetation cover, dendrometric characteristics, socio-economic aspects and environmental and biophysical variables of the entire national territory, among others.

This methodology is based on the integration of the Geographic Information Systems and spatial analysis with Multicriteria Assessment Techniques (EMC) to obtain a model with the capacity to select and localize deforested and degraded areas with a potential for the application of the REDD+ approach.

This Multicriteria Model approach makes it possible to establish adequate criteria to explore multiple alternatives and improve decision-making, in order to define:

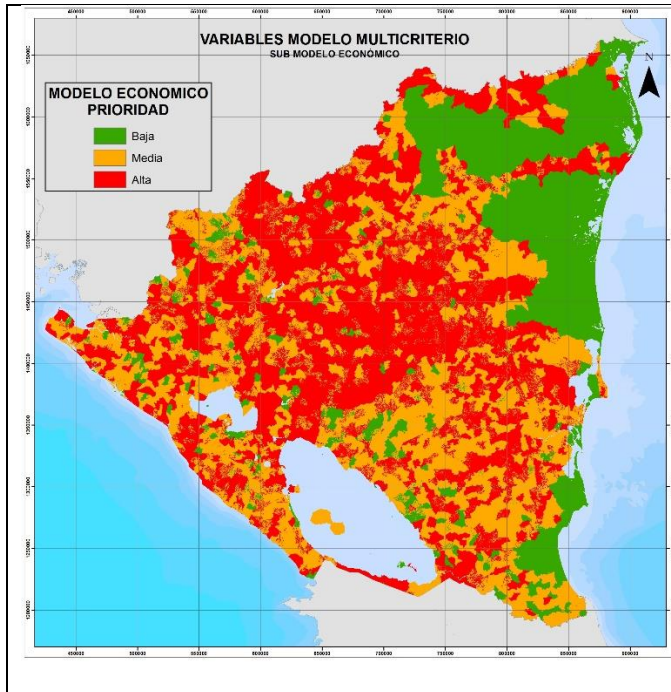
- Historic reference points in a specific area
- Measure of future reduction of emissions caused by deforestation – forest degradation
- Compensation potential in one region

The results of the multicriteria analysis²³ allow the exploration of different options of country sites where ENDE-REDD+ activities or measures could be more needed. Sites with high, medium and low priority were obtained according to the parameters evaluated in each spatial model. Six thematic models were evaluated: economic, social, biophysical, soil cover, environmental, and a model composed of the combination of all previous ones. Following is a summary of the main results and links with the strategic guidelines and actions to implement the ENDE-REDD+ program.

²³ Multicriteria spatial model applying social, demographic, biophysical and environmental variables, as well as variables of land use, ecosystems and farming activities. Detailed methodology in: MARENA 2017.



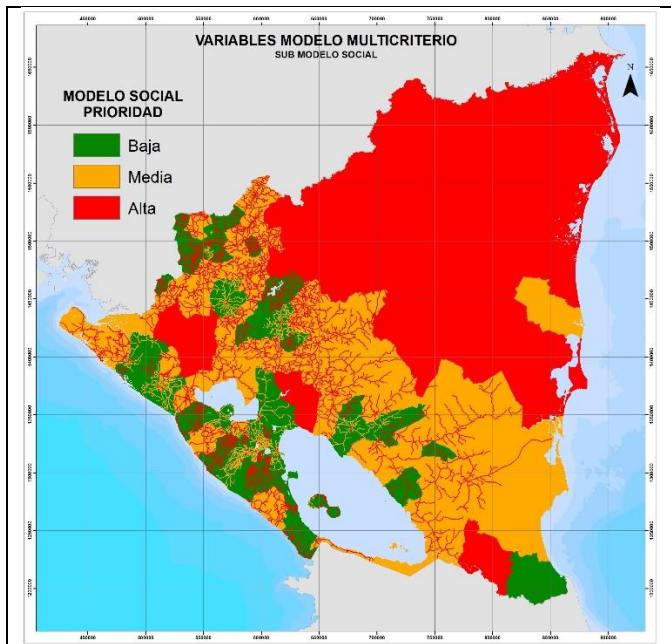
Economic Model



Model related to: sustainable forest management, water, energy, soils, value chains and green trade, and their contribution to the local, regional and national economy

High priority sites: PCN regions and certain areas of the North and South Caribbean Coast region

Social Model

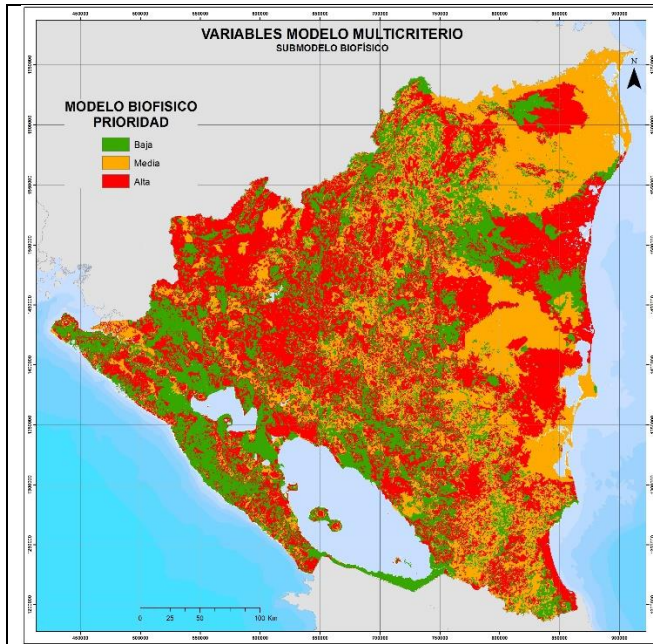


Model related to: improvement of natural resource governance and increase of population and ecosystem resilience in the face of climate change

High priority sites: North Caribbean Coast Region and part of the Southern Coast
 Certain areas in PCN
 Primarily sites with highest poverty indices and indigenous territories



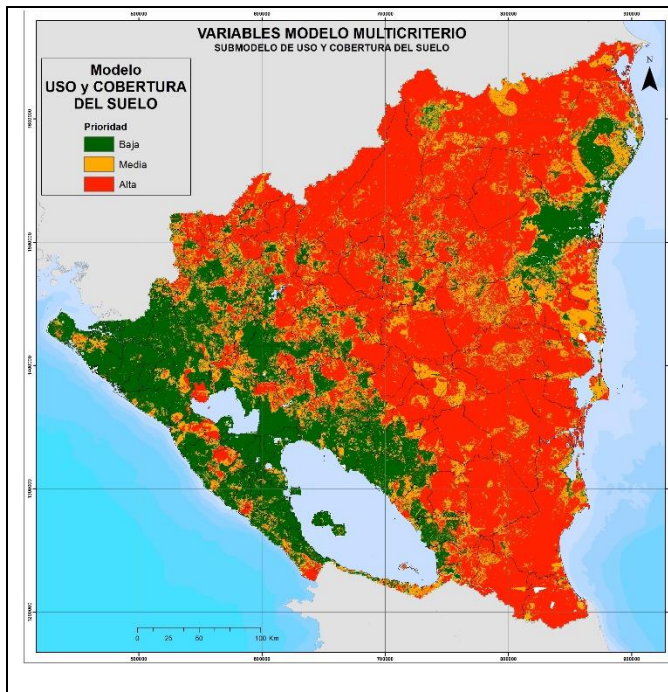
Biophysical Model



Model related to: Sustainable forest management, water, energy, soils; value chains and green trade, and their contribution to the local, regional and national economy

High priority sites: North Caribbean Coast region and part of the Southern Coast. Certain PCN areas. Primarily sites with highest poverty indices and indigenous territories

Soil Coverage Model

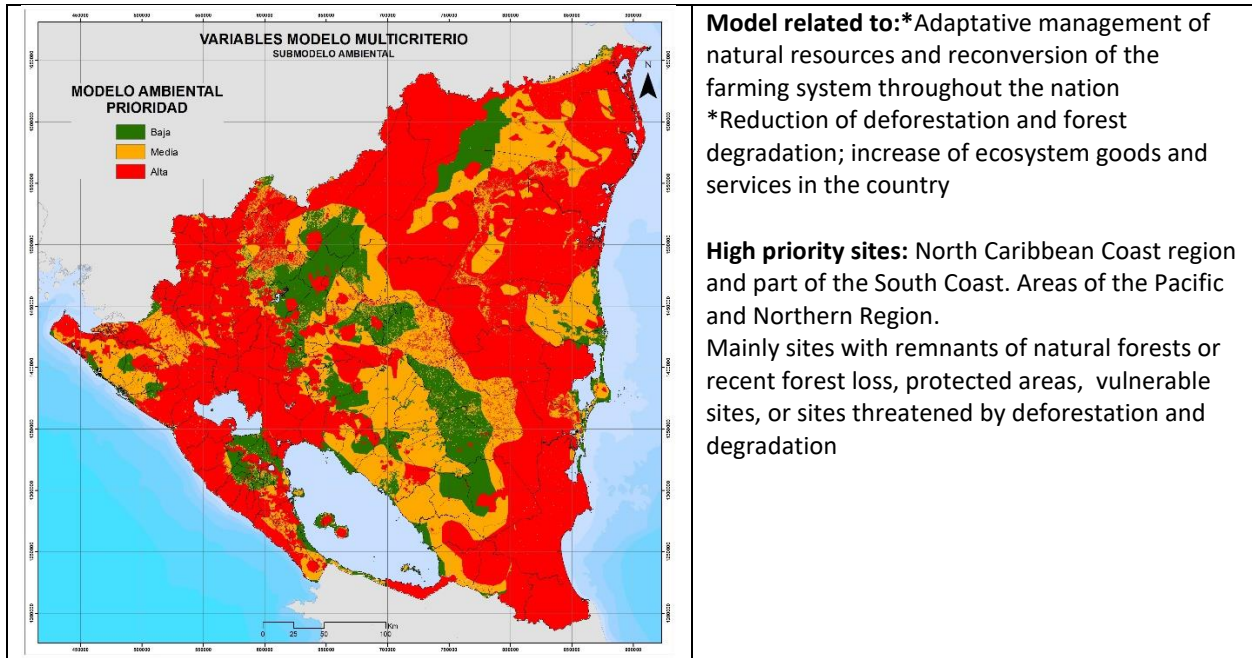


Model related to: *Reduction of deforestation and forest degradation; increase of ecosystem goods and services
*Sustainable management of forests, water, energy, soils; value chains and green trade, and their contribution to the local, regional and national economy

Highest priority sites: Mainly the regions of the North and South Caribbean Coast
Certain PCN areas
Primarily sites where larger natural forest areas still exist, with indigenous territories located in them

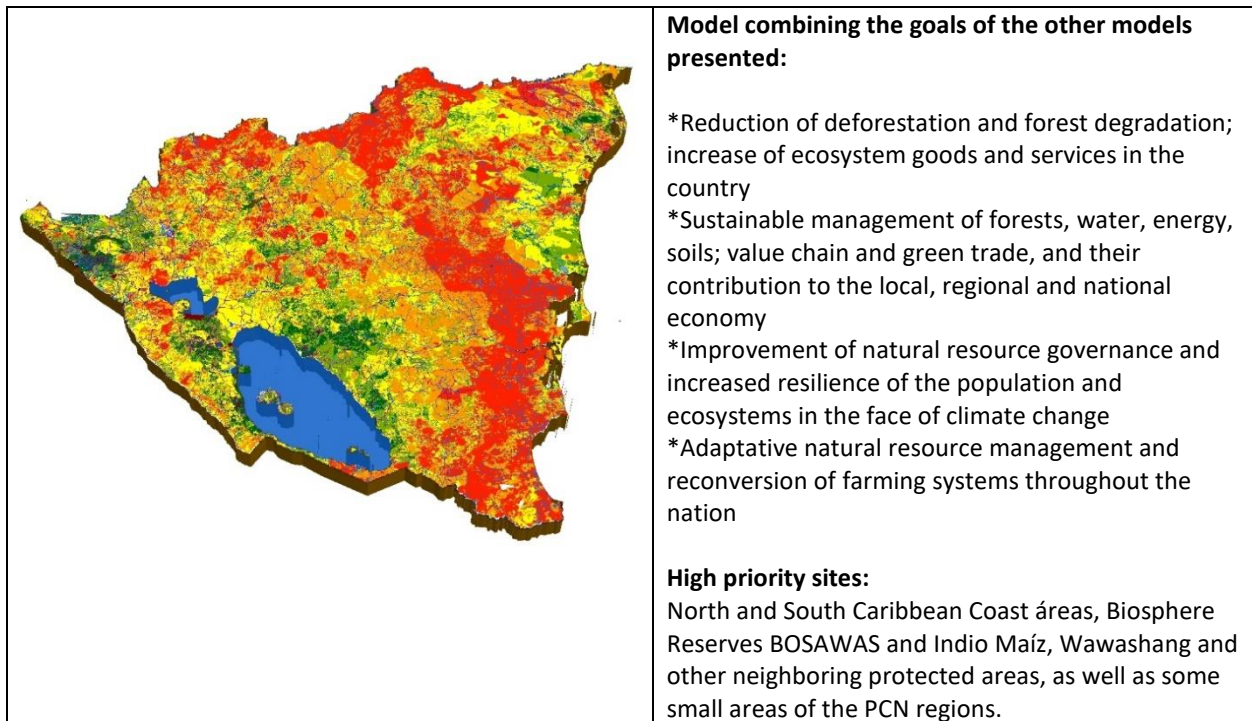


Environmental Model



Combined model

This model combines the models for economic, social biophysical, soil coverage and environmental criteria.





Annex 2:

ENDE-REDD+ Safeguards

The results of the Environmental and Social Strategic Assessment (EESA - *Evaluación Estratégica Ambiental y Social*) highlight the importance of involving indigenous and Afro-descendant peoples and their organizations in the process of formulating and implementing ENDE-REDD+, as a form of recognizing and ensuring their rights, in accordance with the Nicaraguan legal framework, the UN Declaration on the Rights of Indigenous Peoples and Convention 169 of the ILO.

The relation of activated WB safeguards with the implementation of strategic guidelines of the ENDE-REDD+ Strategy are presented in the following table:

Relation between strategic guidelines of the WB Safeguard Strategy

No.	Strategic Guidelines	Safeguards
1	Strengthening the national, regional and local coordination and building capacities of governments for the management of land use and natural resources, in accordance with the laws and policies on forests, environment, agriculture and energy	Environmental assessment 4.01 Indigenous Peoples OP 4.10
2	Strengthening the national, regional as well as local coordination and the capacities of governments for the management of land use and natural resources, taking into consideration the and policies on forests, environment, agriculture and energy.	Environmental assessment 4.01 Indigenous Peoples OP 4.10 Involuntary Resettlement OP 4.12
3	Encouraging the protection, conservation and restoration of landscapes and biological corridors through afforestation, reforestation and natural regeneration in the Caribbean Coast region as well as the Pacific, Central and Northern regions.	Environmental assessment 4.01 Indigenous Peoples OP 4.10 Natural habitats OP 4.04 Involuntary resettlement OP 4.12 Physical cultural resources OP 4.11 Forests OP 4.36 Pest Management OP 4.09
4	Increasing sustainable and low-emission agro-forestry production, as well as the incomes of producers and number of jobs.	Environmental assessment 4.01 Indigenous Peoples OP 4.10 Natural habitats OP 4.04 Involuntary resettlement OP 4.12 Forests OP 4.36 Pest Management OP 4.09
5	Encouraging investments and strengthening forestry and agricultural value chains with a focus on sustainable and low- emission markets, which value sustainability and reduced deforestation.	Environmental assessment 4.01 Indigenous Peoples OP 4.10 Forests OP 4.36



6	Strengthening climate change adaptation initiatives in territories of indigenous and Afro-descendant peoples of the Caribbean Coast, Pacific, Central and Northern regions.	Environmental assessment 4.01 Indigenous Peoples OP 4.10
---	---	---

Following is the analysis of the WB safeguards and their effects on ENDE-REDD+; each safeguard, the degree of its effect on ENDE-REDD+, and response instructions to their activation are described in detail:

- **Environmental Assessment Safeguard OP/BP 4.01:** this operational policy requires an environmental category for each project (A,B,C), as part of the environmental assessment. This assessment will also determine whether the project will trigger other Safeguard Policies, for example Pest Management. The values of the Environmental Category represent the first indicator of the potential coverage of OP 4.01. It requires all proposed projects looking for financing to undergo an Environmental Assessment (EA) in order to guarantee their environmental solidity and sustainability, and thus to improve the decision-making process.

Expected in ENDE-REDD+: The ENDE-REDD+ will not affect the environment negatively; however, its preventive character requires the application of this safeguard to all programs and projects linked to the implementation of ENDE-REDD+.

Attention to this safeguard is regulated by Law 217 on the Environment and Decree 76-2006 referring to the Environmental Assessment System, which establishes 3 environmental categories:

- Environmental Category I: Special projects
- Environmental Category II: projects considered to be of High Potential Environmental Impact
- Environmental Category III: projects considered as being of Moderate Potential Environmental Impact

- **Safeguard on Natural Habitats OP/BP 4.04:** Equally to other measures of environmental protection and improvement, the conservation of natural habitats is essential for long-term sustainable development. Consequently, the stakeholders have to apply a prevention criterion regarding the management of natural resources, in order to guarantee opportunities for sustainable development from an environmental point of view. The Bank will not lend support to project which, to its view, imply an important degree of conversion or degradation of critical natural habitats.

Expected in ENDE-REDD+: By its own definition, ENDE-REDD+ will have positive effects on natural habitats by contributing to the protection and restoration of the landscape and biodiversity. Law 217 has the objective of preventing, regulating and controlling any kind of cause or activity

leading to the deterioration of the environment and contamination of ecosystems. To this end, it created the National System of Protected Areas (SINAP), which comprises all areas declared protected to this date as well as in the future, and also integrates the Private Wildlife Reserves into this system, with their own particular regulations.

When the area of direct or indirect influence of a project lies within an environmentally protected area, or is considered an environmentally fragile or critical area, complementary impact studies will be required in accordance with the needs of each affected area.

- **Safeguard on Pest Management OP/BP 4.09:** This policy is directed at projects and activities which intend to use and application chemical substances for pest control. Its activation helps the protagonists control plagues affecting agriculture or public health, by promoting and supporting safe, efficient and ecologically rational pest control. The World Bank supports a strategy promoting biological or environmental control methods and reducing the dependence on synthetic chemical pesticides.

Expected in ENDE-REDD*: ENDE-REDD+ activated this safeguard considering the strategic guidelines for crops and plantations which will require pest control. The initial assessment of a project will determine whether it will be necessary to implement pest control. If this is the case, regulations of Law 274 would be used as basis. For this safeguard, special attention will be paid to the follow-up and support to the Integrated Crop Management Plan (MIC) and the Integrated Pest Management Plan (MIP). Article 38 states that the environmental impact assessment issued by MARENA has to be accompanied with environmental information.

- **Safeguard on Indigenous Peoples: OP/BP 4.10:** This policy contributes to the fulfillment of the Bank's mission to reduce poverty and achieve sustainable development by ensuring that the development process is carried out with absolute respect for the dignity, human rights, economies and cultures of indigenous peoples. In all funding proposals for projects affecting indigenous peoples, the Bank demands a previous, free and informed consultation process.

Expected in ENDE-REDD+: This Safeguard is of great importance for the design and implementation of ENDE-REDD+, as Nicaragua considers itself a multiethnic state. It should also be considered that 72% of the forests lie in indigenous territories in the Caribbean region, and at the national level, 59% of forests lie in indigenous territories²⁴.

To comply with the safeguard on indigenous peoples, the country has robust regulations rooting in the Nicaraguan Political Constitution which guarantee the rights of indigenous and Afro-descendant peoples: Laws 28, 445, Convention 169 and the UN Declaration on the Rights of Indigenous Peoples.

Likewise, the Environmental and Social Management Framework (MGAS) has an Planning Framework for Indigenous Peoples (MPPI) with guidelines for the execution of any activity or

²⁴ ENDE-REDD+ Data



construction in areas inhabited by indigenous peoples, independently of whether the generated impact is positive or negative.

- **Safeguard on the Cultural and Physical Heritage OP/BP 4.11:** This policy is meant to ensure that investments do not affect cultural, archeological, physical, historical and paleontological resources during the implementation of a project.

Expected in ENDE-REDD+: The effects of this Safeguard are considered low-level. The Law on the Protection of National Cultural Heritage, Decree No. 142 and the Law proclaiming the State's ownership of Archeological, Historic or Artistic monuments are complied with.

- **Safeguard on Involuntary Resettlement OP/BP 4.12:** This policy aims at avoiding or reducing involuntary resettlements to a minimum by studying all viable alternatives during the design of the project. In the case that it is inevitable, the involuntary resettlement has to be conceived and executed as a sustainable development program, ensuring that victims participate in planning and carrying out the resettlement and also benefit from the project; they have to be supported in their efforts to improve their livelihoods and living standard, or at least their former living standards have to be restored.

Expected in ENDE-REDD+: The analysis has anticipated that implementation actions will not require involuntary resettlements, considering that actions will be carried out on land rightfully belonging to indigenous or Afro-descendant communities, or private owners; the management or protected areas does not require them to be uninhabited. However, some circumstances may arise in which the access to natural resources is restricted for families who have been accustomed to use them.

- **Safeguard on Forests: OP/BP 4.3:** Its aim is to assist providers in the exploitation of the forests' potential so as to sustainably reduce poverty, and be able to integrate them effectively in the process of sustainable economic development, and to protect their values and environmental services at the local and global level. The Bank can only finance commercial forest exploitation activities when, on a basis of appropriate environmental assessments or other relevant information, it has determined that the areas affected by these activities are neither critical forests nor critical natural habitats.

Expected in ENDE-REDD+: The occurrence of this safeguard is considered very low, as ENDE-REDD+ intends to revert the causes of deforestation and forest degradation; it has to be considered that forests represent 30% of Nicaragua's national territory, of which 98% are natural forests.

In the case that due to the execution of a construction or activity, a potential negative effect may arise in a naturally and biologically important forest area, the Environmental Assessment and corresponding Environmental Management Plan have to include preventive, mitigation and

compensatory actions to ensure that these areas are only minimally affected. The MGAS is applied.

Formulation of Policies and Plans

The formulation of policies and plans, as measures to prevent or mitigate social and environmental impacts, is an important part of the formulation and implementation of the MGAS. Until now, three policies exist, regarding: 1) the planning by Indigenous and Afro-descendant peoples, 2) involuntary resettlement, and 3) feedback and strengthening of communication.

Planning Framework for Indigenous and Afro-descendant Peoples. As the State of Nicaragua is of a multiethnic nature, a Planning Framework for Indigenous and Afro-descendant peoples (MPPI) has been worked out, which sets the standard for projects, investments or actions developed in indigenous areas. The MPPI for ENDE-REDD+ indicates the legal framework supporting the rights of the indigenous and Afro-descendant peoples, describes the peoples and their geographical location, and the protocol to be followed by every program or project if indigenous or Afro-descendant peoples are living in its intervention area.

The MPPI is aligned with the Caribbean Coast Development Strategy as well as Law 445 and Convention 169 in matters of consultations of indigenous communities and peoples.

Involuntary Resettlement Policy Framework. In the MGAS, the topic of involuntary resettlements has been analyzed; the World Bank's OP 4.12 establishes that projects financed through this institution take measures to avoid adverse and undesired effects to persons and communities with limited access to resources, or involuntary resettlements; involuntary meaning without well-founded consent.

When carrying out the analysis of the safeguards related to the strategic guidelines, there is some possibility that involuntary resettlement may be necessary when implementing two of the six guidelines:

- Strategic guideline 3: promoting the protection, conservation and restoration of landscapes and biological corridors through afforestation, reforestation and natural regeneration on the Caribbean Coast and in the Pacific, Central and North regions.
- Strategic guideline 4: Promoting the conversion of traditional to agro-ecological farming systems through positive incentives for the adaptation to climate change

However, as it is a national strategy with a long-term implementation, no information can be given yet to formulate an Involuntary Resettlement Plan (MPRI); therefore, a Policy Framework for Involuntary Resettlement (MPRI) has been drafted. When the resettlement of populations becomes inevitable according to the environmental assessment – which in conformity with the present MGAS is obligatory in the project design phase - a Resettlement Planning Instrument will be worked out, which has been defined as the preparation of the Procedural Regulations.



Mechanism for Feedback and Strengthened Communication: MARENA has decided to create a mechanism to strengthen communication with ENDE-REDD+. It will give a broad range of options to obtain information, make proposals and present grievances and complaints, as well as to respond to these in a consistent, real, complete and opportune way. This mechanism will receive, assess and solve the community's concerns on the performance or influence of institutions related to ENDE-REDD+, and the information obtained will be used to improve the performance of the ENDE-REDD+ activities.

The Mechanism for Strengthened Communication with ENDE-REDD+ is the result of a previous, free and informed dialogue and consultation process. Its design was drafted on the basis of recommendations from the GTI, Territorial and Regional Governments. Four communication points of entry were designed for its implementation, which respond to the different contexts and needs of the actors:

- Electronic Access through the web page
- Access through authorities and traditional negotiators
- Access through Community Assemblies
- Access through mailboxes

All comments received have to be registered centrally in the Safeguard Information System.

To respond to the concerns and complaints, a regional inter-institutional team composed of representatives of GTIs, GRACCS, INAFOR, MARENA and PGR will follow-up on the communication through the different points of access. The make-up of this team corresponds to the EESA round table, which worked throughout the strategy readiness period. It will meet once a month to learn about the reports from the different entries of the mechanism and direct them to the corresponding instances to answer the concerns.

Whenever attention to these issues exceeds the response capacities in the region, they will be referred to MARENA's central level. The commission will report monthly on the concerns received in a special format to the Safeguard Information System and the delegation of MARENA. All information generated with this Mechanism for Strengthened Communication with ENDE-REDD+ will be used to adjust the ENDE-REDD+ design process and make improvements in its implementation.

Social and Environmental Benefits and Risks related to the ENDE-REDD+ Strategy: The analysis of social and environmental risks and impacts of the actions planned by the strategy is based on information generated in the broad process of dialogue and consultation with the various stakeholders, including work sessions with the EESA round tables in the Autonomous Regions, the Monitoring, Reporting and Verification meetings, as well as meetings with the coordination round tables. Annex 3 presents the risks associated to the Strategy's strategic actions:



Annex 3

Matrix of social and environmental risks and benefits associated to ENDE-REDD+ and its mitigation measures

Strategic guideline1: Strengthening awareness-raising, education, communication and the fostering of values and information related to the protection of Mother Earth, taking into account the territorial identity and cosmovision of indigenous and Afro-descendant peoples <i>Objective: To increase awareness-raising, availability of information related to the protection of Mother Earth and land use, and its communication by governments as well as the general public, with a focus on the common good and shared responsibility</i>						
Strategic Action	Social aspects			Environmental aspects		
	Positive impacts	Adverse impacts	Mitigation measures	Positive impacts	Adverse impacts	Mitigation measures
1.1 Development of cultural campaigns that promote a healthy environment	<ul style="list-style-type: none"> Stakeholders have more knowledge and awareness of environmental matters and love for Mother Earth More recognition for the cosmovision of indigenous and Afro-descendant peoples High involvement of youth in educational and cultural activities and positive action Strengthened conservation of native cultures Enhanced training capacities of stakeholders 	<ul style="list-style-type: none"> Cultural activities and information material not adjusted to local cultures Not using indigenous mother languages can limit identity and local communication External facilitators who do not understand or adapt to local cultures or are guided by prejudice on the relation of indigenous peoples with the forest, and enter with an attitude of wanting to raise awareness The traditional role of women is reproduced 	<ul style="list-style-type: none"> Application of Law 162: Official Use of Languages of the Nicaraguan Caribbean Coast Compliance with Convention 169, Laws 28 and 445 Application of the ENDE-REDD+ Planning Framework for Indigenous and Afro-descendant Peoples Mutual learning approach and dissemination of traditional best practices based on the technical knowledge of indigenous and Afro-descendant communities 	<ul style="list-style-type: none"> Better quality of life Higher protection of the environment; a more healthy environment to live in 	n/a	
1.2 Training teachers and social communicators on environmental topics						
1.3 Facilitating exchange of experiences to foster knowledge about biodiversity and the country's natural treasures						
1.4 Management of the knowledge derived from successful experiences of forest resource management and climate change adaptation						
1.5 Ensuring the flow of necessary information for decision-making on land use and natural resources at regional and local government levels.						
1.6 Inclusion of forestry and environmental policies and legislation into the educational contents of national education system						
1.7 Contributing to the recognition of the cultural heritage and good environmental practices of indigenous and Afro-descendant peoples						



			<ul style="list-style-type: none"> • Incorporation of organized women in work teams 				
<p>Strategic Guideline 2: Strengthening the national, regional and local coordination and building capacities of governments for the management of land use and natural resources, in accordance with the laws and policies on forests, environment, agriculture and energy <i>Objective: To encourage good governance of land use and natural resources by including consistent and shared criteria for environmental success, as well as an adequate level of resources to permit the implementation of effective monitoring and control systems and the application of laws, policies and tools for the management of land use and natural resources, especially in indigenous territories.</i></p>							
Lines of action	Social aspects			Environmental impacts			
	Positive impacts	Adverse impacts	Mitigation measures	Positive impacts	Adverse impacts	Mitigation measures	
2.1 Improvement of the coordination at the national, regional and local levels, especially the access and flow of information related to land use and natural resources.	<ul style="list-style-type: none"> • Strengthened institutional system • Higher level of implementation of the legal and political framework 	<ul style="list-style-type: none"> • Weak organization and consensus to respect indigenous, Afro-descendant, mestizo territories in joint decision-making and effective follow-up and monitoring • Non-compliance with commitments due to insufficient budget • Communication deficits due to language problems between the parties • Broadening of criteria for forest protection may limit use of resources for smallholder farmers 	<ul style="list-style-type: none"> • Enforcement of Law 162 • Compliance with Convention 169, Law 28 and 445 • Application of the ENDE-REDD+ Planning Framework for Indigenous and Afro-descendant Peoples • Application of the Involuntary Resettlement Policy Framework • Culturally appropriate feedback mechanism 		<ul style="list-style-type: none"> • Plans for opening up new paths and roads do not include measures to prevent extraction of illegal timber 		
2.2 Increasing the coverage and building management capacities of key institutions for the ENDE-REDD+, including the improvement of the equipment of regional governments and specific programs such as the campaign against wildfires, the monitoring and control of forest pests, the national reforestation crusade and the management of natural regeneration, as well as strengthening the application of natural resource management tools							<ul style="list-style-type: none"> • Increasing the presence of forest rangers at checkpoints • Building capacities of Municipal and Regional Forest Commissions
2.3 Building the capacities of INAFOR, INETER and MARENA to monitor land use changes, supervise forest management plans and management plans for protected areas, as well as land-use planning for climate change adaptation.							



2.4 Strengthening of the Early Warning Systems in the SNMRV by applying them in the Caribbean Coast and PCN regions, establishing an institutional plan and a response unit						
2.5 Promoting the inclusion of criteria for climate change adaptation and sustainable management of forest ecosystems in agricultural and environmental policies as well as in land-use planning processes						
<p>Strategic Guideline 3: Encouraging the protection, conservation and restoration of landscapes and biological corridors through afforestation, reforestation and natural regeneration in the Caribbean Coast region as well as the Pacific, Central and Northern regions. <i>Objective: To contribute to the conservation and expansion of forests through reforestation, sustainable forest management, natural regeneration, consolidation of protected areas, ecotourism, and forest conservation on farmlands, as well as to the increase of forest values.</i></p>						
Lines of action	Social aspects			Environmental aspects		
	Positive impacts	Adverse impacts	Mitigation measures	Positive impacts	Adverse impacts	Mitigation measures
3.1 Granting agricultural incentives in dependence of forest conservation on farmlands	<ul style="list-style-type: none"> Better quality of life Poverty reduction in indigenous, Afro-descendant and rural communities Contribution to food security Creation of jobs in forestry and agroforestry (Community-based forest guards brigades for wildfire control and social and environmental monitoring) 	<ul style="list-style-type: none"> The benefit distribution mechanisms do not bring benefits to the forest inhabitants. The definition of mechanisms of benefit distribution can generate conflicts in the community 	<ul style="list-style-type: none"> Procedure in accordance with stipulations of Planning Framework for Indigenous and Afro-descendant peoples and Involuntary Resettlement Policy Framework Culturally appropriate feedback mechanisms 	<ul style="list-style-type: none"> Stronger forest protection, improvement of biodiversity index, less gas emissions Protection of watersheds, recovery of degraded areas More vegetation cover and soil protection 		
3.2 Promoting payments for ecosystem or conservation services to foster forest conservation in prioritized indigenous territories						
3.3 Consolidating monitoring and control of Protected Areas (SINAP)						



<p>3.4 Promoting sustainable ecotourism</p>		<ul style="list-style-type: none"> • Demands of tourists transform the communities' culture 		<p>knowledge help to contribute to better results in forest quality and biodiversity</p>	<ul style="list-style-type: none"> • Natural habitats are altered for ecotourism purposes 	<p>Regulation and control of environment deteriorating activities, supported by the enforcement of Laws, specifically Laws 217 and 462</p>
<p>3.5 Promoting reforestation and natural regeneration under different modalities, especially for the production of firewood or forage banks</p>			<ul style="list-style-type: none"> • Procedure in accordance with stipulations of Planning Framework for Indigenous peoples and Involuntary Resettlement Policy Framework 			
<p>3.6 Promoting reforestation and natural regeneration under different modalities (e.g. gallery forests, plantations, regeneration, enrichment planting in perforated forests, windbreaks) to maintain or restore ecosystem services (e.g. carbon capture, water recharge, protection of water resources, reduction of landslides and erosion by wind and water, conservation of protected areas, restoration of biological corridors).</p>		<ul style="list-style-type: none"> • Land-use planning leads to relocation of families and/or access restrictions for families depending on the natural resources of forests for their livelihoods 	<ul style="list-style-type: none"> • Culturally appropriate feedback mechanism 		<ul style="list-style-type: none"> • Introduction of exotic forest species that could be attacked by endemic pests and affect biodiversity 	<ul style="list-style-type: none"> • Enforcement of regulations established in Law 217 and Law 807, chapter 11
<p>3.7 Promotion of sustainable forest management/community forest management for wood as well as byproducts or non-wood products, as a way to improve the production and conserve forests at the same time.</p>						
<p>3.8 Strengthening of the institutional framework and the protection, conservation and sustainable use of mangrove ecosystems, which are strategic to fishing, ecotourism and climate resilience of coastal areas.</p>						



Strategic Guidelines 4:						
Increasing sustainable and low-emission agro-forestry production, as well as the incomes of producers and number of jobs.						
Objective: To contribute to the transformation of traditional farms into profitable, sustainable and low-emission farming models, through trainings, technical assistance, improved credit access, and the organization of farmers.						
Lines of Action	Social aspects			Environmental aspects		
	Positive impacts	Adverse impacts	Mitigation measures	Positive impacts	Adverse impacts	Mitigation measures
4.1 Promoting the organizational development of farmers, cattle-ranchers and foresters (cooperatives, associations, etc.) to improve their productivity and access to markets.	<ul style="list-style-type: none"> Increased agricultural production for domestic consumption Contribution to the transformation of agriculture in the country, with an increase of yields and added value, ensuring the population's food and nutrition sovereignty and security Export production with more added value and a natural resource protection approach Conservation and improvement of livelihoods 	<ul style="list-style-type: none"> Designs of programs and projects fail to incorporate cultural elements of indigenous and Afro-descendant peoples. Transformation of agriculture affects traditional livelihoods of indigenous and Afro-descendant peoples 	<ul style="list-style-type: none"> Procedure in accordance with stipulations of the Planning Framework for Indigenous Peoples as to free, previous and informed consultations 			
4.2 Promoting successful experiences with silvopastoral systems, agroforestry, forest plantations, with a focus on sustainable low-emissions production in combination with forest conservation.					<ul style="list-style-type: none"> Forest plantations are managed like monoculture crops, affecting biodiversity 	<ul style="list-style-type: none"> Strengthening agro-ecological farming to ensure forest restoration and conservation of biodiversity, based on Law 765
4.3 Fostering technical assistance for groups with a commercial focus and best environmental practices.						
4.4 Facilitating access to credits (e.g. through guarantees, cost reduction and risk aggregation) linked with stipulations on the adoption of conservation measures						
4.5 Fostering research and development based on present needs, in order to define adapted and climate smart technologies						
4.6 Increasing use of degraded lands through plantations, SAF, and the management of natural regeneration.					<ul style="list-style-type: none"> Land-use planning leads to relocation of families and/or 	<ul style="list-style-type: none"> Procedure in accordance with



		restriction of access by families depending on forest natural resources for their livelihoods <ul style="list-style-type: none"> • Holy sites are not respected 	the stipulations of the Planning Framework for Indigenous and Afro-descendant Peoples <ul style="list-style-type: none"> • Procedure according to stipulations in the Involuntary Resettlement Policy Framework 	environmental benefits	and forest wildfires <ul style="list-style-type: none"> • Introduction of exotic species that can be attacked by endemic pests or affect biodiversity 	<ul style="list-style-type: none"> • Building capacities of Municipal and Regional Forestry Commissions • Enhancing campaign against wildfires • Strengthening agro-ecological farming according to Law 765
4.7 Promoting the quality and added value of products generated under zero deforestation schemes or carbon footprint reduction schemes (in agriculture, livestock-breeding and forestry).						

Strategic Guideline 5
Encouraging investments and strengthening forestry and agricultural value chains with a focus on sustainable and low- emission markets, which value sustainability and reduced deforestation.
Objective: To contribute to the transformation of farming in the country by encouraging investments in sustainable and low-emission farming activities, diversification and intensified farming, with an approach of natural resource protection; taking advantage of ecological market niches, which implies the adoption of sustainable and low-emission farming systems

Lines of Action	Social aspects			Environmental aspects		
	Positive impacts	Adverse impacts	Mitigation measures	Positive impacts	Adverse impacts	Mitigation measures
5.1 Promoting the capture of private investments and the model of public-private alliances and shared responsibility for sustainable and low-emission farming projects	<ul style="list-style-type: none"> • International development cooperation aligned with national production strategy, among other measures, will increase productivity, while 	<ul style="list-style-type: none"> • Designs of programs and projects fail to consider cultural elements of indigenous and Afro-descendant peoples. 	<ul style="list-style-type: none"> • Procedure in accordance with the stipulations in Planning Framework for Indigenous Peoples 		n/a	
5.2 Fostering the strengthening and articulation of the value chain links of prioritized products (cacao, coffee, meat, milk, wood and staple grains), focusing on different markets and giving preference to green markets.			<ul style="list-style-type: none"> • Culturally appropriate 			
5.3 Promoting linkages to new green markets or markets for sustainable products,						



especially to markets with meat coming from systems with reduced deforestation	coping more efficiently with climate change and its consequences. <ul style="list-style-type: none"> • Conditions for increased domestic and foreign private investment have been created 		feedback mechanism			
5.4 Promoting organizational eco-innovation and the organizational development of farmers and foresters (cooperatives, associations, etc.) according to their participation in the links of the different value chains						
5.5 Implementing market intelligence to identify new inclusive green markets and improve access to commercial information and information about market requirements with an emphasis on sustainable products.						
5.6 Fostering traceability, certification and responsible purchase of agriculture and forestry						
Strategic Guideline 6:						
Strengthening climate change adaptation initiatives in territories of indigenous and Afro-descendant peoples of the Caribbean Coast, Pacific, Central and Northern regions.						
Objective: To enhance resources and coordination and build capacities of governance and territorial forest management among indigenous and Afro-descendant peoples						
Lines of Action	Social aspects			Environmental aspects		
	Positive impacts	Adverse impacts	Mitigation measures	Positive impacts	Adverse impacts	Mitigation measures
6.1 Building technical and technological capacities of Regional and Territorial Governments and the Council of Indigenous Peoples of the Pacific, Central and Northern Regions, to enhance their involvement in the implementation of programs, projects, plans and actions linked to ENDE-REDD+.	<ul style="list-style-type: none"> • Increased socio-economic well-being of the Caribbean population • Strengthened autonomous regional governments and continuation of regionalization process • Strengthened organization, leadership and cultural identity of indigenous peoples for better management of 	<ul style="list-style-type: none"> • Lack of appropriation of public policy in Forest and Environmental governance • Generation of conflicts between municipal and territorial authorities • Active participation of indigenous women and their organizations is not fostered 	<ul style="list-style-type: none"> • Culturally appropriate feedback mechanism 		n/a	
6.2 Contribute to the strengthening of community structures, building technical and administrative capacities to ensure efficient governance with responsibility for land, forests, water, fishing and biodiversity						
6.3 Development of training programs on topics related to climate change, forest co-						



benefits, carbon accountability, restitution of rights	their resources and territories					
6.4 Building institutional capacity and ensuring the distribution of knowledge for the implementation of ENDE-REDD+, based on the territorial reality and recovering ancestral knowledge.	<ul style="list-style-type: none"> • Improved management capacity in the BOSAWAS and Indio Maíz Biosphere Reserves • Opportunity for indigenous and Afro-descendant women to work in agriculture, forestry and ecotourism. 					