



## **Global Climate Action Programs (GCAP) Sub-Committee**

Washington, D.C. (Hybrid)

**Thursday, June 13, 2024**

**DOMINICAN REPUBLIC (NPC) INVESTMENT PLAN**



CLIMATE INVESTMENT FUNDS  
1818 H Street NW  
Washington, D.C. 20433 USA  
T: +1 (202) 458-1801  
[www.cif.org](http://www.cif.org)

GCAP/SC.6/03/Rev.01  
May 30, 2024

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## PROPOSED DECISION

The Sub-Committee, having reviewed the document *GCAP/SC.6/03/Rev.01, Dominican Republic (NPC) Program Investment Plan*:

- a) thanked the Government of the Dominican Republic for the work it has done in preparing the Investment Plan;
- b) endorsed the investment plan as a basis for the further development of the projects foreseen in the plan and took note of the total requested funding of USD 30 million to support the following projects:
  - a. USD 17 million - Restore and conserve key ecosystems in the Yuna Watershed through the implementation of nature-based solutions (Inter-American Development Bank);
  - b. USD 13 million - Support the climate resilience of communities and their livelihoods through nature-positive economic diversification (World Bank).
- c) approved a total of USD 350,000 in Nature, People and Climate Program funding as preparation grants for the project Restore and conserve key ecosystems in the Yuna Watershed through the implementation of nature-based solutions (Inter-American Development Bank).
- d) took note of the estimated budget of USD 75,000 for MDB project preparation and supervision services for the project entitled Restore and conserve key ecosystems in the Yuna Watershed through the implementation of nature-based solutions; and approves USD 37,500 as a first tranche of funding for such services.
- e) took note of the Dedicated Grant Mechanism (DGM) allocation of USD 4 million for the World Bank, which comes through a financing window that is separate from the Investment Plan allocation.
- f) requested the Government of the Dominican Republic, in the further development of the proposed projects, to take into account comments made at the meeting and any additional written comments submitted by members.

# FROM RIDGE TO REEF YUNA WATERSHED, DOMINICAN REPUBLIC

Investment Plan for the  
Nature People and Climate (NPC) Program  
Climate Investment Funds (CIF)



# **FROM RIDGE TO REEF YUNA WATERSHED, DOMINICAN REPUBLIC**



**Investment Plan for the  
Nature People and Climate (NPC) Program  
Climate Investment Funds (CIF)**







# INVESTMENT PLAN COVER LETTER



CNCCMDL0132-2024

Santo Domingo, Dominican Republic  
April 25, 2024

**Tariye Gbadegesin**  
Manager  
Climate Investment Funds, Administrative Unit  
1818 H Street NW  
Washington D.C. 20433, USA

As focal point for the Dominican Republic to the Climate Investment Funds (CIF), it is a great pleasure to present the Dominican Republic's Investment Plan (IP) submission "From Ridge to Reef" for the Yuna Watershed region.

This Plan was led by the Ministry of Environment (MMARN) as technical coordinator, aligned with the National Watersheds Management Plan, where the Yuna Watershed is one of the 5 prioritized watersheds under this initiative. It is expected that the MMARN will be the institutional executive of the IP resources.

The Government of the Dominican Republic appreciates all the support provided by the Climate Investment Funds (CIF), the Interamerican Development Bank Group and the World Bank Group to develop this IP. We look forward to work together and to successfully implement the project's portfolio.

Your sincerely,

  
**Max Puig**  
Executive Vice President  
Climate Change Council and Clean Development Mechanism





Santo Domingo, D.N.  
23 de Abril de 2024

MMARN-INT-2024-03697

**Ms. Tariye Gbadegesin**  
Manager  
Climate Investment Funds, Administrative Unit  
1818 H Street NW  
Washington D.C. 20433, USA

Via: Climate Change National Council and Clean Development Mechanism

Dear Ms. Gbadegesin:

It is a great pleasure for Ministry of Environment and Natural Resources to submit the Dominican Republic's Investment Plan (IP) to promote comprehensive, resilient, and low-carbon management of the Yuna watershed through nature-based solutions. The Government of the Dominican Republic appreciates all the support provided by the Climate Investment Funds (CIF), the Interamerican Development Bank Group and the World Bank Group to develop this IP.

Through Resolution number 010-2021, the MMARN declared watersheds management and administration as of high environmental priority, with the purpose of facilitating the normal flow of waters and preventing disaster risks. A National Watersheds Management Plan has been organized as part of the National Development Strategy, and the Yuna Watershed is one of the 5 prioritized watersheds under this Plan.

As technical coordinator of the elaboration of this CIF-NPC Investment, we specially appreciate the contributions from the National Climate Change National Council and Clean Development Mechanism (CNCCMDL). As a result, this IP is conceived as a tool to move towards a "Ridge to Reef" management approach, which connects mountain systems with coastal-marine ecosystems, recognizing the interdependence between natural and socio-economic systems. This holistic approach has the potential to improve ecosystem management and promote the socio-economic well-being of communities throughout the watershed, highlighting the relationship between ecosystem services and community development.

Funding and technical assistance from the CIF-NPC will provide financing for nature-based solutions that ensure the protection of key ecosystems for the Yuna watershed while also facilitating climate and community resilience, enabling positive economic diversification for nature in the area.

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Av. Cayetano Germosén esq. Av. Gregorio Luperón, Ensanche El Pedregal, Santo Domingo, República Dominicana.  
Tel: 809-567-4300 Fax: 809-200-6464 [info@ambiente.gob.do](mailto:info@ambiente.gob.do) [AMBIENTE.GOB.DO](http://AMBIENTE.GOB.DO)

MMARN-INT-2024-03697

The CIF-NPC funds will give support through 3 specific objectives and components: (i) Strengthen the regulatory framework and institutional capacities for integrated watershed management and the implementation of nature-based solutions. (ii) Restore and conserve key ecosystems in the Yuna watershed through the implementation of nature-based solutions. (iii) Support the climate resilience of communities and their livelihoods through positive for nature economic diversification.

The Dominican Republic's Government is grateful for the opportunity to take part of the Nature People and Climate Program and the support of CIF for this Investment Plan. We look forward to work with CIF, the Interamerican Development Bank Group and the World Bank Group and our local partners to successfully implement the project's portfolio.

Your sincerely,

  
**Miguel Ceara Hatton**  
Ministry



MCH/cca

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**ACRONYMS AND ABBREVIATIONS**

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<b>BAGRICOLA</b>	Banco Agrícola de la República Dominicana (Private bank in the Dominican Republic)
<b>CIF</b>	Climate Investment Funds
<b>CNE</b>	National Energy Commission (CNE, for its acronym in Spanish)
<b>CORMIDOM</b>	Dominican Mining Corporation (CORMIDON, for its acronym in Spanish)
<b>DECCC Plan</b>	Climate Change Compatible Economic Development Plan 2010-2030
<b>DGM</b>	Dedicated Grant Mechanism
<b>DR</b>	The Dominican Republic
<b>EGEHID</b>	Dominican Hydroelectric Generation Company (EGEHID, for its acronym in Spanish)
<b>FASD</b>	Santo Domingo Water Fund (FASD, for its acronym in Spanish)
<b>FAYN</b>	Yaque del Norte Water Fund (FAYN, for its acronym in Spanish)
<b>FCHP</b>	Federation of Peasants Towards Progress (FCHP, for its acronym in Spanish)
<b>GDP</b>	Gross Domestic Product
<b>GEF</b>	Global Environment Facility
<b>GHG</b>	Greenhouse Gases
<b>GoDR</b>	Government of the Dominican Republic
<b>IAD</b>	Dominican Agrarian Institute (IAD, for its acronym in Spanish)
<b>IDB</b>	Inter-American Development Bank
<b>IFC</b>	International Finance Corporation
<b>INAPA</b>	National Institute of Drinking Water and Sewage (INAPA, for its acronym in Spanish)
<b>INDRHI</b>	National Institute of Hydraulic Resources (INDRHI, for its acronym in Spanish)
<b>INFOTEP</b>	National Technical-Vocational Training Institute (INFOTEP, for its acronym in Spanish)

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<b>IP</b>	Investment Plan
<b>LAC</b>	LAC – Latin America and the Caribbean
<b>MA</b>	Ministry of Agriculture
<b>MDBs</b>	Multilateral Development Banks
<b>MMARN</b>	Ministry of Environment and Natural Resources (MMARN, for its acronym in Spanish)
<b>MEPyD</b>	Ministry of Economy, Planning and Development (MEPyD, for its acronym in Spanish)
<b>MITUR</b>	Ministry of Tourism of the Dominican Republic (MITUR, for its acronym in Spanish)
<b>MRV</b>	National System for the Measurement, Reporting and Verification of Greenhouse Gases in the Dominican Republic
<b>NbC</b>	Nature-based Credits
<b>NbS</b>	Nature Based Solutions
<b>NCCAP</b>	National Climate Change Action Plan
<b>NCCCDM</b>	National Council on Climate Change and Clean Development Mechanism
<b>NDC</b>	Nationally Determined Contribution
<b>NDS</b>	National Development Strategy of the Dominican Republic 2030
<b>NPC</b>	Nature, People and Climate Program
<b>PAGCC-RD</b>	Gender and Climate Change Action Plan (PAGCC-RD, for its acronym in Spanish)
<b>PES</b>	Payment for Environmental Services
<b>PNCC</b>	National Policy on Climate Change (PNCC, for its acronym in Spanish)
<b>PPP</b>	Purchasing Power Parity
<b>PSACYNA</b>	Payment for Environmental Services in the Yaque del Norte River Watershed (PSANCYNA, for its acronym in Spanish)
<b>R2R</b>	From Ridge to Reef
<b>RE</b>	Renewable Energy
<b>UN</b>	United Nations Organization
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>WB</b>	World Bank



# **PROPOSAL SUMMARY**







# Introduction

The Investment Plan of the Dominican Republic (IP) for the Nature, People, and Climate Program (NPC) of the Climate Investment Funds (CIF) was prepared under the leadership of the Ministry of Environment and Natural Resources (MMARN), in coordination with the National Council for Climate Change and Clean Development Mechanism (CNCCMDL), with the support of the Inter-American Development Bank (IDB) as the lead bank, the World Bank (WB), BID Lab, BID Invest, and the International Finance Corporation (IFC). Consequently, the Investment Plan for the CIF-NPC program is conceived as a tool that will assist the Government of the Dominican Republic (GoDR) in advancing the strengthening of climate resilience and nature positive sustainable socio-economic development in the *Yuna* watershed, based on the conservation and preservation of its natural resources, integrated management of the natural environment, and the use of nature-based solutions.





## Background and Process to Develop the IP

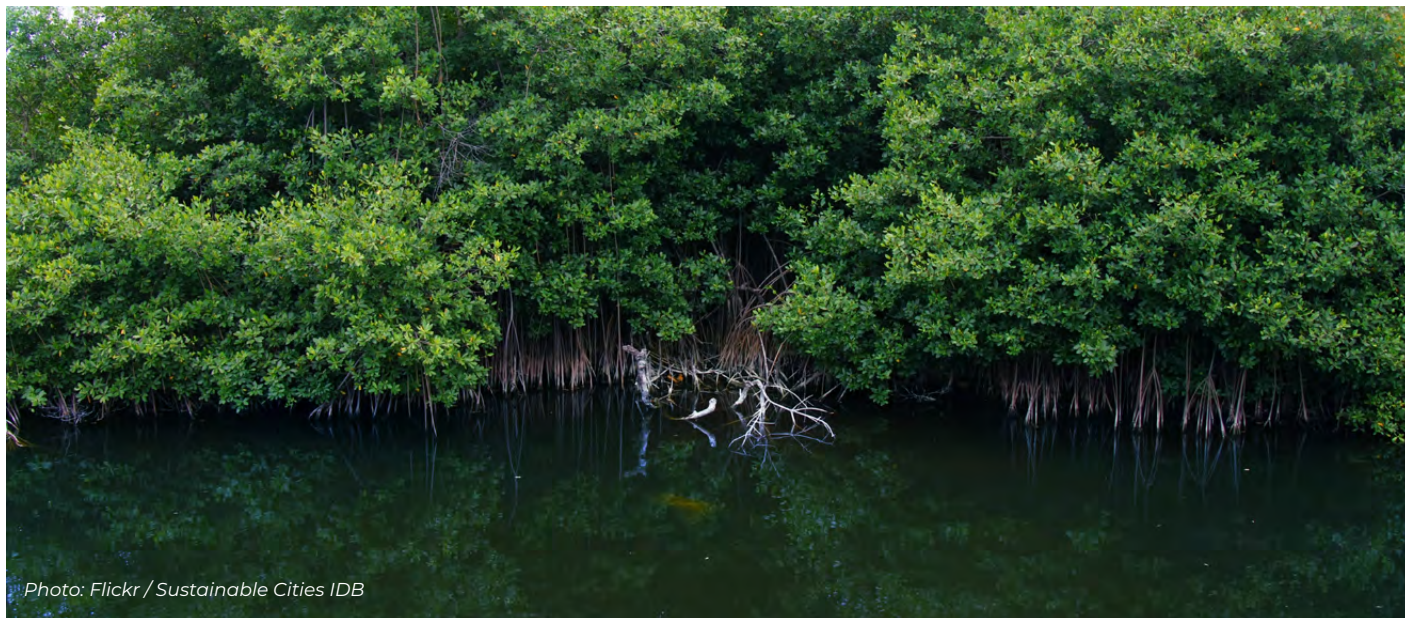


Photo: Flickr / Sustainable Cities IDB

### Studies carried out on the Yuna Watershed

With the objective of knowing the current state of the Yuna Watershed, identifying the main challenges and supporting the preparation of this IP, assessment and pre-feasibility studies were carried out in the most relevant thematic areas for the watershed, being the following:



Analysis of threats, exposure and vulnerability to Climate Change in the Yuna Watershed: Mainly based on existing information on the Yuna Watershed in the face of climate change.



Development potential of Sustainable Tourism: Studied the supply and demand of ecotourism activities in the upper, middle and lower zone (including the coast) of the Yuna Watershed, and whether there is development potential for these or new initiatives.



Assessment of Protected Areas and compatible activities: Identified the occupation problems that exist in protected areas associated with the Yuna Watershed, changes in land use to uses not compatible with the assigned protection figure and the pre-feasibility of possible solutions to these problems.



Assessment of the Payments for Environmental Services (PES) Law and its application potential: Identified opportunities for the application of PES in the *Yuna* Watershed through the execution of projects and studied the potential for the development of a voluntary market (biodiversity and/or carbon credits).



Formulation of a Portfolio of Nature-based Solutions (NbSs): Prepared NbS options that can be applied in prioritized sub-watersheds of the *Yuna*.



Elaboration of a Menu of Agricultural Technologies for producers in the watershed: Validated the differentiated social, environmental and economic feasibility for farmers in the upper, middle and lower watershed of the *Yuna* River and their capacities and opportunities to incorporate good agricultural practices.



Development Potential of the Blue Economy: Identified a portfolio of proposals that address the development potential of the blue economy in Bajo Yuna and its coastal zone, which contribute to sustainable development, climate and community resilience of the study area and especially to the restoration of ecosystem services.

In addition, the actors related to the watershed were involved through, mainly, the following processes:



**Scoping Mission:** It validated the scope of the project and the study areas to be analyzed in the watershed.



**Joint Mission #1:** It validated the base structure and components of the IP between the Dominican Government and the multilateral development banks (MDBs).



**Joint Mission #2:** It validated the final IP proposal between the Dominican Government and the MDBs.



**Consultations on Gender and Diversity:** Allowed the incorporation and mainstreaming of this topic in the IP.



**Public Consultation:** Allowed the incorporation of comments from all stakeholders interested in the project.



**Other workshops and internal consultations:** More than 10 workshops and meetings were held related to both the assessment processes for the identified thematic areas and for validation by the Dominican Government through the MMARN, NCCCDM, Ministry of Agriculture among other relevant government actors, as well as MDBs.

Both the studies and the consultation processes carried out allowed the preparation of the IP presented.

## **Problem + Theory of Change**




The main problem of this IP is the relationship between the degradation of ecosystem services and poverty in the Yuna Watershed in a context of high vulnerability to the impacts of climate change. The cycle of degradation of ecosystem services and poverty in the Yuna Watershed reveals an interdependence between environmental degradation and the economic precariousness of local communities. The unsustainable exploitation of natural resources fuels this negative dynamic, reducing the availability of essential ecosystem services and

exacerbating poverty. Climate change, with the increase in the frequency of extreme weather events, intensifies these adverse effects.

To address these challenges, it is crucial to adopt nature-based solutions that are socially sustainable and environmentally viable. An integrated “From Ridge to Reef (R2R)” approach is proposed. One that connects mountain systems with coastal-marine ecosystems, recognizing the interdependence between natural and socioeconomic systems. This holistic approach has the potential to improve ecosystem management and promote the socioeconomic well-being of communities throughout the watershed, highlighting the relationship between ecosystem services and community development.



Photo: Adobe Stock

Development Objective	Promoting integrated, resilient, low-carbon management of the Yuna watershed through nature-based solutions				
<b>Results</b>	 <b>1 Institutional and Regulatory Capacity</b> <ul style="list-style-type: none"> <li>Strengthened watershed governance and institutional capacities.</li> <li>Nature-based solutions considered in strategic plans and instruments.</li> </ul>		 <b>2 Ecosystem Restoration and Conservation</b> <ul style="list-style-type: none"> <li>Key terrestrial and aquatic ecosystems conserved or restored.</li> <li>Enhanced ecosystem services.</li> </ul>		 <b>3 Nature-Positive Economic Diversification</b> <ul style="list-style-type: none"> <li>Empowered communities (including women and people from diverse groups) to manage their own economic projects.</li> <li>Reduced dependence on vulnerable activities.</li> <li>Improved quality of life.</li> </ul>
<b>Products</b>	<ul style="list-style-type: none"> <li>Management Plans for prioritized Protected Areas in the watershed prepared and/or updated.</li> <li>Development Strategies for Ecotourism and Blue Economy elaborated.</li> <li>Support for capacity building to implement nature-based solutions and payment for environmental services mechanisms implemented.</li> </ul>		<ul style="list-style-type: none"> <li>Portfolio of Nature-based Solutions implemented in prioritized subwatersheds of the upper watershed and coastal zone.</li> <li>Mechanism for Payment for Environmental and Ecosystem Services co-financed.</li> </ul>		<ul style="list-style-type: none"> <li>Ecotourism Programs developed in priority areas of the watershed.</li> <li>Blue Economy Development Projects implemented in the lower <i>Yuna</i> watershed.</li> </ul>
<b>Activities</b>	Strengthen the regulatory framework and institutional capacities for integrated watershed management and the incorporation of nature-based solutions.		Implement nature-based solutions to improve key ecosystem services in the <i>Yuna</i> watershed.		Support community-based climate resilience and livelihoods through nature-positive economic diversification.
<b>Resources/ Inputs</b>	Nature-based solutions adapted to the context and needs of the <i>Yuna</i> Watershed.	Watershed-tailored solutions for the implementation of payments for environmental and ecosystem services.	Gender and Diversity addressed in the key aspects for community resilience in the watershed.	Institutional and community capacities focused on the promotion of NbSs.	Knowledge of CC impacts in the <i>Yuna</i> Watershed.



## Objectives

The objective of the Dominican Republic IP is to promote comprehensive, resilient and low-carbon management of the Yuna Watershed through nature-based solutions. This will be achieved through: (i) Strengthening the regulatory framework and institutional capacities for comprehensive watershed management and the implementation of nature-based solutions; (ii) Restoration and conservation of key ecosystems in the Yuna Watershed through the implementation of nature-based solutions; and, (iii) Supporting the climate resilience of communities and their livelihoods through nature-positive economic diversification. Specifically, the IP will support: i) The development and updating of Management Plans and other strategic instruments; ii) The design and implementation of nature-based solutions in prioritized sub-watersheds; iii) The implementation of strategic and innovative Payments for Environmental Services initiatives; iv) The design and execution of prioritized programs and activities that support positive economic diversification for nature in the watershed; and, v) The Dedicated Grant Mechanism.

The budget of the CIF-NPC of the Dominican Republic is 34 million dollars, and it is expected to mobilize at least 292.90 million dollars (with a ratio of 1:8) from multilateral development banks (MDBs). The support of the CIF-NPC will play a fundamental role in strengthening the comprehensive, resilient and low-carbon management of the *Yuna* Watershed, promoting nature-based solutions to increase resilience to the impacts of climate change. The CIF-NPC is expected to contribute to the conservation and

restoration of key ecosystems in the watershed, as well as the implementation of measures that reduce pressure on natural resources.



Photo: Adobe Stock



## Added Value and Complementarity

This IP adds significant value and complements the development initiatives identified for the Yuna Watershed. It highlights its comprehensive “From Ridge to Reef” approach, with actions that address key challenges throughout the watershed, especially in the most fragile areas. This IP focuses on financing investments for

public goods, while other projects focus on promoting private or collective investments. Furthermore, this IP strengthens the role of the Ministry of Environment and guarantees the active participation of local communities in decision-making and management of natural resources. It also supports nature-positive economic diversification in the watershed, promoting sectors such as ecotourism and the blue economy. These additional actions enrich and complement the efforts of other projects in the region, particularly those focused on the agricultural sector.




## Expected Results

CIF-NPC funds and technical assistance will provide financing for nature-based solutions that ensure the protection of key ecosystems for the *Yuna* Watershed while facilitating climate and community resilience, enabling positive economic diversification of nature in the area. The CIF-NPC funds (34 million dollars) will be channeled through the Inter-American Development Bank group and the World Bank group that will finance the projects identified under the program, prioritized by the Government of the Dominican Republic (GoDR) in the *Yuna* Watershed, with the following expected results:



Watershed governance and institutional capacities strengthened.



Nature-based solutions considered in strategic plans and instruments.



Key terrestrial and aquatic ecosystems conserved or restored.



Improved ecosystem services.



Communities (including women and people from diverse groups) empowered to manage their own economic projects.



Reduced dependence on vulnerable economic activities.





Improved quality of life.





## Specific Activities to be Financed


The activities were assessed and defined by the GoDR with the assistance and support of the MDBs. They are mentioned below and are detailed in the IP:


 Elaboration and updating of Management Plans in prioritized Protected Areas of the *Yuna* Watershed.

 Elaboration of a Development Strategy for the *Yuna* Watershed as an Ecotourism Destination and implementation of prioritized projects.

 Elaboration of a Blue Economy Development Strategy for the lower watershed and mouth of the *Yuna* and implementation of prioritized projects.

 Implementation of the NbSs portfolio in two prioritized subwatersheds of the upper *Yuna* Watershed.

 Implementation of the NbSs portfolio in a prioritized subwatershed of the low and coastal area of the *Yuna*,

 Co-financing of a Payment Mechanism for Environmental Services for the watershed.

 Dedicated Grant Mechanism.

The proposed IP requires a CIF-NPC budget of \$34 million. The CIF-NPC co-financing resources will be channeled through the IDB group and the WB group and implemented by the MMARN, which will implement the project through an executing unit.

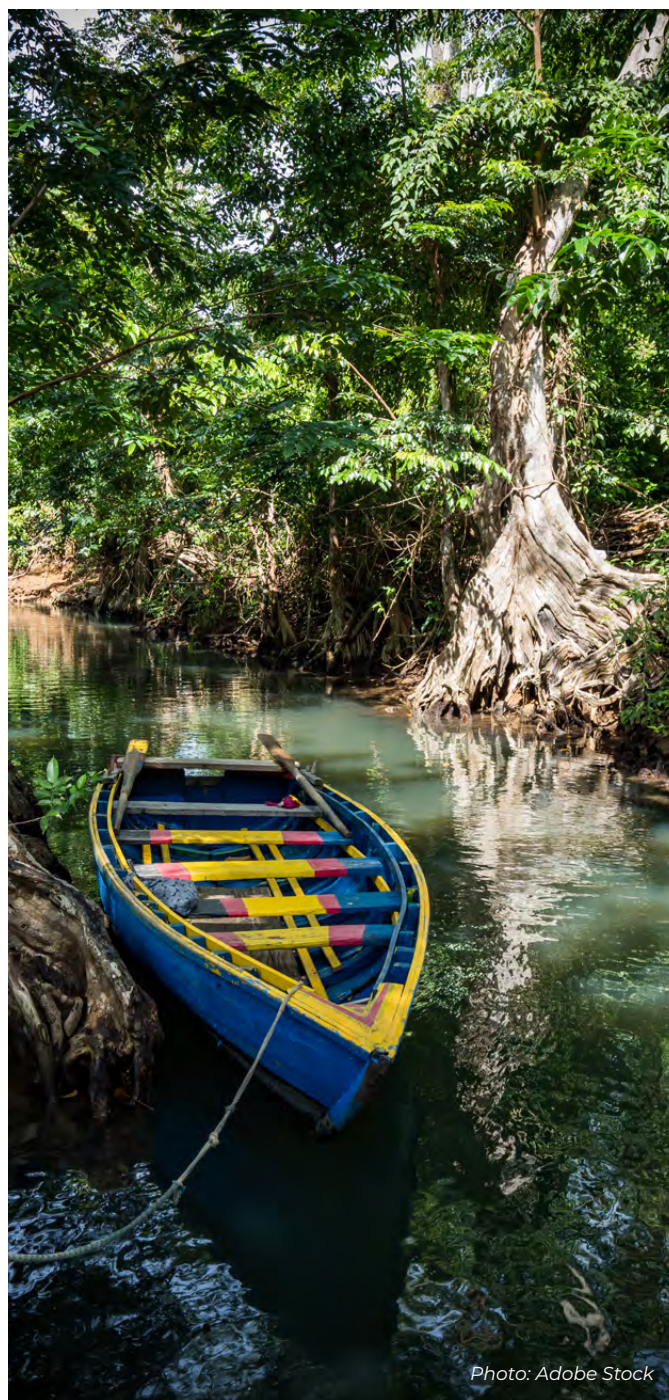


Photo: Adobe Stock

### Relation among problem, challenges, activities to be financed and expected results

Identified Problem	Identified Challenges	Proposed Projects
<p>The degradation cycle of ecosystem services and poverty in the Yuna Watershed reveals an interdependence between environmental degradation and the economic precariousness of local communities. Unsustainable exploitation of natural resources fuels this negative dynamic, reducing the availability of essential ecosystem services and exacerbating poverty. Climate change intensifies these adverse effects, increasing the frequency of extreme weather events.</p>	<p><b>Lack of or outdated Management Plans and other strategic instruments to strengthen the management of the protected areas associated with the Yuna, as well as to promote economic diversification in the watershed.</b></p>	<ol style="list-style-type: none"> <li>1/ Elaboration and updating of Management Plans in prioritized Protected Areas.</li> <li>2/ Elaboration of a Development Strategy for the <i>Yuna</i> River Watershed as an Ecotourism Destination.</li> <li>3/ Elaboration of a Blue Economy Development Strategy for the lower <i>Yuna</i> watershed and mouth of the Yuna River.</li> <li>4/ Support for the implementation of a Strategy for Payment for Environmental Services.</li> <li>5/ Support for the implementation of a NbSs portfolio.</li> </ol>
	<p><b>Climate change is exacerbating problems in the <i>Yuna</i> Watershed, increasing the frequency and intensity of droughts and floods. NbSs must be designed to meet these changing climatic challenges.</b></p>	<ol style="list-style-type: none"> <li>1/ Implementation of a portfolio of NbSs in prioritized micro-watersheds in the upper watershed and coastal area.</li> <li>2/ Co-financing with DR-L1161 and DR-T1298 of a Payment for Environmental Services Mechanism for the watershed.</li> </ol>
	<p><b>Communities do not have the opportunities, economic resources or capacities to take on ventures. It should also be considered that nature-based solutions must be socially and environmentally sustainable.</b></p>	<ol style="list-style-type: none"> <li>1/ Development of Ecotourism Programs.</li> <li>2/ Development of prioritized projects for the development of the Blue Economy in the lower <i>Yuna</i> watershed.</li> </ol>





# **COUNTRY CONTEXT: CLIMATE CHANGE AND NATURE-BASED SOLUTIONS**

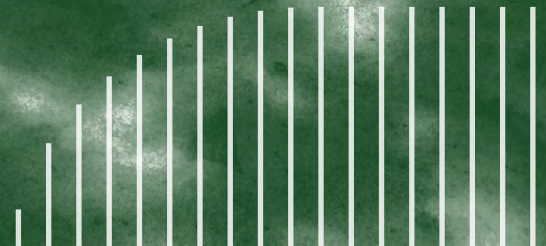




Photo: Adobe Stock



## Macroeconomic context

**The Dominican Republic is located on the second largest island in the Greater Antilles. In the last decade, the country has experienced rapid economic growth, positioning it among the fastest growing economies in Latin America<sup>1</sup>.**

Although the COVID-19 pandemic had a significant impact, the government policies adopted have managed to maintain economic stability. In 2022, the real Gross Domestic Product (GDP) expanded by 4.9% compared to 2021. Interannual inflation measured from August 2022 to August 2023 was 4.27%, remaining within the target range of 4.0%  $\pm$  1.0%<sup>2</sup>.

The Dominican Republic (DR) has one of the most stable economies in Latin America and the Caribbean (LAC). Between 2013 and 2022, the country registered an average annual economic growth of 5.3%,<sup>3</sup> above the region average of 1.1%.<sup>4</sup> At the same time, it maintained a controlled inflation rate within the target range established by the Central Bank of the Dominican Republic (BCRD, for its acronym in Spanish) with an average of 4%. Although the price pressures

caused by the external context led to inflation being above the upper value of the target range for more than two years since the third quarter of 2020, by July 2023 it has converged, decreasing to 4.0%. Macroeconomic stability has helped promote foreign direct investment (about US\$4 billion in 2022), particularly in the tourism sector, one of the country's main and most consolidated activities. On the other hand, the country has a per capita income greater than US\$10,600<sup>5</sup> US\$424,100 in Purchasing Power Parity (PPP), which places it as an upper-middle-income economy since 2005. By 2023, growth in economic activity is expected to be of around 3% in real terms, in addition to deficits, fiscal (of the general government) and external (current account result) between -3% and -4% of the Gross Domestic Product (GDP).

<sup>1</sup> MPEyD 2023. <https://mepyd.gob.do/analisis-del-desempeno-economico-y-social-2022/>

BCRD 2023. <https://www.bancentral.gov.do/a/d/5770-inflacion-interanual-general-en-agosto-2023-fue-de-427--y-subyacente-de-482--situandose-ambas-dentro-del-rango-meta-de-40---10-#:~:text=Inflaci%C3%B3n%20interanual%20general%20en%20agosto,meta%20de%204.0%20%25%20C2%B1%201.0%20%25&text=Santo%20Domingo.,Rep%C3%BAblica%20Dominicana>

<sup>3</sup> BCRD. Average GDP 2013-2022 Promedio PIB 2013-2022. <https://www.bancentral.gov.do/a/d/2533-sector-real>

<sup>4</sup> World Economic Outlook Database, abril 2023. [https://www.imf.org/en/Publications/WEO/weo-database/2023/April/weo-report?a=1&c=205,&s=NGDP\\_RPCH,&sy=2013&ey=2022&ssm=0&scsm=1&sc=0&ssd=1&ssc=0&ssic=0&sort=country&ds=.&br=1](https://www.imf.org/en/Publications/WEO/weo-database/2023/April/weo-report?a=1&c=205,&s=NGDP_RPCH,&sy=2013&ey=2022&ssm=0&scsm=1&sc=0&ssd=1&ssc=0&ssic=0&sort=country&ds=.&br=1)

<sup>5</sup> BCRD. <https://www.bancentral.gov.do/a/d/2533-sector-real>



## Poverty in the Dominican Republic

**In 2022, the estimated population was 10,760,025 inhabitants, with 50.5% being women and 49.5% being men.<sup>6</sup>**

**Between 2007 and 2019, the Multidimensional Poverty Index (MPI) of the Dominican Republic experienced a reduction of**

**63.3%<sup>7</sup>**

Similarly, the percentage of the population in monetary poverty in the country decreased by 51% during the same period, which means that 1.7 million people escaped poverty in that period of time.

Despite this and according to statistics from the Ministry of Economy, Planning and Development (MEPyD, for its acronym in Spanish),<sup>8</sup> for 2022 the general poverty rate was 27.7%, decreasing by 3.0 p.p. compared to 2021 (30.7%), while the extreme poverty rate was 3.8%, decreasing by 0.4 p.p. compared to 2021 (4.1%).

This corresponds to the poverty data in the Yuna Watershed, which will be detailed later in Chapter III: Context and Identified Problems of the Yuna Watershed.



Photo: Adobe Stock

<sup>6</sup> ONE 2023. <https://www.one.gob.do/media/0hqd0f5b/bolet%C3%ADn-censal-26.pdf>

<sup>7</sup> UNDP 2023. <https://www.undp.org/es/dominican-republic/noticias/republica-dominicana-redujo-en-un-21-su-indice-de-pobreza-multidimensional-global-aunque-todavia-persiste-la-pobreza#:~:text=La%20tasa%20de%20pobreza%20entre,13.4%20%25%20en%20la%20poblaci%C3%B3n%20adulto>

<sup>8</sup> MEPyD 2023. <https://mepyd.gob.do/publicaciones/boletin-de-estadisticas-oficiales-de-pobreza-monetaria-en-republica-dominicana-2022>



## Climate Change

**The Dominican Republic, due to its geographical location, is highly vulnerable to the impacts generated by natural phenomena as a consequence of climate change.**

The country is positioned at number 50 of 180 countries that have a high climate risk index, suffering recurrent floods due to climatic events such as extreme rains, tropical cyclones and droughts, which generates a significant impact on the national economy, availability of resources and development opportunities.<sup>9</sup>

Economic growth and its benefits are limited by the losses and damages caused by the consequences of Climate Change (CC). Due to its location in the so-called “Hurricane Corridor,” the DR is exposed to extreme climatic events and changes in averages associated with CC (droughts, floods, landslides, among others). For the period 1961-2014, it is estimated that the cost of damages caused by hydrometeorological events was 0.69% of the GDP per year.<sup>10</sup> To these direct damages, we must add the interruptions they cause to economic activity. According to an analysis carried out by the Central Bank,<sup>11</sup> after an

atmospheric phenomenon, the economy goes through a 15-month recovery process and, in that period, economic losses are approximately US\$1.1 billion, equivalent to 1.5% of the 2020 GDP. The occurrence and intensity of these events is expected to increase with global warming.<sup>12</sup>

Mitigation can help sustain economic growth in the medium and long term, as there is an opportunity for competitiveness and productivity in various mitigation actions. However, greater decarbonization could help reduce production costs and increase the competitiveness of the economy in several ways. For example, although global electricity generation from Renewable Energy (RE) is cheaper (BloombergNEF, 2023) and ensures stable costs, the Dominican electricity generation matrix still depends 84% on fossil sources (compared to an average of 50% in LAC) (OLADE, 2022). This dependence places it at a disadvantage compared to the vast majority of countries in the region, in which the participation of RE sources is much higher. At the same time, greater use of public transportation in cities would help reduce the use of private vehicles and, thus, reduce fuel consumption and vehicle congestion, with their consequent effects on productivity. Finally, good solid waste management (an area in which the country is lagging behind) could at the same time reduce

<sup>9</sup> IDB 2022 <https://publications.iadb.org/es/transporte-resiliente-al-cambio-climatico-como-priorizar-la-inversion-caso-de-republica-dominicana>

<sup>10</sup> World Bank, 2015. <https://mepyd.gob.do/wp-content/uploads/drive/Banco%20Mundial/Documento%20Gestion%20Financiera.pdf>

<sup>11</sup> Banco Central, 2021. <https://www.bancentral.gov.do/a/d/5452-banco-central-publica-el-informe-de-estabilidad-financiera>

<sup>12</sup> Zhai and Zommers, 2023. <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

negative impacts on the environment, the landscape and the health of the population, and promote a circular economy that generates jobs and is a source of economic growth.

**Greater decarbonization could help reduce production costs and increase the competitiveness of the economy.**

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## National Climate Strategies and Plans

In the Dominican Republic, the importance of climate change is firmly supported by article 194 of the Constitution of the Republic, which establishes the need for a territorial planning plan to guarantee the efficient and sustainable use of natural resources in line with adaptation to climate change. The national policy on climate change is based on a series of policies and laws, including Resolution No. 182-98 on the United Nations Framework Convention on Climate Change, Law 64-00, on the Environment and Natural Resources, and Law 57-07 on Incentives for the Development of Renewable Energy

Sources. In addition to the National Development Strategy of the Dominican Republic 2030, established in Law 1-12, it acknowledges the importance of environmental protection and action against climate change, seeking to promote the sustainable use of natural resources, conserve biodiversity and reduce vulnerability to natural disasters. In addition, through Decree 541-20, the Dominican Republic's National System for Measurement, Reporting and Verification (MRV) of Greenhouse Gases (GHG) is established, where GHG emissions are recorded to undertake mitigation actions that ensure financing aimed at promoting initiatives related to climate change.

**In the Dominican Republic, the importance of climate change is firmly supported by article 194 of the Constitution of the Republic.**

Through Law 64-00, the Secretariat of Environment and Natural Resources is created with the objective of being the governing body for the management of the environment, ecosystems and their services and natural resources to conserve the natural heritage of the nation, achieve sustainable development and, thus, guarantee society's right to a healthy environment. Through Decree 601-08 that establishes the National Council on Climate Change and the Clean Development Mechanism, they are aligned with the international commitments of the Dominican Republic before the United Nations Framework Convention on Climate Change (UNFCCC).

**The Dominican Government has developed a National Climate Change Plan 2015-2030, where it prioritizes actions to address the impacts of climate change in different sectors, such as agriculture, water and tourism.**

These policies and laws show the country's commitment to the fight against climate change and nature conservation.

In 2020, it presented its revised Nationally Determined Contribution (NDC), committing to

reduce 27% of GHG emissions by 2030. It includes 46 mitigation options, including 27 options for the energy and transportation sectors and 5 for the waste sector; and, 37 adaptation measures in sectors such as water security, food security, resilient cities, transportation infrastructure, biodiversity and forests. The NDC focuses on strengthening the domestic governance system as well as key institutional capacities to enable the effective implementation of its decarbonization and adaptation objectives, and to ensure close integration between CC and development priorities. It also emphasizes coherence with long-term objectives, national planning and monitoring of CC spending.



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# NPC Investment Plan alignment with the NDC-DR

Among the NDC measures closely related to this Investment Plan, and according to their sector, we can point out:



**Water Security:** (i) Improve the quality of water-producing ecosystems that serve as supply sources for supply systems, including improving the conditions of sanitation services; (ii) Strengthen (at least two) public-private partnerships and/or mechanisms for the management of the water sector.

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**Food Security:** (i) Integrated Productive Landscape Project through Land Use Planning, Restoration and Sustainable Intensification of Rice, in the Yaque del Norte and Yuna Watersheds.

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**Ecosystems, Biodiversity and Forests Sector:** (i) Incorporate Ecosystem-Based Adaptation (EBA) in sectoral climate change adaptation plans, biodiversity and sustainable development policies; (ii) Adopt the landscape-based approach. Map, assess and model ecosystem services, for conservation and restoration priorities and for the assessment of different scenarios and projections that allow recommending adaptation and management measures taking into account the landscape-based approach.

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**Coastal-Marine Resources Sector:** (i) Zoning and planning of coastal-marine systems taking into account adaptation and resilience to climate change; (ii) Promote resilient coastal infrastructure, favoring green infrastructure, as appropriate, taking into account an ecosystem-based approach; (iii) Manage a fund for the recovery of mangroves, estuaries and coral reefs and other coastal-marine ecosystems and species, which contributes to increasing resilience to the effects of climate change and variability.

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For additional details on this section, you can refer to Annex A of this Investment Plan: Summary of the Political and Legal Framework on the Issue of Climate Change.



# Nature-Based Solutions Context

## Institutional Framework and Support Capacity for Nature-Based Solutions

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In the Dominican Republic, water governance is developed in a specific legal and institutional context where various actors interact to influence and contribute to the decision-making process. In this context, a variety of key actors are identified that play significant roles in the management of the *Yuna* River Watershed. Each of these actors has different capacities for action and is governed by specific regulatory frameworks. The key government institutions include the Ministry of Environment and Natural Resources (MMARN), which is governed by Law 64-00, which develops the national natural resources policy, and works in coordination with other ministries to comply with the policies and plans that promote NbSs, such as the Ministry of Economy, Planning and Development (MEPyD), which develops macroeconomic policies for sustainable development and coordinates the Water Sector Cabinet. In addition, the Ministry of Agriculture (MA), which collaborates for the proper use and distribution of irrigation water, is a key actor due to its technical resources to implement activities that contribute to the reduction of GHG as a result of the change in land use and erosion, and the Ministry of Tourism of the Dominican Republic (MITUR, for its acronym

in Spanish), which regulates and promotes the tourism industry, an important manager to support the diversification and creation of alternative and sustainable livelihoods.

In February 2021, through Resolution number 010-2021, the Ministry of Environment stated the management of hydrographic watersheds and the adaptation of the country's river channels as a high Environmental priority, with the purpose of facilitating the normal flow of its waters and prevent risks of disasters that may impact the country, guaranteeing the protection of life, goods and services, and whose instructions to ensure compliance with the regulations correspond to the Vice Ministry of Soil and Water. A Watershed Management Plan has been organized, focused on comprehensive water management, with a first stage that includes rapid actions that contribute to the orderly use of natural resources while improving the poverty conditions of the inhabitants most committed to the retention of water in soils, aquifers and river sources; that is, to the inhabitants of the upper watersheds.

This initiative includes part of the National Development Strategy, which in its fourth axis proposes the comprehensive management of water resources in an efficient and sustainable manner, to guarantee the nation's water security. The *Yuna* Watershed is one of the 5 watersheds prioritized under this Watershed Management Plan.



The Dominican Government has a Water Sector Cabinet, which is a space to coordinate actions for the sustainable management of water resources, and the National Council on Climate Change and Clean Development Mechanism that promotes policies to mitigate and adapt to climate change. The National Institute of Hydraulic Resources (INDRHI, for its acronym in Spanish) is responsible for planning and managing water resources for the comprehensive development of hydrographic watersheds and guaranteeing efficient and sustainable use of water in areas such as agriculture, energy and environmental conservation. In addition, there are Irrigation Boards that are organizations made up of users that can manage and operate the water from irrigation systems transferred by the INDRHI, seeking to improve water management and rural development in their areas of influence. For its part, the National Institute of Drinking Water and Sewage (INAPA, for its acronym in Spanish) develops and implements the comprehensive plan for the supply of drinking water and wastewater management, and is also responsible for this management in areas not served by the Water Supply and Sewerage

Corporation of Santo Domingo or another water and sewage corporation in the country. The Water Supply and Sewerage Corporations are entities that manage and operate water and sewage services in different provinces. In the area of influence of the Yuna Watershed, the Water Supply and Sewerage Corporations of the provinces of Santiago, Moca, La Vega, Monseñor Nouel and Duarte are identified.

An important figure for water resources and the facilitation of implementing nature-based solutions are Water Funds. Water Funds are entities that operate an innovative model of governance and management of water resources through the first philanthropic trust created in the country, which is managed by a fiduciary and the resources generated are assigned to preserve the lands, through conservation, sanitation and environmental education actions in the upper watersheds they protect. Both were created in 2015<sup>13</sup> at the initiative of the Latin American Water Funds Partnership, under the framework of Law No. 122-05 on the Regulation and Promotion of Non-Profit Associations, based on the principle that large water users such

<sup>13</sup> Created in 2011, the Latin American Water Funds Partnership is an agreement between the IDB, FEMSA Foundation, the Global Environment Facility (GEF), the International Climate Initiative (IKI) and The Nature Conservancy (TNC) to contribute to water security in Latin America and the Caribbean through the creation and strengthening of Water Funds.

as aqueducts, hydroelectric plants, irrigators, bottling plants, mining companies, among others, that voluntarily agree to contribute funds for the conservation of water-producing areas in order to ensure a continuous supply (quantity) and support sanitation projects that contribute to improving the quality of this resource.

In the country, the Santo Domingo Water Fund (FASD, for its acronym in Spanish) and the Yaque del Norte Water Fund (FAYN, for its acronym in Spanish) stand out. Both entities have the organizational and financial structure that facilitates the adoption and implementation of projects in the respective watersheds. The experience managing conservation projects and their relationship with the public and private sectors enables rapid and effective intervention.

In response to environmental challenges in critical areas such as the Yuna River Watershed and environmental degradation in the rest of the country, Law 44-18 was enacted in 2018, establishing Payment for Environmental Services (PES). This law proposes a scheme to value and economically reward the environmental services provided by natural ecosystems and establishes a payment mechanism for the activities, companies and institutions that use or benefit economically from said services. It is established that economic beneficiaries must pay a fee to ensure the continuous provision of environmental services. However, the lack of a definitive regulation that operates this law has made it impossible to activate agile implementation mechanisms or mobilize the amount of financial resources necessary.<sup>14</sup>

The National Energy Commission (CNE, for its acronym in Spanish) is key because it promotes investments in the energy sector and supervises

its impact on the environment, and the Dominican Hydroelectric Generation Company (EGEHID, for its acronym in Spanish) designs, builds, manages and operates the generation of electrical energy. They are focal points in the Yuna Watershed due to the hydroelectric dams that operate there.

The Government has the Dominican Council of Fisheries and Aquaculture (CODOPESCA, for its acronym in Spanish), the Dominican Agrarian Institute (IAD, for its acronym in Spanish) and the Banco Agrícola de la República Dominicana (BAGRICOLA, for its acronym in Spanish), which are dependencies of the MA. In addition, it has the National Authority for Maritime Affairs (ANAMAR, for its acronym in Spanish) that ensures the research, conservation and use of maritime resources. They are entities involved in the implementation of NbS actions by mediating productive fishing activities and economic support for agricultural activities.

## **Private Sector, Innovation and Resource Mobilization of Nature-Based Solutions**

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**The Dominican Government establishes in the NDC-DR 2020, measures with the purpose of mobilizing public and private investments to promote sustainable development in the Dominican Republic.**

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<sup>14</sup> Gómez Valenzuela, 2023. Informe diagnóstico de la Ley 44-18 sobre pago por servicios ambientales

The country's strategy includes the projection of mobilizing USD \$670,822,568.00 by 2030 in the water security sector, destined for investment projects that improve access to drinking water and sanitation. In addition, other initiatives such as Law 44-18 on Payment for Environmental Services, which encourage the conservation of ecosystems. To promote these strategies, we seek to actively involve civil society and the private sector, since their participation provides specialized knowledge and financial resources, enriching the planning and execution of projects. In addition, cooperation with international organizations plays a fundamental role in providing experience, technical cooperation and the financing necessary to carry out larger initiatives.

### **Country Experiences to involve Nature-Based Solutions in Landscape Planning and Management**

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#### **The Dominican Government has shown its commitment to the use of Nature-Based Solutions (NbSs) for the management of landscapes and natural resources.**

In its Nationally Determined Contribution (NDC) 2020, it establishes climate commitments until 2030, prioritizing water security and promoting integrated management of hydrographic watersheds, taking into account social and gender aspects. These measures seek to improve the quality of water-producing ecosystems, manage the risk of flooding and protect coastal-marine areas. In addition, public-private collaboration is encouraged in the management of the water sector. In line with these initiatives,

the National Development Strategy 2030 promotes seven transversal policies, including a focus on human rights, gender equality and territorial cohesion, which support the elements of Nature-based Solutions. This is reflected in the National Plan for Climate Change Adaptation of the Dominican Republic 2015-2030, which highlights the importance of actions for climate adaptation at the national level.

#### **In the Dominican Republic, projects have been initiated that seek to implement Nature-based solutions to address climate change and strengthen resilience in various regions.**

Among these projects is "Nature4Cities" in Santiago de Los Caballeros, which focuses on adaptation to climate change in urban areas through NbSs. Additionally, the "Resilient Islands" project in Miches aims to help Caribbean islands address the effects of climate change through NbSs. On the other hand, the "Ecosystem-based Adaptation" project in the Central American Dry Corridor and Arid Zones of the Dominican Republic, in the Mao and Guayubín Watersheds, seeks to reduce deforestation and increase resilience to droughts and variations in precipitation. Also, the current and previous governments have invested significant resources in an agroforestry program that encourages the conversion of areas into pastures in areas exploited for agroforestry (mainly coffee and cocoa), particularly in the southern region of the country.

## **In the Dominican Republic, collaborative projects between the government and civil society have been designed and successfully implemented to promote nature-based solutions.**

An example of this collaboration is the “Villa Poppy Project,” which operates through the Supérate Program of the Presidency of the Republic. This project aims to promote sustainable development in vulnerable populations that have been relocated from lands located in the Juan Bautista Pérez Rancier National Park (Valle Nuevo). Within the framework of this project, climate-smart agriculture concepts are applied, demonstrating a joint effort to address issues of sustainability and adaptation to climate change. However, it is important to highlight that a limitation has been identified in terms of government support for activities carried out by associations in the upper part of the watershed, which highlights the need to strengthen collaboration and government support in initiatives related to nature-based solutions.

Other cases considered successful and related to the upper *Yuna* Watershed are the co-management agreements between the Dominican Government and the private sector for the Loma Quita Espuela Scientific Reserve and the Ébano Verde Scientific Reserve. Both have their Foundation constituted as non-profit and non-governmental organizations, with the purpose of providing the bases for a comprehensive development of the natural resources of these reserves including their buffer zones, through community development programs, sustainable agriculture, forestry production and research.

For its part, in the mouth and coastal area of the watershed, we have as an example the mangrove reforestation initiatives in the Mangroves in Bajo *Yuna* National Park where the Ministry of Environment and the Center for the Conservation and Ecological Development of the Bay of Samaná and its Surroundings (CEBSE, for its acronym in Spanish) carry out joint work for the repopulation of mangrove and Drago trees in critical areas where the mangrove ecosystem has been lost as a consequence of the advance of agricultural use of the land in the lower watershed.

There are also important initiatives from the private sector at the watershed level. A notable example is the projects of the Dominican Mining Corporation (CORMIDOM, for its acronym in Spanish), which executes agroforestry initiatives in areas of the upper watershed in order to guarantee the ecosystem service of water provision and reduction of sedimentation due to deforestation.

## **In the upper watershed of the Yuna River, the Federation of Peasants Towards Progress (FCHP, for its acronym in Spanish) leads a rural tourism initiative that seeks to promote sustainable livelihoods for peasant communities in the region.**

The FCHP works in collaboration with local organizations and communities to improve the use of natural resources, implementing projects such as agroforestry plantations,

community tourism projects, and reforestation and restoration work in strategic areas of the upper watershed. This initiative involves about 600 families in the upper part of the watershed, promoting sustainable practices and reforestation projects that have government incentives, but are maintained mainly by the effort and interest of the community's inhabitants. The FCHP also operates a nursery that provides native plants for reforestation and agriculture for family farms.

There are PES experiences that are high-value starting points for the development of PES schemes in the Dominican Republic. Among them the following can be mentioned:

**Payment for Environmental Services in the Yaque del Norte River Watershed (PSANCYNA, for its acronym in Spanish).**

Since 2006, it was implemented as a pilot project through the signing of an agreement between the Ministry of the Environment, the Corporation of State Electrical Companies (CDEEE, for its acronym in Spanish) and the Water Supply and Sewerage Corporation of Santiago (CORAASAN, for its acronym in Spanish). Through the agreement, direct economic contributions were received from EGEHID and CORAASAN and financing from part of the project staff, as well as from reforestation brigades by the Ministry, which allow financing the activities of PSANCYNA in order to contribute to conservation of the water bodies of the Yaque del Norte watershed and contribute to the sustainability of the water resource in quality and quantity, reforestation work is carried out by hiring community brigades and direct economic payments for water environmental services.

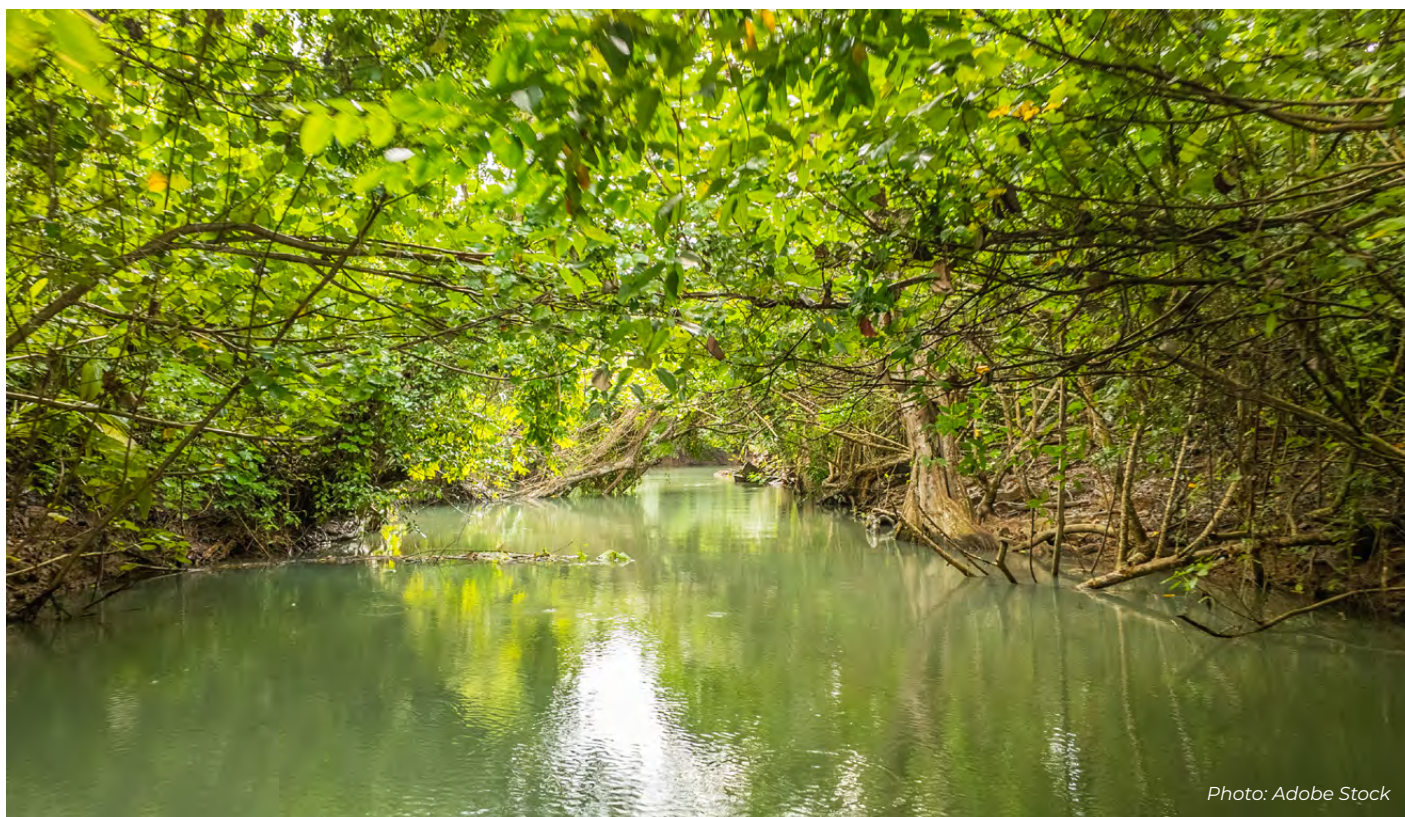


Photo: Adobe Stock

The project has benefited 44 owners and/or holders of land and covered a total of 1,942 hectares with the PES scheme, with 1,737.07 hectares in the Forest Protection modality and 205.55 hectares in the Agroforestry Systems modality. Currently the project has not been able to be expanded due to lack of financing.

### **El Zorzal Protection Project**

This project's objective was to support the conservation of the migratory Thrush through conservation actions on the ground, which would allow the country to generate experience in the application of payment for environmental services with focus on the protection of biodiversity in protected areas, in the areas of influence of the Loma Guaconejo and Loma Quita Espuela Scientific Reserves. Its area of influence is therefore located in the middle watershed of the Yuna.

Subsequently, a consortium of civil society entities formed a Private Protected Area (the El Zorzal Private Reserve), which seeks sustainable territorial development with the producers of the Reserve's buffer zone. This project focuses on the conversion of pastures into forest, the productive improvement of cocoa production, and an organic cocoa brand with sales to artisanal chocolate producers in Europe, the United States and Canada. The project achieves the sale of the first carbon credits with the voluntary Plan Vivo standard, under the concept of fair price in the sale of cocoa from the El Zorzal Private Reserve.

## **Gaps in Access to Resources, Services and Markets faced by Women, Men and Diverse Populations in the Context of Nature-Based Solutions**

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**In the Dominican Republic, the inequality and inequity gaps that affect women and girls represent an important challenge to face in the sustainable management of natural resources, environmental management and the fight against climate change.**

These phenomena affect women and men differently, thus deepening the conditions that translate into greater poverty, social, economic, cultural and political exclusion for them.<sup>15</sup>

**During the last decades, economic growth in the Dominican Republic was stable and some social progress was achieved in poverty rates, but challenges still remain in achieving inclusive and equitable development.**

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<sup>15</sup> World Bank/MMARN, 2021

Forty four percent (44%) of the population remains vulnerable to economic crises and gender inequality, the country ranked 106 out of 191 (UNDP, 2021), mainly due to the low political and economic participation of women. Challenges such as maternal mortality, teenage pregnancy, access and quality of basic services (electricity, water and sanitation) have persisted beyond the pace of economic growth (World Bank, 2023). These challenges increase multidimensional vulnerability against climate shocks, mainly for women, older adults and people with disabilities. Climate action under a gender-based perspective can boost economic development and poverty reduction.

**The climate crisis, like practically any other humanitarian or development challenge, has a greater impact on women.**

Climate change is a threat to all people, however, it affects them differently. The impacts of climate change perpetuate and magnify structural inequalities, between women and men, for example, where women earn their living in climate-related jobs, such as agriculture and other manual jobs.

According to SIUBEN data, **60%** of households are headed by women

3,221,157 women have been registered, which represents 50.5 of the total number of registered people. More than 60% of female heads of household are responsible for a child under 14 years of age and/or an adult over 65 years of age<sup>16</sup>. Provinces in the watershed such as *Santiago, Monseñor Nouel, La Vega y Espaillat*, have higher percentages of female heads of household.



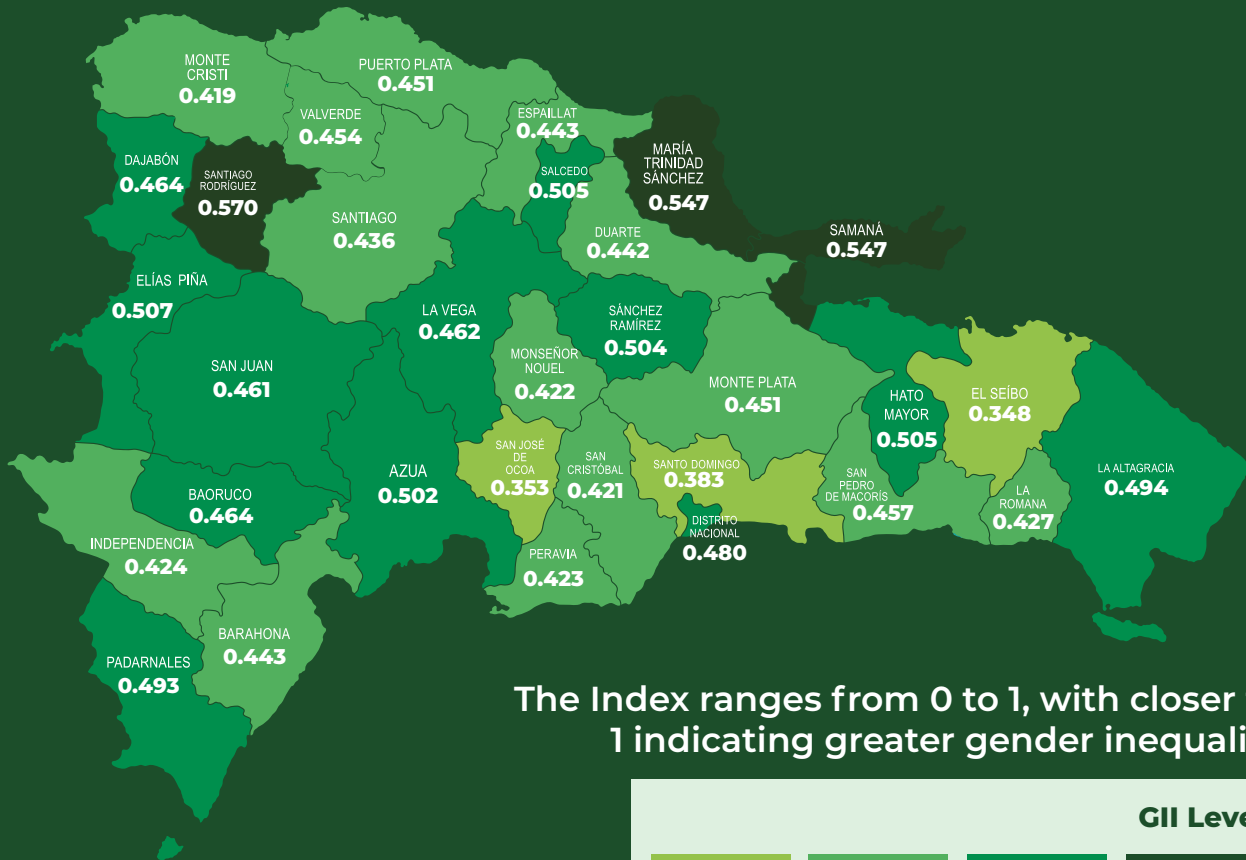
<sup>16</sup> Sistema único de Beneficiarios (SIUBEN). Datos socioeconómicos de las mujeres en la República Dominicana – 2020. Acceso en: <https://adaptacion.cambioclimatico.gob.do/datos/datos-socioeconomicos-de-las-mujeres-en-la-republica-dominicana-2020/>

**Figure 1 / GDI-UNDP Gender Inequality Index Map, 2014**

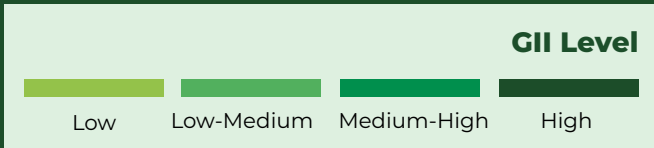


**Gender Inequality Index (GII)** reflects the disadvantages that women may experience compared to men in 3 dimensions: **empowerment, reproductive health, and labor market.**

Gender Inequality Map by Provinces, 2014



The Index ranges from 0 to 1, with closer to 1 indicating greater gender inequality



Human Development is reduced by

**44 %** due to gender inequality

**In the Yuna Watershed, the province with the highest inequality index is Samaná, followed by Hermanas Mirabal and Sánchez Ramírez, according to the Gender Inequality Index (GDI-UNDP, 2014), which shows the disadvantages that women can experience regarding men, in three dimensions: Empowerment, reproductive health and the labor market.**



## Social Vulnerabilities

Regarding the magnitude of social vulnerabilities in terms of violence, income and access to basic services, the level of precariousness in Dominican families, in general, is high. 26.5% of households suffer from some deprivation of goods or services that enable their subsistence or development in minimal conditions. For the rural area this percentage doubles, 42.9% of these, and for the Cibao Sur and Valdesia region, the result exceeds the national average 32% and 28.8% of households, respectively.

At a general level, the country registers an important literacy rate, 98% of the population aged 15-24. In the range between 5 and 29 years old, 60.1% say they are attending an educational center, university or early childhood education program, and 37.5% say they attended. Furthermore, 25.3% of women who are heads of household have a university educational level. In the case of male heads of household, the percentage with this level of education is lower, 20.3%. However, there is great precariousness in educational quality. According to the latest results of the PISA test, only 25% of students reached a reading level that allows them, at a

minimum, to identify the main idea of a text of moderate length, to find information based on explicit criteria, among other aspects of little complexity.

The vulnerabilities that households generally suffer become much more pressing for women. A recent study on the feminization of poverty in the Dominican Republic concludes that they are less likely than their peers to go from poor to non-poor, and that they are more likely to fall into poverty in the presence of any economic shock. This result varies depending on the sector in which they work and the area of residence.

The sustained increase in the maternal mortality rate is a reflection of the precariousness of health care; in 20 years it went from 79 deaths per 100,000 births to 107 deaths. Added to this is teenage pregnancy. At the national level, 18.9% of women between 15 and 19 years of age have had a live-born child or are pregnant. Only Cibao Sur, of the regions under analysis, registers a percentage 3 percentage points below of the average. The rest of the regions register a result similar to the national average. In this area, it

is worth mentioning that the country is one of the few in the world in which the interruption of pregnancy, under any circumstance, is criminalized.

Likewise, the femicide rate in the country is one of the highest in the region, 42% of women between 15-19 years old reported having suffered some type of physical, sexual or psychological violence at the hands of their current or previous partner in the last 12 months. In addition, of the total number of minors under 18 years of age

who married before the State in 2018, 95% are female.

In summary, a context of social precariousness at the national level, together with a culture in which, predominantly, women are relegated to reproductive life and men to productive life, results in gaps in political and economic participation. Added to this is violence such as high rates of femicides, teenage pregnancy and maternal mortality, which limit their individual development.



Photo: Adobe Stock



## Diverse Population Groups

### Population with Some Disability

At the national level, 4.9% of people five years old or older have some type of disability. When analyzing these data between the male and female population, no significant differences were recorded. However, when looking at household heads, it stands out that the percentage of female heads of household with some disability (8.7%) is higher than the male heads of household (5.4%).

Likewise, in rural areas the percentage of people aged 5 years or older who have some type of disability is higher than those who reside in urban areas, 5.6% and 4.9%, respectively. The Valdesia and Higuamo regions present, comparatively with the other regions, the highest percentage. In both, the main disabilities indicated are “to see, even when wearing glasses” and “to walk or climb steps.” The provinces Hermanas Mirabal, Monte Plata and San José de Ocoa have around 6% of their population with some type of disability, a result higher than the national average.

There are wide differences with respect to the social vulnerabilities of households in which the head of the household has a disability: Severe food insecurity is higher, standing at 25.1%. On the other hand, in those households in which the head of the household reports that they do not have any disability, the percentage is 19%. In that same order of vulnerabilities, it is observed that 22% of the population aged 15 years and

over, with some disability, report that they do not know how to read and write. When expanding the age range, between 5 to 29 years, and comparing school attendance between those who report a disability and those who do not, the difference is wide. 18.1% reported that they had never attended school, while for those who say they do not have a disability this percentage is only 1.4%.



These gaps are the result of the economic precariousness and physical limitations faced by the population under analysis. Specifically, the need to work and disability are indicated by 34.7% and 29.4%, respectively, as the main reasons why the community of people with disabilities never attended formal education. However, although this percentage doubles when it comes to people who do not have disabilities, it can be highlighted that 10.3% of the population with disabilities has a university level.

With respect to the labor market, although the gap between the employment rate of the population aged 10 years and over according to the disability situation is wide (28.5% with disabilities versus 60.5% without disabilities), the differences by sex in both population groups behave similar. Specifically, in the case of open unemployment, the female population with some disability constitutes 69.6% of the unemployed among the total unemployed with disabilities, for the population without disabilities they represent 63.9% of the total unemployed.

The width of the gap between both sexes is indistinct to the disability condition and this pattern can also be observed in the hours dedicated to domestic work or unpaid care work for one's own household. It is observed that the female population that has a disability and performed unpaid domestic or care work spent an average of 20.2 hours a week, while the male population with the same condition spent an average of 8.4 hours. As for the population without disabilities, the time dedicated, in the case of women, is 25.5 hours per week on average and 11.3 in the case of men. Finally, regarding the use of information and communication technologies in the population with disabilities for the purposes of defining mechanisms of inclusivity, ENHOGAR reports that 10.7% reported

the use of a computer, 49.6% the Internet, and 62.3% use the mobile phone.

## Migrant Population

The country's total foreign-born population is estimated at 5.6%, with a male predominance, for every 100 women there are 160.47 men. When observing the estimate by planning regions, only Cibao Norte concentrates a population close to the national percentage, 5.9%; the other regions under analysis Cibao Sur, Nordeste, Valdesia and Higuamo, a population of a little more than 3% of the total of each one of these regions (see Table 2.7). For those provinces that stand out for their production of rice, bananas, food and livestock, the foreign population represents 5.3%.

In the case of the Haitian population, they represent, of the total number of people born abroad, 87.3%. The majority reside in urban areas (66.4%) and mainly the male population (62.9%). The ENI-2017 report highlights a greater presence in provinces with a high population concentration (43.8%) and in those that produce rice, bananas, food and livestock (17.7%). Likewise, under the regions of interest, the two main ones in this population are Cibao Norte (16.8%), which represents the main region among all planning regions, and Valdesia (7.2%). As for Cibao Sur, Nordeste and Higuamo, they are concentrated in a percentage of less than 5.

The majority is a young population, 54.4% of which is concentrated in the age ranges between 20-24 years. Regarding Dominican documentation, 30.6% reported that they had a regularization card for foreigners, 15.6% had a passport from their country with a valid visa, and 2.2% stated a Dominican identity card for foreigners. When compared with those born

in other countries, the percentage of people who report some Dominican documentation is significantly higher, with respect to a current visa, 52.1%; and identity card for foreigners, 16.8%, regularization, among other documents.

Of Haitian migrants, 95% report they do not have health insurance. Likewise, 27.7% report that they do not know how to read or write, a significant gap with respect to migrants from other countries, which only represents 1.9% of them. A similar gap is observed regarding the source of water supply, 49.9% of the households in which those born in Haiti reside is “through a

faucet placed in the patio of the household,” in the case of those born in the rest of the countries it is barely 7.6%. Of those received inside the household, the highest percentage is in Cibao Norte and does not reach 30%.

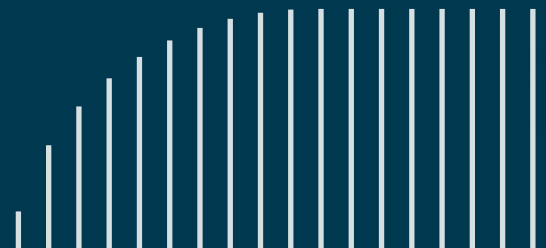
With respect to Spanish language proficiency, 38.9% reported they knew little or nothing, and 29.1% reported that they knew a little. This percentage is higher in the Cibao Nordeste and Sur regions. In general, a greater percentage of the male population reported that they spoke very well or well than the female population (34.9% and 27.7% respectively).



Photo: Adobe Stock



# **CONTEXT AND IDENTIFIED PROBLEMS OF THE YUNA WATERSHED**







# The Yuna Watershed and its relevance for the Dominican Republic

## Geo-physical Characteristics of the Yuna Watershed

The Yuna Watershed is the second most important in the Dominican Republic, and constitutes **11%** of the national territory.

with an area of about 5,260 km<sup>2</sup>. It rises in the mountains of *San José de Ocoa* (municipality of *Bonao*) and flows into the bay of *Samaná*.<sup>17</sup> The average flow in the lower watershed is 91 m<sup>3</sup>/s,

with records of up to 700 m<sup>3</sup>/s, which makes the *Yuna* River the largest source of running water in the country.<sup>18</sup>



Photo: Adobe Stock

<sup>17</sup> Government of the Dominican Republic-Environment, 2023

<sup>18</sup> ITAC (2021) Informe diagnóstico integral de la CHRY. Consultoría de estudios y asistencia técnica para el manejo integrado de recursos hídricos en la cuenca hidrográfica río Yuna (PMICHRY). Instituto Nacional de Recursos Hidráulicos (INDRHI) y Banco Interamericano de Desarrollo (BID), Santo Domingo.

**Table 1/ General synopsis of the Watershed.**

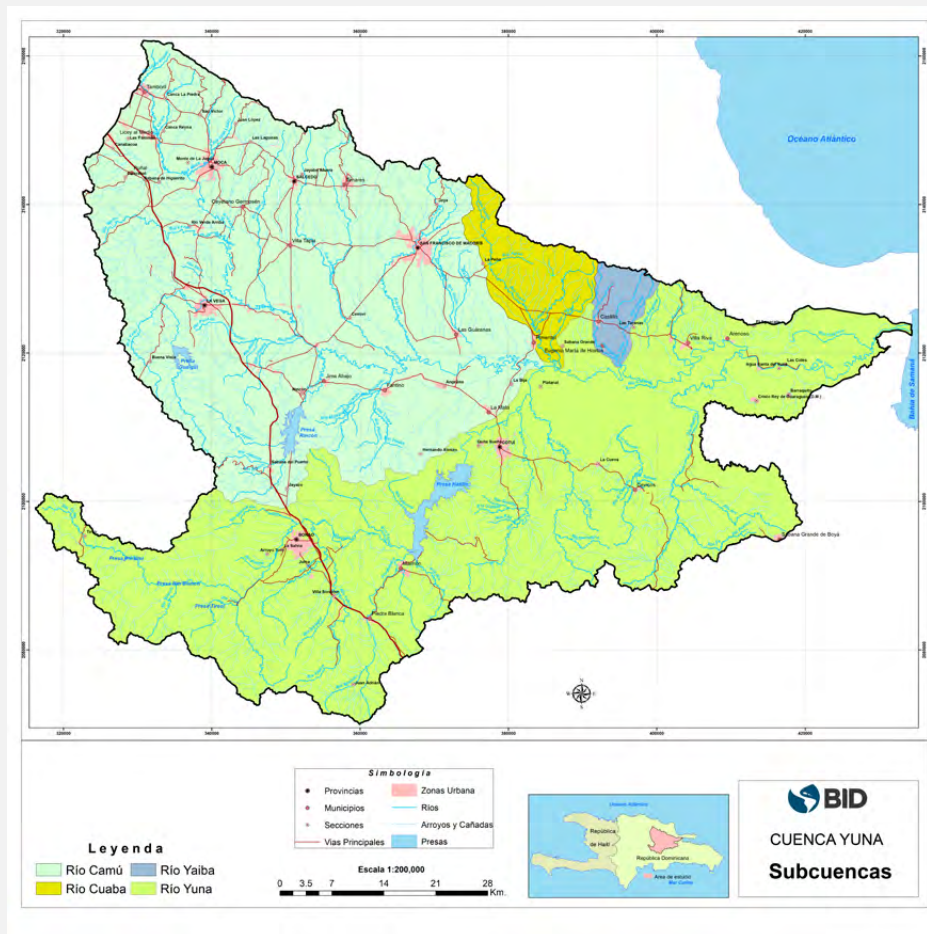
<b>Sinopsis general de la Cuenca del Yuna</b>	
<b>Watershed Type</b>	<b>Exorheic (river mouth into the Atlantic Ocean in Samaná Bay)</b>
Administrative Regions	Cibao Sur and Cibao Noreste
Number of Provinces	9
Surface	526,527.34 ha (5,265.27 km <sup>2</sup> )
Estimated Total Population (2021)	1,645,597
Population Density	312.5 Hab/km <sup>2</sup>
Main Tributary	Camú River (144.35 km)
Birth of the Camú River	Ébano Verde Scientific Reserve
Birth of the Yuna River	Loma La Humeadora National Park
Yuna River Extension	197.22 km
Protected Area of the Watershed	11.7%
Pluviometry	2,500-3000 mm/year
Monthly Water Production Average	91 m <sup>3</sup> /sec
Number of Municipalities	33
Number of Municipal Districts	59
Main Reservoirs	Hatillo, Rincón and Blanco
Watershed Hydroelectricity Generation	262 GW hour/year
Water Storage Capacity	517 million cubic meters
Gold Export (2021)	US\$1.78 MM
Cocoa Export (2021)	US\$ 206 M

Prepared by: Víctor Gómez Valenzuela, 2023

The *Yuna* River Watershed is characterized by two main valley systems: The Bonao valley and the *Yuna-Camú* valley. The main rivers in the watershed are the *Yuna* River and the *Camú* River. The latter is born in the central mountain range and runs along the municipality of La Vega, in the Cibao Valley; and flows into the *Yuna* River in the province of San Francisco de

Macorís. The *Yuna* River subwatershed has an area of 2,905 km<sup>2</sup> and has the tributaries of the Masipetro, Yuboa, Maimón, Yujo, Cuaba and Blanco rivers. The *Camú* River, for its part, forms a subwatershed that occupies an area of 2,328 km<sup>2</sup> and receives contributions from the Licey, Jima and Cenoví rivers.

**Figure 2 / Yuna River subwatersheds**

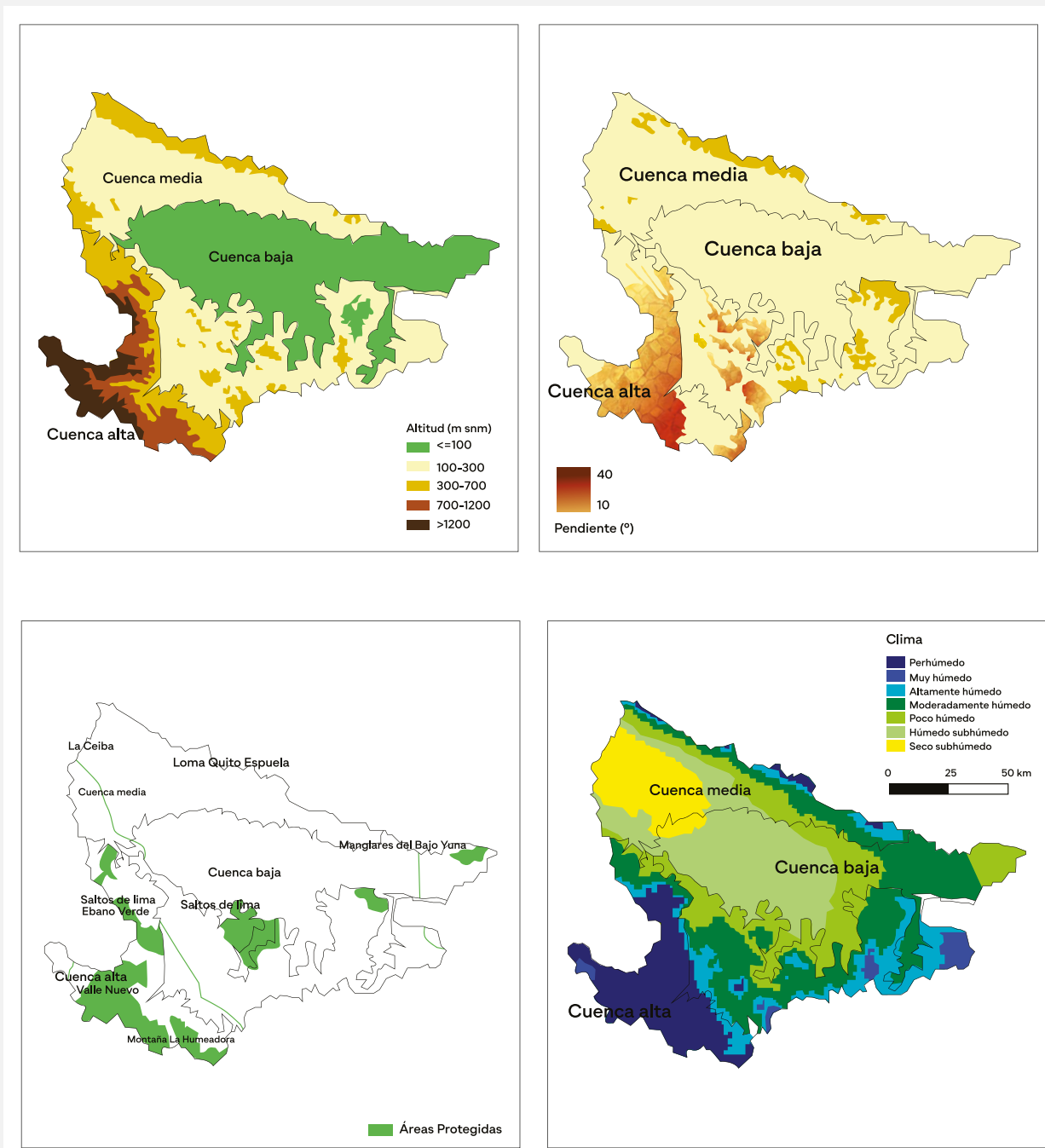


Source: Víctor Gómez Valenzuela, 2023

Starting from the most accredited definitions (Ordoñez Gálvez, 2012), we can define:

- **Upper watershed:** The area where the source of the main river is located, in mountainous areas, generally characterized by a high slope, limited in the upper part by watersheds.
- **Middle watershed:** The area in which the waters collected in the upper parts gather and in which the main river maintains its
- **Low watershed:** The area where the river flows into the receiving body, made up of a larger river or the sea, through estuaries or deltas. In this area, deposition processes dominate and the course of the river is subject to variations in the event of flooding.

**Figure 3** / Map of the main characteristics of the Yuna Watershed: Altitudinal bands (upper left), slope (upper right), location of protected areas (lower left), and climatic zones (lower right).



Source: Michela Izzo, 2023

**Table 2** / Main height and slope statistics of the *Yuna* River Watershed.

Altitude	Lower Watershed	Middle Watershed	Upper Watershed
<b>Minimum height</b>	2 m	49.0 m	299.0 m
<b>Altura promedio</b>	54.7 m	214.9 m	947.9 m
<b>Altura máxima</b>	219.0 m	994.0 m	2551.0 m

Slope	Cuenca Baja	Cuenca Media	Cuenca Alta
<b>Minimum slope</b>	0.0° m	0.0° m	0.0° m
<b>Average slope</b>	2.9° m	8.6° m	20.9° m
<b>Maximum slope</b>	40.2° m	48.7° m	66.8°

Source: Michela Izzo, 2023

The *Yuna* Watershed is one of the most intervened in the Dominican territory, given that in addition to the activities carried out in its watershed, there are five reservoirs in it, including the Hatillo, Rincon and Blanco dams with storage capacities of 441, 75.5 and 0.73 million cubic meters of water, respectively.<sup>19</sup> The combined potential of its reservoirs for the generation of hydroelectricity amounts to 262 gigawatts/hour/year.<sup>20</sup>

Due to the wealth of its natural resources, the *Yuna* River Watershed is strategic for the country, both in terms of conservation and in terms of the ecosystem services it provides and the economic activities that are developed there. The main

ecosystem services provided by the watershed include: (i) Provision of water for consumptive and non-consumptive uses; (ii) Conservation of ecosystems and wildlife habitats; (iii) Soil conservation; (iv) Capture and fixation of carbon; (v) Removal of atmospheric pollutants; (vi) Pollination; and, (vii) Scenic beauty or landscape. Approximately 11.7% of the watershed surface is under some type of protection figure (60,580 ha or 605.80 km<sup>2</sup>). Figure 4 shows the protected surface of the watershed and the protected areas that are directly related to it.

In total and directly in the watershed there are about 18 protected areas distributed between the upper, middle and lower subwatersheds,

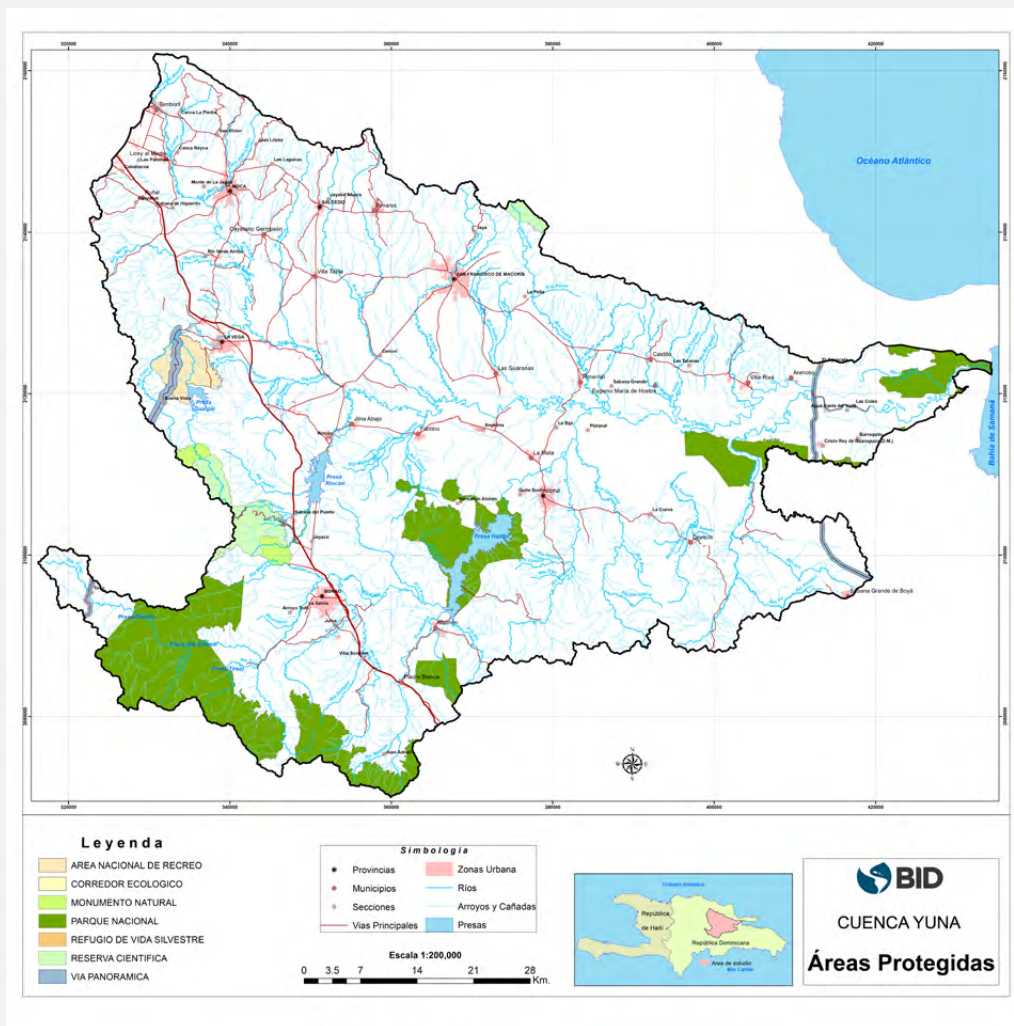
<sup>19</sup> Bautista de los Santos, Q., Melina, Determinación de los Caudales Ambientales de la Cuenca del río Yuna, Republica Dominicana. Tecnología y Ciencia del Agua, 2014. 5(6): p. 33-40.

<sup>20</sup> Marte, D., Ríos dominicanos: redes de vida. 2022, Santo Domingo, D. N.: Banco Popular Dominicano.

including panoramic routes, natural monuments, scientific reserves, national parks and wildlife refuges, the following classified in the national parks category:

- Valle Nuevo National Park (22,812 ha)
- Aniana Vargas National Park (11,916 ha)
- La Humeadora National Park (6,746 ha)
- Los Haitises National Park (4,783 ha)
- Loma los 7 Picos National Park (2,001 ha)
- Bajo Yuna Mangrove National Park (3,915 ha)

**Figure 4 / Protected Areas of the Yuna Watershed**



Among the scientific reserves, the following stand out: Ébano Verde (1,638 ha), Las Neblinas (3,420 ha) and Loma Quita Espuela (953 ha). It is striking that the two subsystems of the watershed originate in protected areas and that, as a system, the watershed flows into another protected area, the Bajo *Yuna* Mangrove National Park in *Samaná* Bay. In this protected area, the largest population of Drago (*Pterocarpus officinalis*) is recorded, which is currently one of the tree species whose populations are in a vulnerable state, according to the red lists of IUCN and the Dominican Republic. On the other hand, it is important to note that the wetland is closely linked to the *Samaná* Bay, the most

important in the Dominican Republic, which is also an area of international importance for the mating and reproduction of the Humpback Whale (*Megaptera novaeangliae*) (Ramsar, 2005).

### **The *Yuna* River Watershed is of great importance for the Dominican Republic due to the wealth of its natural resources.**

It plays a crucial role in both conserving the environment and providing essential ecosystem services.



Photo: Adobe Stock



## Socioeconomic Characteristics of the *Yuna* Watershed

The resident population in the *Yuna* River Watershed exceeds two million people, which is more than 20% of the national population, with an average density of 210 inhabitants/km<sup>2</sup>. Its distribution is heterogeneous both between the provinces that cover the territory and between rural and urban environments. Most of the population is concentrated in the Duarte province, where 30% of the total resides, followed by *La Vega*, *Españat* and *Monseñor Nouel*. Furthermore, consistent with the rest of the national territory, the population is concentrated in urban centers, especially *La Vega*, *San Francisco de Macorís*, *Bonao* and *Moca*, although unlike other contexts in the country, in the *Yuna* River Watershed, rural areas, due to the high productivity of their lands, retain a significant population: The highest percentage of urban population amounts to 68%, in the province of Monseñor Nouel. (ITAC, 2021).<sup>21</sup>

The *Yuna* River Watershed is a fundamental economic engine for the country. It constitutes a natural space of critical importance not only for the general well-being of the communities that

are located in it, but for the rest of Dominican society due to the economic activities that are developed there, such as agricultural production with items of high value for the country's food security such as rice production, but also due to the concentration of high-intensity extractive activities such as the mining of gold, silver and

**The *Yuna* Watershed and its Activities Contribute Between 3.5% and 4% of the National GDP.<sup>23</sup>**

**The watershed contributes significantly to the national economy, through different productive activities, the main ones include agriculture, livestock, mining, hydroelectric generation and tourism.**

<sup>21</sup> SIUBEN (2021a) Municipios: características de la vivienda. Sistema Único de Beneficiarios, Santo Domingo. <https://siuben-open-data-siuben.hub.arcgis.com/search?tags=vivienda>

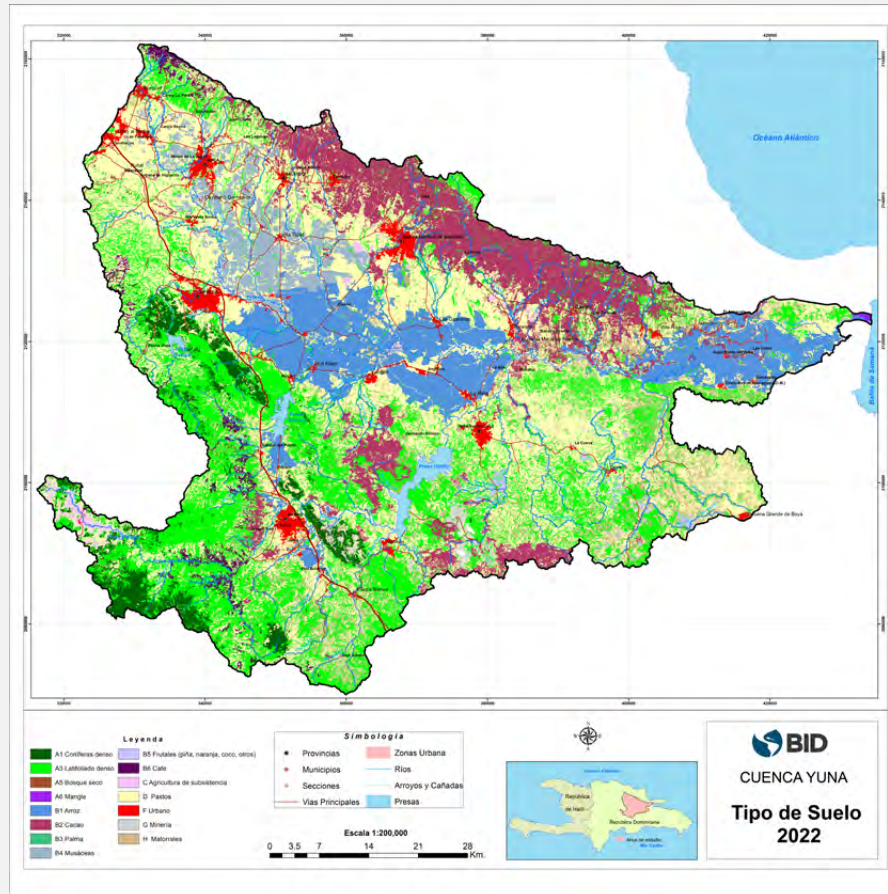
SIUBEN (2021b) Municipios: salud y discapacidad. Sistema Único de Beneficiarios, Santo Domingo. <https://siuben-open-data-siuben.hub.arcgis.com/datasets/SIUBEN::municipios-salud-y-discapacidad/explore>

SIUBEN (2021c) Municipios: Índice de Calidad de Vida ESH3 2018. Sistema Único de Beneficiarios, Santo Domingo. <https://siuben-open-data-siuben.hub.arcgis.com/datasets/SIUBEN::municipio-indice-de-calidad-de-vida-esh3-2018/explore>

<sup>22</sup> Gómez-Valenzuela, V., et al., Mining conflict in the Dominican Republic: The case of Loma Miranda. Resources Policy, 2020. 66: p. 101614.

<sup>23</sup> Gómez-Valenzuela

**Figure 5 / Land use in the Yuna Watershed in 2022**



Source: Víctor Gómez Valenzuela, 2023

The most important economic activity in the watershed is agricultural production due to its implications for the country's food security, mainly in items such as rice, livestock (bovine and mainly pig farming), cocoa, tobacco, among other items (middle watershed), which can represent close to two-thirds of all national agricultural activity which, in 2022, represented 5.7% of GDP.<sup>24</sup>

For example, approximately 60% of rice crops are irrigated with the water of the Yuna River. Representing 49% of the watershed's surface, agriculture stands out as the main economic activity, rice cultivation predominates with an area of 52 thousand hectares, which constitutes almost a fifth of all crops in the watershed. However, the use of fertilizers has caused pollution in rivers and canals, especially in the lower part of the watershed.

<sup>24</sup> BCRD. PANORAMA ECONÓMICO DE LA REGIÓN NORTE EN TIEMPOS DE PANDEMIA. 2023 [cited 2023 25-06-2023]; Disponible en: <https://www.bancentral.gov.do/a/d/5151-panorama-economico-de-la-region-norteen-tiempos-de-pandemia>.

On the other hand, and with respect to cocoa production, an important fact is that the Dominican Republic is the eighth largest exporter of cocoa beans in the world with an estimated value of its exports of over US\$206 million in 2021, taking as main export destinations the Netherlands, Belgium and Luxembourg.<sup>25</sup> The Yuna Watershed accounts for more than 96% of these exports.

Also, about 10 or 12 thousand families depend on fishing in the coastal areas and estuaries of this watershed (IDOM, 2023).

Despite the difficulty of disaggregating economic activity data at the territorial level in the Dominican Republic, in the particular case of the Yuna Watershed, the mining activity that takes place in its middle zone is the most important in the country (*Monseñor Nouel* and *María Trinidad Sánchez* provinces), contributing 1.4% of the Dominican GDP in 2022.<sup>26</sup> In fact, one of the four largest open pit gold mining operations in the world is being developed in the Yuna Watershed in the Pueblo Viejo deposit, which is operated by the Canadian company

Barrick Gold.<sup>27 28</sup> In 2021, gold exports from the Dominican Republic amounted to US\$1.78 MM, being the country's main export product and placing the Dominican Republic among the group of the 50 most important countries in mining exports.<sup>29</sup>

Towards the lower watershed, tourist activity occurs mainly in the province of *Samaná*, although the province of *María Trinidad Sánchez* is beginning to have a significant boom. According to data from the Central Bank, the province of *Samaná* has around 3,278 tourist rooms, which represents 4% of the little more than 77 thousand rooms available nationwide.<sup>30</sup>

The Yuna Watershed is one of the most intervened in the Dominican territory, given that in addition to the activities carried out in its watershed, there are five reservoirs among which it is worth highlighting the Hatillo, Rincón and Blanco dams with storage capacities of 441, 75.5 y 0.73 million cubic meters of water, respectively<sup>31</sup>. The combined potential of its reservoirs for the generation of hydroelectricity amounts to 262 gigawatts/hour/year.<sup>32</sup>

<sup>25</sup> OEC. Granos de Cacao en Republica Dominicana. 2023 [cited 2023 30-08-2023]; Disponible en: [https://oec.world/es/profile/bilateral-product/cocoabeans/reporter/dom#:~:text=2021%20\)%20%24206M-,En%202021%2C%20República%20Dominicana%20exportó%20%24206M%20en%20Granos%20de,Suiza%20\(%2412%2C7M\)](https://oec.world/es/profile/bilateral-product/cocoabeans/reporter/dom#:~:text=2021%20)%20%24206M-,En%202021%2C%20República%20Dominicana%20exportó%20%24206M%20en%20Granos%20de,Suiza%20(%2412%2C7M))

<sup>26</sup> BCRD. Estadísticas Económicas. Sector Real. 2023 [cited 2023 25-06-2023]; Disponible en: <https://www.bancentral.gov.do/a/d/2533-sector-real>

<sup>27</sup> Gómez-Valenzuela, V., et al., Mining conflict in the Dominican Republic: The case of Loma Miranda. Resources Policy, 2020. 66: p. 101614.

<sup>28</sup> MDO. Pueblo Viejo Mine. 2023 [cited 2023 29-08-2023]; Disponible: <https://miningdataonline.com/property/237/Pueblo-Viejo-Mine.aspx#Overview>.

<sup>29</sup> OEC. Oro en Republica Dominicana. 2023 [cited 2023 30-08-2023]; Disponible en: [https://oec.world/es/profile/bilateralproduct/gold/reporter/dom#:~:text=En%202021%2C%20República%20Dominicana%20exportó%20%241%2C78MM%20en%20Oro.,Taipei%20\(%246%2C8k\)](https://oec.world/es/profile/bilateralproduct/gold/reporter/dom#:~:text=En%202021%2C%20República%20Dominicana%20exportó%20%241%2C78MM%20en%20Oro.,Taipei%20(%246%2C8k))

<sup>30</sup> BCRD, Importancia y Evolución del Turismo en la Republica Dominicana 2012- 2017. 2018, Banco Central de la República Dominicana (BCRD): Santo Domingo, D. N. . p. 101.

<sup>31</sup> Bautista de los Santos, Q., Melina, *Determinación de los Caudales Ambientales de la Cuenca del río Yuna, República Dominicana*. Tecnología y Ciencia del Agua, 2014. 5(6): p. 33-40.

<sup>32</sup> Marte, D., Ríos dominicanos: redes de vida. 2022, Santo Domingo, D. N.: Banco Popular Dominicano.



# Gaps in Access to Resources, Services and Markets faced by Women, Men and Diverse Populations in the *Yuna* River Watershed

## Political Participation

**As of February 2024,<sup>33</sup> the political participation of the female population in the Dominican Republic is low given the existing barriers to the participation of women in politics and the prevalence of imaginaries about their role in positions of power.**

At the local government level, only 2 of the 29 municipalities are headed by women (Monte Plata and Salcedo). Likewise, in the councilships, only 26.9% of these positions are occupied by women, that is, for every 5 men, a woman is a councilor in the municipalities of the Watershed. The relationship is similar for the legislative sphere; of 49 representatives in the lower chamber, which corresponds to the provinces analyzed, only 9 are women (18.4%) and in the senatories their participation is non-existent.<sup>34</sup>

## Participation in Productive Sectors

Regarding the economic relevance of the territories, of the 5 regions that make up the Watershed, Cibao Norte, Valdesia and Cibao Sur stand out. The average participation of these three regions in national production, between the period 2015-2022, is 15.3%, 8.8% and 8.1%, respectively. In addition, the regions of Cibao Sur and Valdesia will register the highest levels of income per population by 2022.<sup>35</sup>

The main productive activities, in terms of added value, in each of the regions are the agricultural sector in Cibao Sur, Cibao Nordeste and Higuamo, and the manufacturing sector in Cibao Norte and Valdesia. For those regions in which 80% of the watershed extends (Cibao Sur and Nordeste), trade represents the second most important productive activity. To date, in the official statistics on the labor market there are no data at the territorial level or by sex,<sup>36</sup> particularly

<sup>33</sup> At the time of writing this document, the country is holding municipal, congressional and presidential elections.

<sup>34</sup> Data as of February 2024.

<sup>35</sup> For the year 2022, the GDP per capita at current RD\$ prices was 674,459, 626,144 and 604,176, for the Cibao Sur, Ozama and Valdesia regions. See Ministry of Economy, Planning and Development (MEPyD). Informe de Resultados PIB regional de República Dominicana 2015-2022, septiembre 2023.

<sup>36</sup> The Continuous National Labor Force Survey (ENCFT) does not allow for the analysis of unemployment or employment rates by region, activity and sex. In addition, the level of territorial disaggregation only reaches macro-regions.

in the activities that the watershed contributes significantly<sup>37</sup> such as agricultural exploitation<sup>38</sup> –rice–, tourism, especially ecotourism, the fishing sector and aquaculture.<sup>39</sup>

In general, both at the national level and in the territorial area that covers the Watershed, there is a significant employment gap between the male and female population. According to data from the 2022 Household Survey, which has representation at the level of planning regions, the difference in the employment rate between the male and female population is 20.3 percentage points. That is, for every 10 men of working age, seven are employed, while the ratio for women is 5 out of 10.<sup>40</sup>

The gap in the occupancy rate becomes significantly larger for the Cibao Sur and Nordeste regions. The differences between the male and female employment rates, respectively in each region, are 31.7 and 25.7 percentage points. Cibao Sur, a region with the highest income per population and in which the Monseñor Nouel, Sánchez Ramírez and La Vega provinces are located –which represent 60% of the Watershed route– the employment rate of the female population is the lowest among the other regions analyzed.

In the branches/fields of labor activity, commerce and industry –includes manufacturing and mining,– which represent an important economic boost in regions of the Watershed,

40.3% and 31.7%,<sup>41</sup> respectively, of the total people employed in these activities are women. In the case of traditional sectors the gap is accentuated. Specifically in the field of agricultural and livestock activity, female labor participation at the national level is significantly low, barely 7.5%.<sup>42</sup>

The results of the 2015 National Agricultural Precensus allow us to characterize the gaps in this sector in greater detail. Of the total agricultural producer population, the percentage of the male population is 83.7% and 16.3% is female. The provinces of Monte Plata, Duarte and Hermanas Mirabal stand out for the relatively greater presence of women in these activities, a little more than 20%. On the other hand, San José de Ocoa and La Vega have the lowest percentage of female population among the total producers, less than 7%.

At a total level, the planting of agricultural products constitutes the main activity to which the productive unit is usually focused on (62.6%), followed by animal husbandry (20%), and both activities (16.3%). Regarding this aspect, there are no significant differences in the productive units of the female population; agricultural planting also constitutes the main activity in more than 63.2% of the units in each of the regions that run through the Watershed. The exception is the Higuamo region, in which only 45.3% of the productive units of the female population report this use, 34.9% of these units are intended for the

<sup>37</sup> The list of main activities, according to Izzo M, are agriculture, mining, livestock, hydroelectric generation and tourism. See Guakía Ambiente. Systematization...p. 27

<sup>38</sup> INDHRI project DR-L1161 proposes the use of green technologies to increase the productivity of rice and/or other agricultural production systems.

<sup>39</sup> The investment plan for the CIF-NPC Program (DR-T1276) seeks to influence, among other aspects, the development of ecotourism, the area's blue economy, with emphasis on aquaculture and mariculture.

<sup>40</sup> ENHOGAR 2022 Informe general. Cuadro 41. REPÚBLICA DOMINICANA: Tasa de ocupación de la población de 10 años y más, por sexo, según características geográficas, demográficas y sociodemográficas.

<sup>41</sup> Central Bank of the Dominican Republic, ENCFT 2023, third quarter.

<sup>42</sup> Central Bank of the Dominican Republic, ENCFT 2023, third quarter.

shared use of animal husbandry and agricultural planting. There is also a higher percentage in the male population that the same producer owns more than one agricultural plot, 19.1% of producers, while in the female population it is 13.8%.

The data deficit limits the analysis of the ownership situation, access to credit, among other aspects of interest to quantify other gaps in agricultural activities. However, it is possible to offer a similar trend from the livestock sector. A recent study carried out by FAO on livestock activity in the main provinces of the Watershed highlights that more than half of the women

who own land for the livestock sector do not have a property title,<sup>43</sup> access to water resources is more limited for them,<sup>44</sup> their entire source of financing came from the State and, despite the fact that 82% of them belong to an association, only 22% have held any management position in them.<sup>45</sup>

High masculinization in the agricultural sector is a characteristic that is also present in the productive activities of marine fishing, 90.6% of the population dedicated to this activity, according to data from the 2019 Fisheries Census, is male and 9.4% female.<sup>46</sup> Participation by age and sex, between the range of 15-44 years, 71% of



Photo: Adobe Stock

<sup>43</sup> See infographic Participation of women in the livestock sector in the Yuna River Watershed. Baseline update study of the GANACLIMA-RD project, 2021. Access at: <https://ganaderiayclimard.do/wp-content/uploads/2023/02/Infografi%CC%81a-Mujer-sector-ganadero.pdf>

<sup>44</sup> See Ibid.

<sup>45</sup> See: Potencial de la Ganadería Climáticamente Inteligente para reducir la vulnerabilidad de las mujeres ante el cambio climático, febrero 2021. Visit: <https://ganaderiayclimard.do/wp-content/uploads/2023/02/Infografi%CC%81a-Mujer-sector-ganadero.pdf>

<sup>46</sup> Censo Pesquero 2019, Cuadro 4 pag. 39.

the female fishing population is concentrated, while for the male population only 57% of fishermen are in these ages. In other words, the female fishing population is predominantly young adults. Although a significant percentage of fishermen are in this age range, a larger percentage of people between 45 and 65 years old is observed, 35% of them.

The study on disability in fishermen in the DR (APAP/Reef Check, 2021)<sup>47</sup> highlights that fishermen who carry out their artisanal diving fishing art lack the tools and knowledge necessary to carry out these tasks safely. This is why they are highly affected by decompression sickness, causing a high rate of disability. This is why training in good diving practices, safety measures and certifications is required.

The Fisheries Census also researched the need to access credit to carry out fishing activities. The total female population in that sector, 97.5%, reported they did not need it, a higher percentage than the male population (92.8%). The gap is similar in both the Espaillat province and Samaná.

On the other hand, in the branch of activity associated with the tourism sector such as “Hotels, bars and restaurants,” the female labor

participation of the total employees is 59%,<sup>48</sup> a high percentage if compared to the other sector analyzed. However, the data includes economic leisure units not limited to the tourism sector. Other data sources, such as the National Economic Activity Survey that collects information from formal sector companies for the “lodging and food” category, show an opposite result. There is greater labor participation of the male sex, 56.3%.<sup>49</sup> Although the units of analysis in both databases are different, the results allow us to approximate and warn about a certain heterogeneity in participation between both sexes, both at the level of the formal sector and the type of economic activity.<sup>50</sup>

In summary, in the economic sphere there is a gap in the participation of the female population in productive sectors, especially in primary activities, such as agriculture and fishing. In general, the absence of equal access to the labor market characterizes the regions under analysis, a dynamic similar to the country in general. It should be noted that the above operates in a context of gaps at the national level with respect to the participation of men in reproductive activities. The average weekly hours they dedicate to unpaid work is 9.6 hours, while women dedicate 31.2 hours.<sup>51</sup>

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<sup>47</sup> Torres, Rubén. Estudio sobre discapacidad en pescadores en la República Dominicana, APAP/Reef Check 2021. Acceso en: <https://bvearmb.do/handle/123456789/1224>

<sup>48</sup> Central Bank data ENCFT third quarter 2023.

<sup>49</sup> Oficina Nacional de Estadística. Encuesta Nacional de Actividad Económica 2020.

<sup>50</sup> The report The Social Impact of Global Tourism de World Travel & Tourism Concil, October 2023, highlights a female participation of 48.0 in total direct jobs in the travel and tourism sector in the Americas.

<sup>51</sup> Oficina Nacional de Estadística, Cuadro 110.REPÚBLICA DOMINICANA: Promedio de horas semanales que dedica la población de 10 años y más según tipo de trabajo por sexo; 2016.



# Current State of the Watershed: Description of Identified Problems

## Productivity and Poverty

Poverty levels in the communities that live in the watershed are higher than the national average (30.5%), estimating that half of the population lives in conditions of moderate poverty and also observing significant percentages (greater than 5%) of people that live in extreme poverty. The province with the highest percentage of population living in poverty is *Sánchez Ramírez*, where the rate exceeds 50%, while it drops to

42.6% in the province of Duarte, 37.7% in the province of *Monseñor Nouel* and 31.4% in the province La Vega.

If reference is made to the statistics of the Single Beneficiary System (SIUBEN, for its acronym in Spanish), exclusively for the municipalities whose territory falls mostly in the watershed, it is observed that this includes (SIUBEN, 2021a; 2021b; 2021c):



About  
**71 thousand**  
households that  
have walls made of  
**material other than  
block or concrete**



More than  
**205 thousand**  
households with  
**zinc roofs**



More than  
**3 thousand**  
households with  
**dirt floors**



More than  
**10 thousand**  
households in  
**overcrowded  
conditions**



More than  
**67 thousand**  
people with  
**disabilities**



More than  
**43%**  
of households with  
**Quality of Life Index**  
(QLI) "1" (extreme  
poverty) or "2"  
(moderate poverty).

## Degradation of Ecosystem Services

The *Yuna* Watershed is a complex system that shows intensive use of its ecosystems and services. The intensive use of ecosystems and their services is appreciated at the landscape scale, showing a complex mosaic of uses in the agricultural and geological sector. This indicates significant pressure on the water resources generated by the watershed, indicating the need for a comprehensive intervention that minimizes risks in ecosystem management.<sup>52</sup>

Among the factors of greatest concern are the following:

**Soil erosion**, caused by different activities, including agriculture and extractives.

In the upper part of the watershed, before the confluence between the *Yuna* River and the Blanco River, the phenomenon is exacerbated by extensive oregano crops and extensive livestock farming, both activities associated with the elimination of tree cover on very high slopes. Regarding extractive activity, mining concessions, especially metal ones carried out

predominantly in the open pit, the extraction of aggregates is added, implemented on the banks of water sources or directly in their bed, frequently without the corresponding legal authorizations.

All of this has increased soil erosion, which, in addition to reducing land productivity, transports large amounts of sediment to the existing reservoirs in the watershed.

In this sense, it is important that all ministries, with special focus on Agriculture and Energy and Mines, can internalize the need to adopt more sustainable use policies, adopting a medium and long-term perspective that allows them to understand the costs of inaction and, at the same time, clearly identify the benefits of using natural resources at the watershed level, based on comprehensive territorial planning.

**Sedimentation of reservoirs** produced by the dragging of sediment exacerbated by activities that reduce the tree cover of the watershed, especially in the middle and upper part, and alter the hydrological regime of water sources.



Photo: Adobe Stock

<sup>52</sup> Víctor Gómez Valenzuela

**Water and soil pollution**, associated with the prevalent economic activities in the watershed, especially agriculture and mining.

Especially in the Bajo *Yuna*, rice production is the dominant land use, producing significant contamination of surface and groundwater linked to the use of fertilizers and pesticides.

At the same time, the areas in which open pit mining activities are established, exposed to typically very humid climatic conditions, increase the risk of its occurrence.

Regarding the analysis of land use dynamics, around 62% of land use in the watershed is anthropic (about 326 thousand ha), which includes activities such as agriculture, livestock (pastures), urbanized lands, artificial bodies of water, mining, among other uses. Uses with a sense of conservation represent around 26.6% of the surface of the watershed (about 140

thousand ha), which includes coniferous forests, broadleaf forests, dry forest, mangrove in coastal areas, among others. Land use related to the agroecosystems identified in the watershed, mainly cocoa and coffee, represent about 63,614 hectares. When taken as a whole, anthropic uses account for little more than two-thirds of the watershed's surface, which is an indicator of a watershed with intensive economic activities. Land uses most affected in the watershed are those related to conservation. Between 2012 and 2022, the coniferous forest in mountain areas was reduced by 38%, the broadleaf forest was reduced by 5.4%, while the already meager dry forest lost 66% of its cover and, in coastal areas, the mangrove was reduced by 92%. The most striking change between 2012 and 2022 is the increase in shrubs whose coverage expanded by close to 600%. This may be an indicator of a land use reconversion process that signals a strong trend towards deforestation.

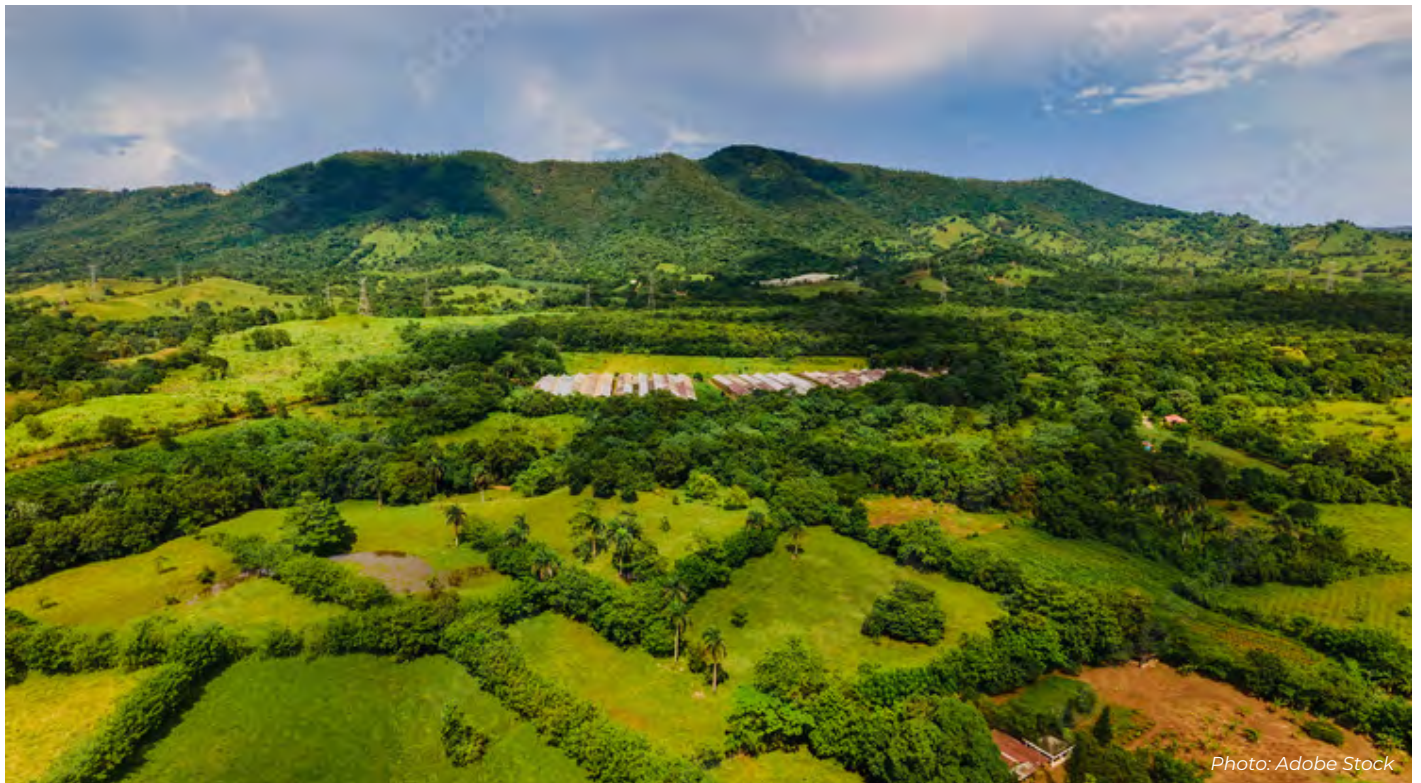
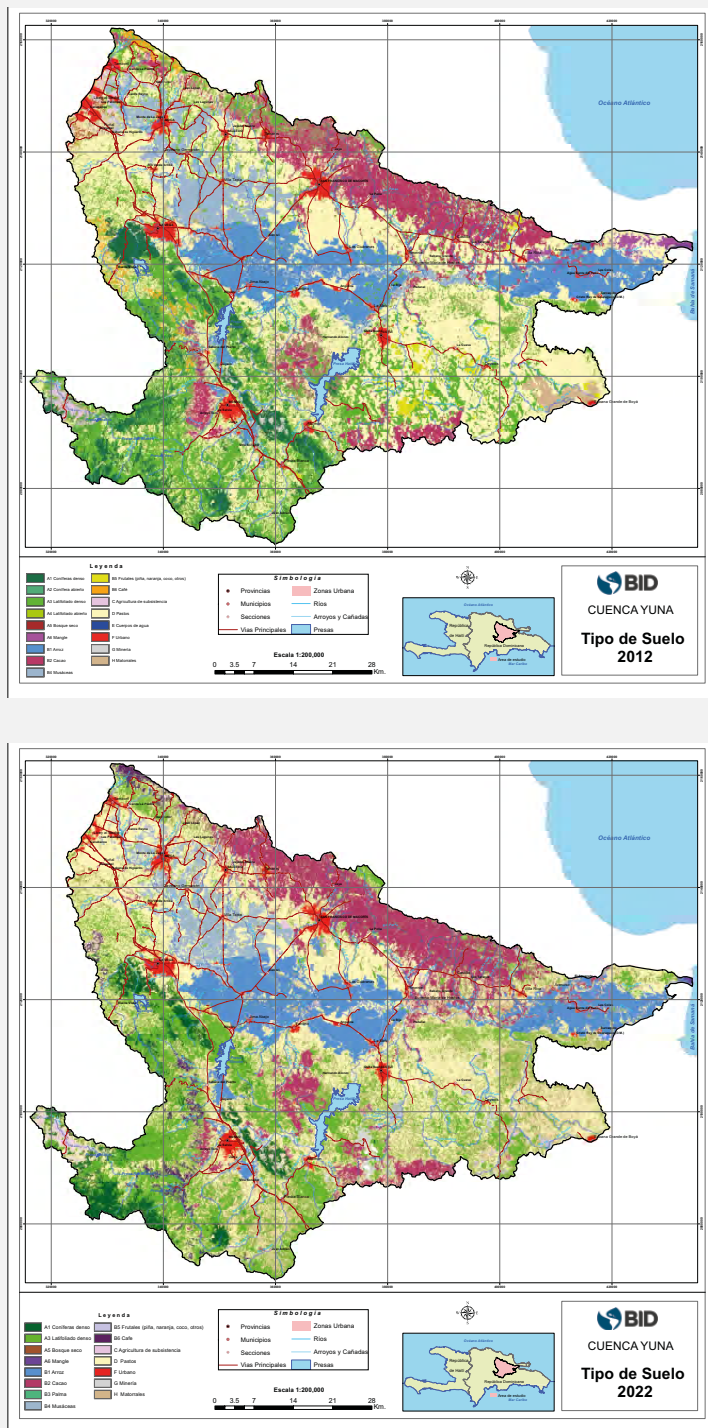


Photo: Adobe Stock

**Figure 6 / Inter-temporal land use in the Yuna Watershed: 2012-2022**



Source: Víctor Gómez Valenzuela, 2023

**Table 3 / Variations in land use in the Yuna Watershed: 2012-2022**

Land use	2012		2022		Change (ha)	% of variation	Direction
	Hectares	%	Hectares	%			
Coniferous forest	28,155.83	5.35	17,430.45	3.31	-10,725.38	-38.09%	↓
Broadleaf forest	129,184.27	24.54	122,086.52	23.19	-7,097.75	-5.49%	↓
Dry forest	823.29	0.16	277.93	0.05	-545.36	-66.24%	↓
Mangrove	3,324.36	0.63	251.29	0.05	-3,073.07	-92.44%	↓
Rice	52,302.96	9.93	52,055.28	9.89	-247.58	-0.47%	↓
Cocoa	56,049.21	10.65	58,388.80	11.09	2,339.59	4.17%	↑
African palm	0.00	0.00	29.97	0.01	29.97	100.00%	↑
Musaceae	26,220.73	4.98	19,307.59	3.67	-6,913.14	-26.37%	↓
Fruit trees (pineapple, orange, coconut, others)	4,507.89	0.86	2,229.23	0.42	-2,278.66	-50.55%	↓
Coffee	3,733.49	0.71	5,225.66	0.99	1,492.17	39.97%	↑
Subsistence agriculture	4,079.98	0.71	2,649.46	0.50	-1,430.52	-35.06%	↓
Pastures	192,345.16	36.53	168,046.69	31.92	-24,298.47	-12.63%	↓
Bodies of water	3,364.90	0.64	5,114.87	0.97	1,749.97	52.01%	↑
Urban	13,264.55	2.52	11,900.04	2.26	-1,364.51	-10.29%	↓
Mining	561.92	0.11	1,825.29	0.35	1,263.37	224.83%	↑
Schrubbs	8,608.90	1.64	59,708.27	11.34	51,099.37	593.56%	↑
<b>Total</b>	<b>526,527.34</b>	<b>100.00</b>	<b>526,527.34</b>	<b>100.00</b>			

Source: Víctor Gómez Valenzuela, 2023

Furthermore, practices in the upper and middle watershed of the Yuna generate a high amount of sediment, since many canals are made of earth. The conflict over land use in the lower

part also causes problems of deforestation of Drago trees and mangroves, mainly due to the installation of agricultural plots.



## Mining and pollution

The Yuna River Watershed is home to the largest areas in the country used for metal extraction, such as the ferronickel established by Falconbridge Dominicana (FALCONDO, for its acronym in Spanish) and the gold and silver mines operated by Barrick Pueblo Viejo. The latter, due to its useful life and the size of the deposit, is one of the most important mines in the country and the world. In the middle watershed, where there is open-pit mining, there is significant contamination of water bodies. Several studies that have analyzed water quality in watersheds affected by open-pit mines, especially in the municipality of Cotuí, show critical to very critical contamination conditions (Arias Moronta, 2021,<sup>53</sup> Grandia et al., 2009<sup>54</sup>), both of the water and of the sediments accumulated at the bottom of the reservoirs. The local population residing in the areas adjacent to the mining sites highlights the degradation of environmental conditions, especially the water component.

regenerative capacity (Delanoy et al., 2019),<sup>55</sup> and the specific impacts in the study area have not been quantified. In addition, it should be taken into account that the economic activities developed along the course of the hydrographic system have a direct impact on the coastal-marine zone, which is undoubtedly a key issue from the point of view of the analysis and valuation of the ecosystem services provided by the watershed, as well as from the point of view of the development of an R2R approach for the integrated management of its ecosystems.



## Coastal Ecosystem

In addition, the high sediment accumulation and heavy metal concentration in the area have a significant impact on coastal and marine ecosystems, particularly reefs and mangroves. Unfortunately, the rate of disappearance of these ecosystems often exceeds their

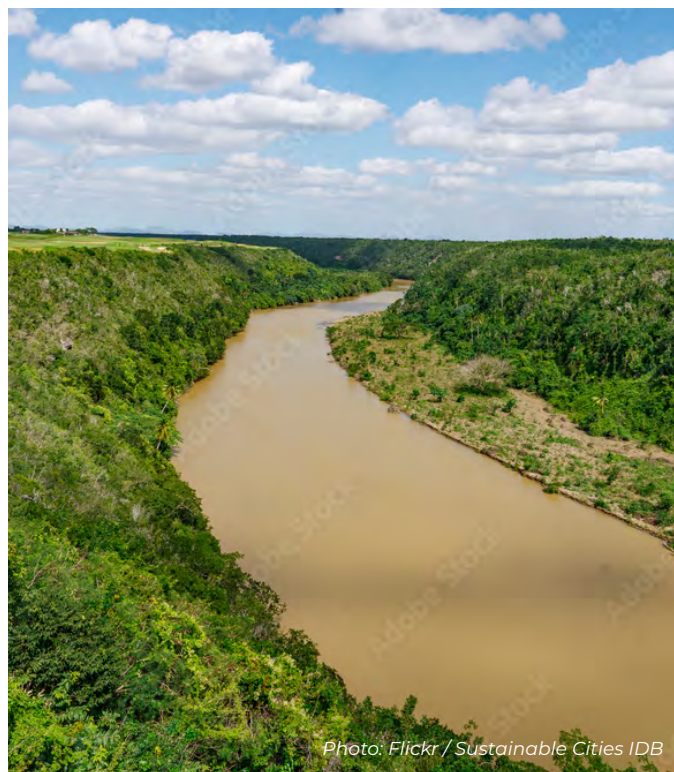


Photo: Flickr / Sustainable Cities IDB

<sup>53</sup> Arias Moronta JM (2021) Determinación del comportamiento espacial de calidad de agua vinculada a actividades mineras en la subcuenca del río Maguaca, Municipio de Cotuí, República Dominicana. Tesis MSc en "Manejo y Gestión Integral de Cuencas Hidrográficas". Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Turrialba.

<sup>54</sup> Grandia F, Salas J, Arcos D, Archambault A, Cottard F (2009) Impacto del drenaje ácido de explotaciones mineras en la cuenca del Río Margajita y Embalse de Hatillo (República Dominicana). Boletín Geológico y Minero, 120(4), 595-606. ISSN 0366-0176

<sup>55</sup> Delanoy RA, Díaz Asencio M, Méndez Tejeda R (2019) Effect of extreme weather events on the sedimentation of the Bay of Samaná, Dominican Republic (1900–2016). Journal of Geography and Geology, 11(3), 56-73. DOI:10.5539/jgg.v11n3p56

## Climate Change

Vulnerability to the effects of climate change in the *Yuna* Watershed is high.

Referring to one of the most recent studies, which classifies the 155 municipalities of the Dominican Republic according to their vulnerability and climate risk (Lizardo Espinal & de la Rosa, 2022),<sup>56</sup> it is observed that five of the municipalities whose territory is part of the *Yuna* River Watershed (Santiago, La Vega, Moca, San Francisco de Macorís and Villa Riva) are in the first 20 positions in terms of climate risk. Among the factors that have the greatest impact in determining this result is the exposure to flooding of significant assets (human and productive).

As a result of the studies consulted and mentioned in this chapter, phenomena related to climate change and its effects are expected to increase in the future. The *Yuna* River Watershed is exposed to different hydrometeorological events with the potential to generate damage and/or losses to the existing systems in the watershed. Among the main threats are drought and abundant and/or intense rains, whether or not associated with tropical cyclones.

## Temperature

Regarding temperatures, studies conducted so far reveal a generalized increase. In particular, modeling of historical data (Pérez & Jury, 2012)<sup>57</sup> shows an average increase between 1901 and

2009 of +0.015°C or higher, for a total increase in the period estimated at +1.6°C. In addition, an acceleration of warming over the years is observed (Figure 7).

Temperature is projected to increase throughout the century for all scenarios. Until 2040, increases would remain between 0.6 and 0.8°C for all scenarios, while in the following periods, higher increases would be observed for the less virtuous scenarios, especially in the eastern zone (lower watershed and mouth of the *Yuna* River). Such increases could reach 2.8°C in the worst-case scenario (RCP8.5), with the largest increases in the northeastern portion of the upper watershed and part of the middle watershed of the *Yuna* River.<sup>58</sup>



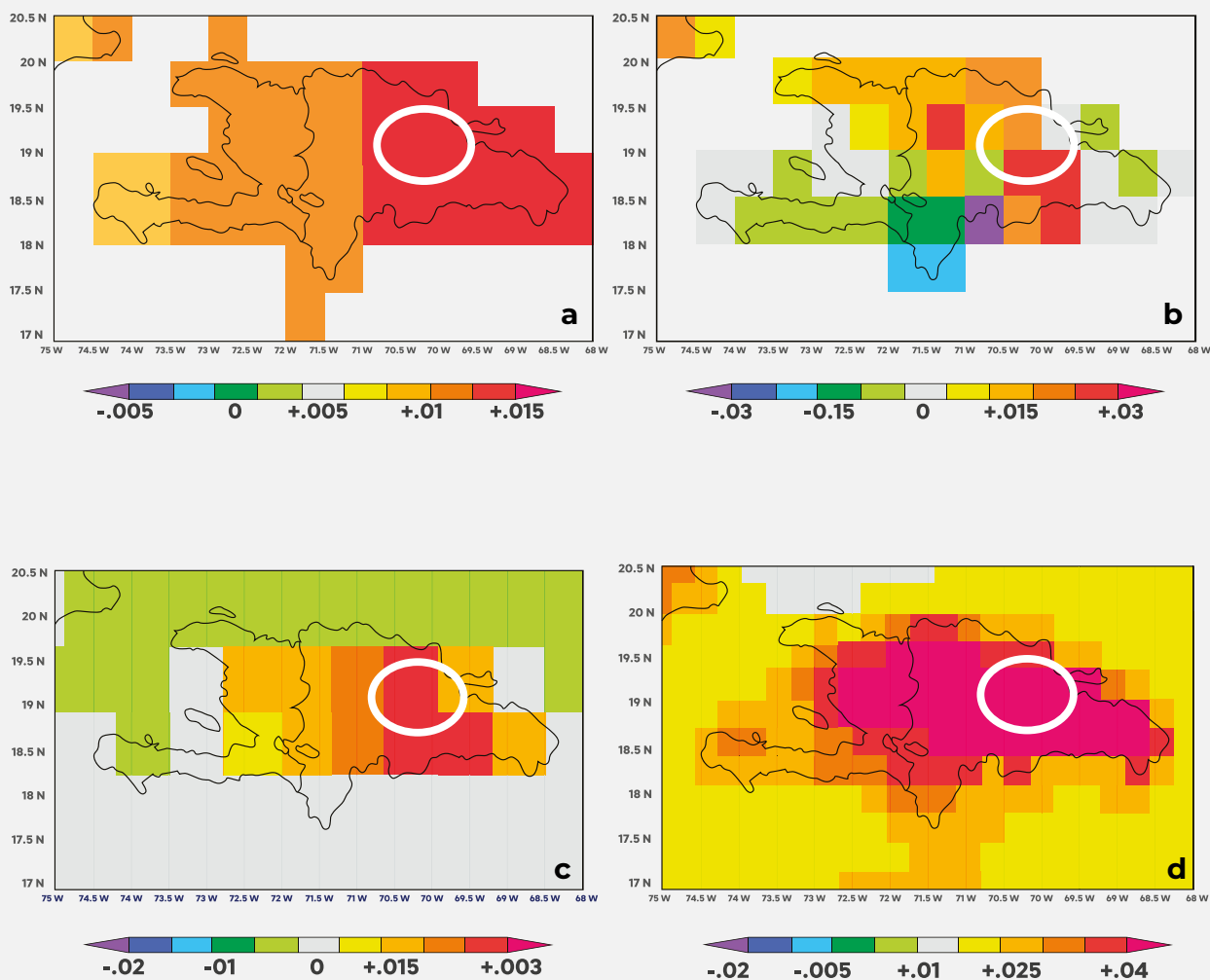
Photo: Flickr / Sustainable Cities IDB

<sup>56</sup> Lizardo Espinal M, de la Rosa DE (2022) Índices de vulnerabilidad y riesgo a la variabilidad y el cambio climático a nivel de los municipios de la República Dominicana. Programa de Asesores Económicos del NDC Partnership, Programa EUROCLIMA+ (PN. 17.2201.6-004.00). Ministerio de Economía, Planificación y Desarrollo (MEPyD), Santo Domingo. EN REVISIÓN PARA LA PUBLICACIÓN

<sup>57</sup> Pérez CR, Jury MR (2012) Spatial and temporal analysis of climate change in Hispaniola. *Theoretical and Applied Climatology*, 113, 213-224. <https://doi.org/10.1007/s00704-012-0781-0>

<sup>58</sup> CATHALAC & ENERGEIA (2022) Escenarios climáticos de precipitación, temperatura y ascenso del nivel del mar para los períodos 2020-2040; 2041- 2060; 2061-2080 Y 2081-2100. Programa de las Naciones Unidas para el Medio Ambiente (PNUMA), Programa de las Naciones Unidas para el Desarrollo (PNUD), Santo Domingo.

**Figure 7 /** Average temperature trends (in °C/year) for a) CRU 1901–2009; b) GHCN/CAMS 1948–2009; c) ECMWF; and, d) CFS 1979–2009. The white circle represents the area of the *Yuna* River Watershed



Source: Pérez & Jury, 2012 modified

## Rain and Flood Patterns

Among the challenges related to climate change, recurrent flooding in the lower *Yuna* region during periods of heavy rains, causing overflows and affecting populations such as Cotuí, Villa Riva and Arenoso, stands out. Analyzing the results obtained, it can be observed that floods constitute

a critical threat, recurrently affecting different areas of the watershed, causing enormous damage and losses, particularly affecting the productive sector, especially agriculture (ECLAC, 2004; Izzo et al., 2009; Izzo et al., 2012)<sup>59</sup> (Figure 8).

**Figure 8 /** Effects of Storm Noel in Bajo Yuna



Historic trends indicate variations in precipitation,<sup>60</sup> with increases and decreases in different geographic areas. Precipitation will present variations in the short and long term,

with increases in low emission scenarios and reductions in others, significantly affecting rainfall contributions.

<sup>59</sup> CEPAL (2004) República Dominicana: evaluación de los daños ocasionados por las inundaciones en las cuencas del Yaque del Norte y Yuna, 2003. Comisión Económica para América Latina y el Caribe, LC/MEX/L.607.

Izzo M, Aucelli PPC, Javier Y, Pérez C, Roskopf CM (2009) The tropical storm Noel and its effects on the territory of the Dominican Republic. *Natural Hazards*, 53, 139-158. <https://doi.org/10.1007/s11069-009-9417-9>

Izzo M, Rathe L, Arias Rodríguez D (2012) Puntos críticos para la vulnerabilidad a la variabilidad y cambio climático en la República Dominicana y su adaptación al mismo. Programa para la Protección Ambiental, USAID-IDDITNC, Santo Domingo.

<sup>60</sup> Izzo M, Aucelli PPC, Maratea A (2020) Historical trends of rain and air temperature in the Dominican Republic. *International Journal of Climatology*, 41(S1), 1-19. DOI: 10.1002/joc.6710

## Rising Sea Levels

In addition, risings in sea level are predicted at the mouth of the *Yuna* River, which will impact the vulnerability of the region. Regarding sea level, increases are projected in the short, medium and long term, with values that depend on the emissions scenario considered. In the Samaná Bay area corresponding to the mouth of the *Yuna* River, increases of between 0.2 and 0.5 centimeters are forecast compared to the reference period 1993-2009 in the short term (2021-2040), between 0.6 and 0.9 centimeters in the period 2041-2060, between 1.0 and 1.9 in the period 2061-2080, and up to 2.8 centimeters at the end of the century.

## Droughts

Climate changes in the *Yuna* River Watershed have important implications for natural resources. On the one hand, correlations have been identified between the precipitation series and the Oceanic El Niño Index (ONI), which makes it possible to predict episodes of drought and abundant rainfall.<sup>61</sup> This is crucial for planning and adaptation to extreme weather events. However, the lack of detailed data limits the ability to conclude on a specific trend of increasing droughts in different areas of the watershed. In addition, an increasing trend of dry periods has been observed in *Samaná* Bay over the last 10 years,<sup>62</sup> indicating a change in rainfall patterns that could negatively impact ecosystems and water availability in the region.

## Impact on Resources

Climate changes in the *Yuna* River Watershed have important implications for natural resources. On the one hand, correlations have been identified between the precipitation series and the Oceanic El Niño Index (ONI), which makes it possible to predict episodes of drought and abundant rainfall.<sup>63</sup> This is crucial for planning and adaptation to extreme weather events. However, the lack of detailed data limits the ability to conclude on a specific trend of increasing droughts in different areas of the watershed. In addition, an increasing trend of dry periods has been observed in *Samaná* Bay over the last 10 years,<sup>64</sup> indicating a change in rainfall patterns that could negatively impact ecosystems and water availability in the region.



Photo: Adobe Stock

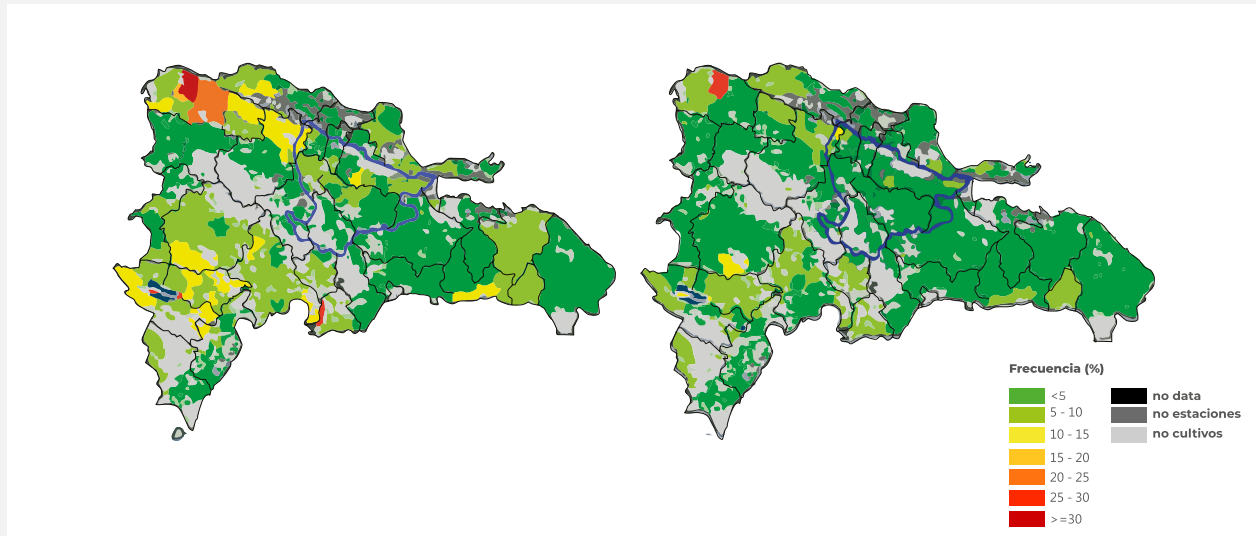
<sup>61</sup> Izzo M, Martínez Batlle JR (2023) Análisis de la temporada seca de finales de 2022 en la República Dominicana. WORK IN PROGRESS

<sup>62</sup> Cambio climático Samaná, s. f.

<sup>63</sup> Izzo M, Martínez Batlle JR (2023) Análisis de la temporada seca de finales de 2022 en la República Dominicana. WORK IN PROGRESS

<sup>64</sup> Cambio climático Samaná, s. f.

**Figure 9** / The map on the left shows areas where more than 30% of crops were impacted during the entire growing season 1 in the period 1984-2022. The map on the right shows only those areas where the percentage of damage exceeded 50% of the crop



Source: FAO, 2023 modified

Climate variations affect local communities, where flooding is a critical threat that recurrently affects different areas of the watershed, causing enormous damage and losses that particularly affect the productive sector, especially agriculture.<sup>65 66 67</sup>

At the social level, the greatest damage occur in the health and water and sanitation sectors (ECLAC, 2004). Estimates show that direct and indirect damages associated with the 2003

events exceeded US\$42 million (ECLAC, 2004),<sup>68</sup> with even greater economic losses caused by the passage of storm Noel (ECLAC, 2008; Sadio, 2008).<sup>69 70</sup>

Regarding the housing sector, these events are associated with temporary or permanent displacements of hundreds of family units and thousands of people in each event (ECLAC, 2004; ECLAC, 2008).

<sup>65</sup> CEPAL (2004) República Dominicana: evaluación de los daños ocasionados por las inundaciones en las cuencas del Yaque del Norte y Yuna, 2003. Comisión Económica para América Latina y el Caribe, LC/MEX/L.607

<sup>66</sup> Izzo M, Aucelli PPC, Javier Y, Pérez C, Roskopf CM (2009) The tropical storm Noel and its effects on the territory of the Dominican Republic. *Natural Hazards*, 53, 139-158. <https://doi.org/10.1007/s11069-009-9417-9>

<sup>67</sup> Izzo M, Rathe L, Arias Rodríguez D (2012) Puntos críticos para la vulnerabilidad a la variabilidad y cambio climático en la República Dominicana y su adaptación al mismo. Programa para la Protección Ambiental, USAID-IDDITNC, Santo Domingo.

<sup>68</sup> CEPAL (2004) República Dominicana: evaluación de los daños ocasionados por las inundaciones en las cuencas del Yaque del Norte y Yuna, 2003. Comisión Económica para América Latina y el Caribe, LC/MEX/L.607.

<sup>69</sup> CEPAL (2008) Evolución del impacto de la Tormenta Noel en República Dominicana. México: LC/MEX7L.853.

<sup>70</sup> Sadio S (2008) Assessment of environmental post disaster needs in Dominican Republic: Investigation of the impacts from Noel and Olga storms in 2007. Dominican Republic - UNDP Early Recovery Project, Santo Domingo.



## Analysis of Gaps and Barriers. Assesment Needs

### Several gaps are identified in the environmental management of the Yuna Watershed that are addressed in the objectives of the investment plan.

These include unsustainable management of water resources, inefficiency in agricultural irrigation systems by Irrigation Associations and Boards, lack of government support in the upper part of the watershed, scarcity of technical and financial resources to meet the growing demand of water due to population growth and economic expansion, lack of integration and coordination between actors involved in water management, limited capacities to monitor compliance with environmental standards, limited restoration and conservation actions of natural environments, and limited legal decision-making capacity in relation to municipal water resources. In addition, there is an overexploitation of environmental services and pollution problems related to economic activities and residents of the area. These gaps represent significant challenges for the environmental management of the Yuna Watershed and hinder the implementation of nature-based solutions.

To overcome the barriers and close the gaps identified in the management of the Yuna Watershed, it is essential to promote cohesion between government agencies, civil

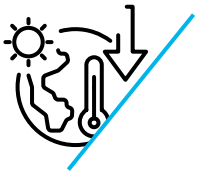
associations, cooperatives and civil society. This will allow the effective implementation of projects, the creation of awareness and the adoption of measures that benefit both the conservation of the watershed and the quality of life of its inhabitants. In addition, the problem of land tenure in the region must be addressed to facilitate short, medium and long-term planning in relation to the conservation and improvement of the conditions of the watershed.

### Social barriers have also been identified that are addressed through the activities proposed in the investment plan.

These include the low participation of women in decision-making spaces such as public decision-making bodies, executive bodies and community associations; low participation of women in fishing and agricultural activities; majority participation of the male population in the formal sector related to the lodging and food sector; low land tenure; limited access to private credit; domestic and caregiving responsibilities limit women's ability to participate in employment and training opportunities; and, low labor participation of people with disabilities, due to the skills required and the specific needs that this population requires.

In the Yuna Watershed, projects have been identified that aim to address these needs. These projects (in design or execution stages) are indicated in chapter IV: Investment Plan Co-financing Development Activities.

The needs that will be addressed through the NPC are described in greater detail in Chapter V: Description of the Program and Complementarity of CIF-NPC Funds and in Annex E: Project Presentation Sheets, of this Investment Plan.



## Description of the Relationship Between Problems

### The Cycle of Degradation of Ecosystem Services and Poverty in the Yuna Watershed

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As ecosystem services deteriorate, communities become trapped in a vicious cycle of environmental degradation and poverty. Reliance on unsustainable practices for survival perpetuates the degradation of ecosystems, which, in turn, exacerbates poverty by affecting the availability of natural resources and economic opportunities. This threatens the resilience and recovery capacity of local communities while undermining the health and functionality of ecosystems in the watershed.

The lack of economic opportunities and limited resources forces populations to depend on unsustainable practices, such as the illegal occupation of protected areas, forest clearing, unsustainable agriculture and the absence of good practices in productive activities such as livestock farming, fishing, and mining, and the overexploitation of natural resources. These actions degrade ecosystems, which in turn reduces the availability of key ecosystem services,

such as the provision of clean water, climate regulation and biodiversity.

Climate change increases and accelerates the negative effects of this cycle, due to increased temperatures, periods of drought, floods, and the increase in the intensity of natural phenomena that put the ecosystem services and the economic productivity of the Watershed at risk.

The *Yuna* Watershed faces significant challenges regarding the socioeconomic sustainability of its communities. It is essential to consider that nature-based solutions must be socially as well as environmentally sustainable. This involves assessing the economic and social impacts on local communities, including economic diversification, employment generation, food security and equity in the distribution of benefits. Climate change exacerbates the problems in the *Yuna* Watershed, increasing the frequency and intensity of droughts and floods. Flooding during

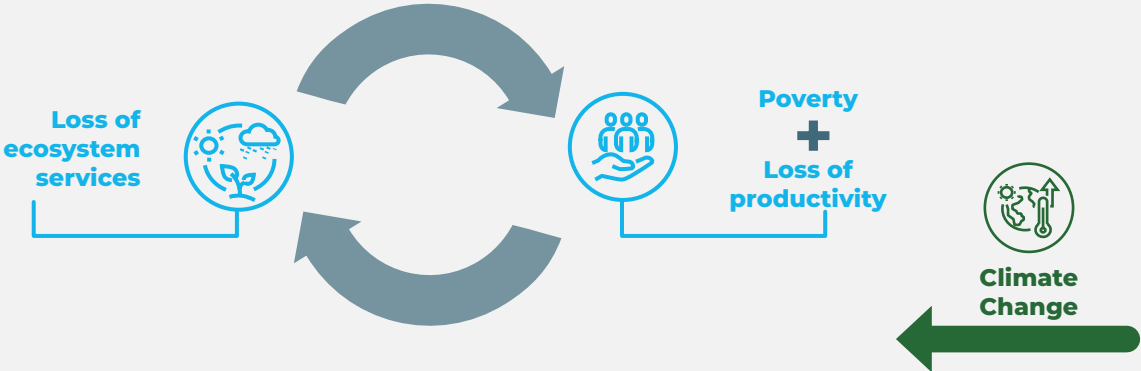


Photo: Flickr / Sustainable Cities IDB

prolonged rainy seasons results in overflows and damage to local production. Therefore, nature-based solutions must be designed to meet these changing climate challenges, requiring adaptive planning and execution to ensure landscape resilience.

The interconnection between poverty and the degradation of ecosystem services represents a significant challenge for the sustainability of the Yuna Watershed. Addressing this problem requires a holistic approach.

**Figure 10 / Descriptive diagram of the problem**





## From Ridge to Reef (R2R) approach

An R2R approach consists of an integrated approach to ecosystem services that connect mountain systems with coastal-marine systems through hydrographic watersheds, which emphasizes the interconnections between natural systems and socio-productive systems, connecting mountains with coastal and marine habitats.

In the context of tropical marine ecosystems from riparian mangrove forests, coral reefs and seagrass meadows, global factors such as climate change and local factors such as terrestrial, erosion of mountain soils, upstream land use due to inadequate productive practices, the development of infrastructure and water contamination, act in a combined way as environmental stress factors, affecting the provision and chain of ecosystem services in coastal-marine zones.

The result of these complex dynamics includes the impact of ecosystem services that are related to social, cultural, biological values, as well as the economic activities on which the communities that interact along the hydrographic watersheds that connect mountains with coastal-marine areas. At the level of coastal-marine ecosystems, factors such as soil erosion and the dragging of sediments from upstream can generate negative impacts on marine biodiversity, affecting economic activities such as tourism or fishing.

Consequently, the development of an R2R management approach in the Yuna Watershed

has the potential to influence not only the relative improvement in the management of mountain ecosystems in the upper watershed, but can also directly affect the social and economic well-being of communities throughout the watershed, thus revealing the relationship between ecosystem services and the determinants of community well-being and development.



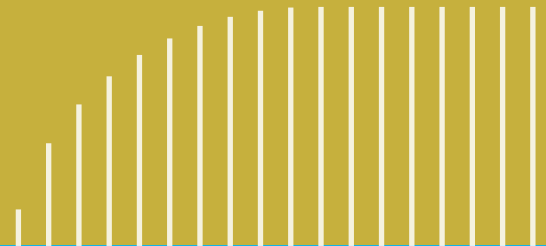
Photo: Adobe Stock

**Figure 11 / Geographic and socioeconomic focus of the “From Ridge to Reef” concept**





**INVESTMENT  
PLAN  
CO-FINANCING  
DEVELOPMENT  
ACTIVITIES**





**Five (5) development initiatives aligned with this Investment Plan have been identified. The most important aspects of each are highlighted below:**



## Inter-American Development Bank

### **Yuna River Watershed Management Plan Project<sup>71</sup>**

**Project Number:** DR-L1161

**Financial Plan:** US\$ 255 MM

Executing Agency (EA): Dominican Institute of Hydraulic Resources (INDRHI)

**Status:** Under preparation

General Objective: Contribute to food security and resilience to climate change in the *Yuna* River Watershed.

**Specific objectives:** (i) Strengthen governance for resilient water resource management; (ii) Increase environmental sustainability; and, (iii) Promote the adoption of more competitive, environmentally sustainable and climate change resilient agricultural technologies and practices.

**Components:** Component I. Support for the Governance of the Yuna River Watershed.

Component II. Sustainable Management of Natural Resources in the Watershed.

Component III. Support for the Adoption of Sustainable Agricultural and Livestock Technologies.

Component IV. Rehabilitation and Strengthening of the Resilience of Irrigation, Flood Control and Drainage Infrastructure.

### **Contribution to the objectives of the integrated program in the Yuna Watershed**

Support will be financed for the updating and piloting of a management plan for the watershed, as well as for the consolidation of the watershed committee and subcommittees, the management capacity of the irrigation boards in the watershed, and the strengthening of climate monitoring capacity. Actions will be financed for the restoration and conservation of the watershed's ecosystems with nature-based solutions that allow for a sustainable increase and greater resilience of the natural capital (water, vegetation cover, soils) of the watershed. The provision (including by private providers) of technical assistance and financial incentives via a voucher mechanism to farmers in the watershed will be financed to facilitate the transition to sustainable and resilient production systems, including the adoption of technologies (green technologies from Banco Agrícola) that will allow them to increase their productivity and sustainability of rice cultivation and/or other agricultural production systems, reducing GHG emissions, water pollution and improving resilience to climate change. Infrastructure for water regulation (canals), flood control and drainage (canals, dikes, lamination structures) will be financed.

<sup>71</sup> <https://www.iadb.org/en/whats-our-impact/DR-L1161>

## Program for Financing Sustainable Investments and Improving Productivity in the Agricultural Sector of the Dominican Republic<sup>72</sup>

**Financial Plan:** US\$ 120 MM

Executing Agency (EA): Banco Agrícola de la República Dominicana (BA)

**Status:** Under implementation

**General Objective:** Promote investments in climate adaptation and mitigation technologies, and complementary technologies that contribute to improving the sustainability of production in the Dominican agricultural sector.

**Specific Objective:** Increase in the provision of credit for investment and adoption of climate technologies and complementary technologies for micro, small and medium agricultural producers.

**Components:** Component I. Funding for Investments in Climate Technologies.

Component II. Technical Assistance for the Agricultural Value Chain.

Component III. Institutional Strengthening for BAGRÍCOLA.

### Contribution to the objectives of the integrated program in the Yuna Watershed:

finance medium and long-term credit for investments in climate and complementary technologies that contribute to improving the sustainability of production by micro, small and medium-size agricultural producers. These resources will be multisectoral and may finance investments in any agricultural subsector supported by Banco Agrícola. It will also finance training and capacity building to ensure prioritization and support the financing, adoption and use of climate technologies.

## Sustainable Coastal Management Project<sup>73</sup>

**Project Number:** DR-L1154

Financial Plan: US\$ 70 MM

Executing Agency (EA): Ministry of Tourism (MITUR)

**Status:** Under implementation

**General Objective:** Contribute to the sustainability of coastal tourism zones taking into account climate risk.

**Specific Objective:** (i) Restore and preserve priority coastal zones for tourism use; and, (ii) Strengthen the legal and institutional framework and capacities for integrated coastal zone management.

**Components:** Component I. Investments for the Sustainability of Priority Coastal Zones.

Component II. Institutional Strengthening and Public Governance for Integrated Coastal Zone Management.

### Contribution to the objectives of the integrated program in the Yuna Watershed

strengthen the legal and institutional framework and capacities at the national and local levels for Integrated Coastal Zone Management (ICZM). It will finance planning and regulatory instruments for ICZM, a coastal-marine zone monitoring system, human resources training, and awareness and education campaigns that will include private companies and other parts of the tourism value chain. This will be positive specifically for the improvement of coastal-marine management in the Yuna river mouth and *Samaná Bay*.

<sup>72</sup> <https://www.iadb.org/en/whats-our-impact/DR-L1157>

<sup>73</sup> <https://www.iadb.org/en/whats-our-impact/DR-L1154>



## Development of a Voluntary Nature-Based Credit Mechanism to Leverage Financing for a More Climate Resilient Dominican Republic

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**Project Number:** DR-T1298 and DR-T1299

**Financial Plan:** US\$1.9 MM

**Partners:** Santo Domingo Water Fund (FASD) and Yaque del Norte Water Fund (FAYN)

**Status:** Under preparation

**General Objective:** Develop an innovative and transparent financing mechanism to support the long-term sustainability of ecosystem services in the Dominican Republic.

**Specific objective:** Implement a voluntary market for Nature-Based Credits (NbCs).

**Areas of work:** (i) Structuring the protocol and technological development to finance conservation projects, (ii) Development of conservation pilot projects; and, (iii) Marketing and growth strategy.

### Contribution to the objectives of the integrated program in the Yuna Watershed

The initiative seeks to establish a voluntary nature credit market and foresees the implementation of a pilot project to conserve and restore approximately 1,000 hectares of land within the Yuna River Watershed. This initiative will provide an additional method of financing in addition to the funds allocated to the watershed and will serve as a pilot model that: 1) Supports the financial sustainability of actions in the watershed, beyond the loans granted; and, 2)

Creates instruments that channel investments from private corporations to conservation and nature restoration projects.



## GEF Project: Integrated Landscape Management in the Watersheds of the Dominican Republic<sup>74</sup>

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**Project Number:** GEF Project ID 10216

**Financial Plan:** US\$ 4 MM

**Executing Agency (EA):** Ministry of Environment and Natural Resources (MMARN)

**Status:** Under Implementation

**General Objective:** Strengthen integrated landscape management in specific watersheds in the Dominican Republic.

**Components:** (i) Create an Enabling Environment for Integrated Landscape Management (ILM) and Land Degradation Neutrality (LDN); (ii) Expand Sustainable Rice Production Systems to Improve Productivity, Water Use Efficiency and Biodiversity Conservation; and, (iii) Restore Biodiversity and Hydrological Services in Critical Ecosystems.

<sup>74</sup> <https://www.thegef.org/projects-operations/projects/10216>

<https://documents.worldbank.org/en/publication/documents-reports/documentlist?qterm=P170848&srt=score&order=desc>

### Contribution to the objectives of the integrated program in the Yuna Watershed

The project activities are based on integrated coastal zone management approaches and the development of the blue economy, and therefore tools and support will be developed to complement the blue economy initiatives for the mouth of the Yuna Watershed, which also focuses mainly on the ecotourism and fisheries aspects of the blue economy.

It should be noted that the loan design framework for this Investment Plan, as well as the implementation framework, will take into account the alignment of both the IP activities and the co-financing projects with various instruments, such as the National Industrialization Plan and the findings on the potential for creating green jobs, prepared by the United Nations Development Program.

### Blue Economy Development Project in the Dominican Republic

**Project Number:** This project is under preparation and has not yet been numbered.

**Financial Plan:** To be determined

**Executing Agency (EA):** Ministry of Environment and Natural Resources (MMARN)

**Status:** In conceptual proposal design

**General Objective:** To provide opportunities for the development of the blue economy in the Dominican Republic.

**Components:** Although the project is in the concept note formulation stage, the following components have been pre-identified: (i) Development and Strengthening of Sustainable Management of Blue Assets; (ii) Support for Coastal Marine Pollution Management; and, (iii) Blue Economy Catalyzation.

### Contribution to the objectives of the integrated program in the Yuna Watershed

The project activities are based on integrated coastal zone management approaches and the development of the blue economy, and therefore tools and support will be developed to complement the blue economy initiatives for the mouth of the Yuna Watershed, which also focuses mainly on the ecotourism and fisheries aspects of the blue economy.

It should be noted that the loan design framework for this Investment Plan, as well as the implementation framework, will take into account the alignment of both the IP activities and the co-financing projects with various instruments, such as the National Industrialization Plan and the findings on the potential for creating green jobs, prepared by the United Nations Development Program.





# **DESCRIPTION OF THE PROGRAM AND COMPLEMENTARITY OF CIF-NPC FUNDS**

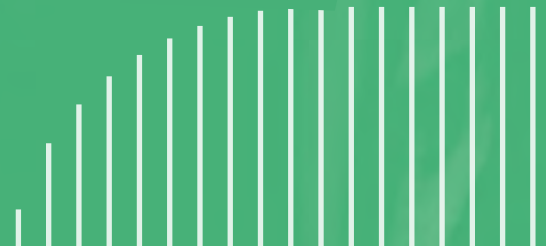




Photo: Adobe Stock

The overall objective of the CIF-NPC Investment Program in the Dominican Republic is to promote integrated, resilient and low-carbon management of the Yuna Watershed through nature-based solutions. Specifically, the CIF-NPC will carry out the following actions:

(i) Strengthen the regulatory framework and institutional capacities for integrated watershed management and implementation of nature-based solutions.

(ii) Restore and conserve key ecosystems in the Yuna Watershed through the implementation of nature-based solutions.

(iii) Support the climate resilience of communities and their livelihoods through nature-positive economic diversification.

The CIF-NPC concessional resources will leverage and complement sectoral investments (current and planned) in the Yuna River Watershed; they will support investments in nature-based solutions that will strengthen the resilience of the territory to the impacts of climate change and promote sustainable economic growth in the communities.

The CIF-NPC resources, for a total value of USD \$34 MM, will be implemented through three components led and executed by the Ministry of Environment and Natural Resources as follows:

**Table 4 / CIF-NPC budget by components**

CIF-NPC Financing				
Source of Financing (USD MM)	COMPONENTES			
	Component 1: Institutional and Regulatory Capacity	Component 2: Ecosystem Restoration and Conservation	Component 3: Nature-Positive Economic Diversification	Dedicated Grant Mechanism
<b>TOTAL BY COMPONENT:</b>	3	15.5	11.5	4
<b>TOTAL CIF-NPC</b>	<b>34</b>			

## Proposed Interventions

### Component 1: Institutional and Regulatory Capacity

The objective of this component will be to strengthen the regulatory framework and institutional capacities for integrated watershed management and the incorporation of nature-based solutions.

Financial resources will be used to support the development and/or updating of strategic

instruments for environmental conservation and the use of watershed resources, as well as the training of institutional staff in sustainable management techniques and the promotion of coordination among the different government entities and relevant organizations. This component will seek to create an enabling environment for the successful implementation of nature-based solutions, ensuring effective collaboration and a sound regulatory framework to support conservation and restoration in the Yuna Watershed.

The activities supported under this component are:


- 1/ Elaboration and updating of Management Plans in Prioritized Protected Areas in the *Yuna* Watershed.
- 2/ Elaboration of a Development Strategy for the *Yuna* Watershed as an Ecotourism Destination.
- 3/ Elaboration of a Blue Economy Development Strategy for the lower watershed and mouth of the *Yuna* River.
- 4/ Elaboration of an Integral Sustainable Fishing Plan for the mouth and coastal area of the *Yuna* Watershed.
- 5/ Elaboration of an Action Plan for the implementation of Payment for Environmental Services mechanisms in the *Yuna* Watershed, partially financed by DR-L1161.
- 6/ Support for the implementation of a NbSs portfolio, partially financed by DR-L1161.

The development of the aforementioned Plans and Strategies will incorporate the concept of Nature-Based Solutions.


The elaboration of the aforementioned Plans and Strategies will integrate actions that seek to promote gender equity and social inclusion. These actions will include:

- Inclusion of a gender and diversity-based approach.
- Participation of women and inclusion of people with disabilities.
- 3Development of capacities for the economic inclusion of women and young people.
- Consideration of sustainability criteria harmonized with the interests and aspirations of the communities.


The expected results of this component include:

-  Improved integrated watershed governance and management.


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-  Strengthened institutional capacities


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-  Improved inter-institutional coordination.

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-  Nature-Based Solutions considered in regulatory instruments

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-  Inclusion of gender and diversity-based approach

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The main beneficiaries of this component are:

Environmental and governmental authorities involved in the watershed and institutional technical and professional staff.

## Component 2: Ecosystem Restoration and Conservation

(US\$15.5 MM). The objective of this component will be to restore and conserve key ecosystems in the *Yuna* Watershed through the implementation of nature-based solutions.

Financial resources under this component will be used for the planning and implementation of projects that will apply innovative nature-based approaches in the upper and lower *Yuna* watershed, including mangrove restoration, reforestation, erosion and sedimentation control. These activities will contribute to strengthening ecosystem resilience, promoting biodiversity, improving water quality and protecting against flooding, in line with the “From Ridge to Reef” approach.


The activities supported under this component are:


- 1/ Implementation of a portfolio of Nature-Based Solutions in prioritized subwatersheds of the upper watershed and coastal zone of the *Yuna* complementing the investments financed by DR-L1161.
- 2/ Co-financing with DR-L1161 and DR-T1298 of the implementation of a Payment for Environmental Services Mechanism for the watershed.

The following actions will be incorporated to promote gender equality and diversity:

- Consideration and monitoring of percentage of women beneficiaries of the payment for environmental services mechanisms.
- Definition of a training program for stakeholders to contribute as promoters of a cultural and social change around local problems of violence and sexual and reproductive health in young women and men.

The expected results of this component include:

 Conserved or restored key terrestrial and aquatic ecosystems.

 Strengthened ecosystem services.

 Strengthened resilience to climate change impacts.

 Gender mainstreaming and social inclusion.

The main beneficiaries of this component are:

Communities and community leaders, government entities and local authorities, companies and private sector actors.

### Component 3: Nature-Positive Economic Diversification

(US\$11.5MM) The objective of this component will be to support community climate resilience and livelihoods through nature-positive economic diversification.

This funding will be directed to support programs that foster the creation of economic opportunities, such as support for community-based tourism development, improved fishing gear, local cooperatives, and training in entrepreneurial skills. This will strengthen the resilience of local communities, reducing their dependence on vulnerable economic activities and fostering sustainable and participatory development in the region.

The activities supported under this component are:

1/ Development of Ecotourism Projects.

2/ Development of prioritized projects for the development of the Blue Economy in the lower *Yuna* Watershed.

The following actions will be incorporated in terms of gender and social inclusion:

- Inclusion, whenever possible, of an accessibility policy in ecotourism projects.
- Training programs on local business and entrepreneurship.

- Promotion of the regularization of the migrant population and their inclusion in ecotourism projects.
- Promotion of women's leadership in the projects.
- Training and exchange of experiences that address, from a multidimensional paradigm, the social problems and productive and life styles that exacerbate the current climate crisis.

The expected results of this component include:



Communities, including women and people from diverse groups, empowered to manage their own economic projects.



Reduced reliance on vulnerable activities.



Strengthened civic engagement and local decision making.



Improved community life quality.



Increased access to sustainable economic opportunities.

The main beneficiaries of this component are:

Local communities and cooperatives, small businesses and local entrepreneurs, training centers and other civil society actors.

Details on the expected results, indicators and targets related to each component of this Investment Plan are presented in Chapter VIII: Monitoring and Evaluation. Details on the proposed activities and their implementation strategy are presented in Annex E: Project Presentation Sheets.

## Dedicated Grant Mechanism (DGM)

(US\$ 4 MM). Its objective is to facilitate the effective participation of local communities dependent on the *Yuna* Watershed so that they have a greater role in the design and implementation of policies and projects, implementation of activities, capacity building and community empowerment.

These communities lead the development and governance of this Mechanism and will be the ones to establish its priorities and implement projects aimed at conserving the ecosystems and natural environment of the watershed.

Other details regarding the DGM are presented in Annex F: Dedicated Grant Mechanism for the CIF-NPC Program in the Dominican Republic.

## Additionality and Complementarity of CIF-NPC Funds

The program described for the CIF-NPC adds to and complements the development initiatives outlined in Chapter IV of this Investment Plan that were identified for the watershed. The following aspects are mainly highlighted:

- CIF-NPC adds a "From Ridge to Reef" approach to interventions in the watershed: Territorially, the DR-L1161 project prioritizes the middle watershed, and the CIF-NPC funds focus their main actions on territories in the upper watershed, especially in the buffer zones of the protected areas and the coastal zone of the watershed. In this way, actions are implemented to address key challenges in the entire watershed.

- CIF-NPC finances investments focused on public assets: The CIF-NPC project will invest in public assets, and the DR-L1161 and DR-L1157 projects will focus mainly on promoting private investments (such as the case of biofilters on farms of agricultural producers) or collective investments (irrigation systems).
- CIF-NPC completes the support to key stakeholders in the sustainability of the watershed:
  - » The CIF-NPC project strengthens the role of the Ministry of Environment (as executing agency of the funds) as a key actor in watershed management. INDRHI, the Ministry of Agriculture and the Banco Agrícola are the main institutions linked to the DR-L1161 and DR-L1157 projects, respectively. DR-L1161 will support the Ministry of Environment with pilot activities aimed at establishing sustainable financing mechanisms for payments for environmental services, and IDB-LAB will develop a voluntary market pilot of nature-based credit to leverage financing focused on climate change resilience. CIF-NPC will be able to consolidate these mechanisms and capitalize on them, as well as other mechanisms for payments and compensation for ecosystem services.
  - » The CIF-NPC, through the DGM, ensures the active and meaningful participation of local communities. It not only makes them essential partners in decision making, but also effective stewards of local ecosystem services and responds directly to the need for contextualized and culturally-appropriate nature-based solutions in the fight against climate change.
- CIF-NPC supports economic diversification in the watershed: The CIF-NPC will allocate funds to the implementation of activities that foster the promotion of economic sectors with development potential in the watershed, such as Ecotourism and the Blue Economy. This adds value to the other projects whose interventions are mainly focused on the agricultural sector, located mainly in the middle watershed.

**Table 5 / CIF-NPC financing and co-financing**

CIF-NPC and Complementary Financing						
	CIF-NPC	Co-Financiers				
<b>Source of Financing</b>	CIF-NPC (through IDB and WB)	IDB (DR-L1161) Yuna River Watershed Management Plan Project	IDB (DR-L1157) Program for Financing Sustainable Investments and Improving Productivity in the Agricultural Sector of the Dominican Republic	IDB (DR-L1154) Sustainable Coastal Management Project	WB (GEF project) Integrated Landscape Management in the Watersheds of the Dominican Republic	IDB-Lab + IDB Invest Project for the Development of a Voluntary Market for Nature-based Credits
<b>Executor (right)</b>	Ministry of Environment and Natural Resources	INDRHI	Banco Agrícola	Ministry of Tourism	Ministry of Environment and Natural Resources	
COMPONENTS (below)						
<b>Component 1: Institutional and Regulatory Capacity</b>	US\$ 3 MM	US\$ 40 MM	(none)	US\$ 07 MM	US\$ 1 MM	(none)
<b>Component 2: Ecosystem Restoration and Conservation</b>	US \$ 15.5 MM	US\$ 165 MM	(none)	(none)	US\$ 1.5 MM	US\$ 1.9 MM (IDB-LAB voluntary market project)
<b>Component 3: Nature-Positive Economic Diversification</b>	US\$ 11.5 MM	US\$ 50 MM	US\$ 25 MM	(none)	US\$ 1.5 MM	(none)
<b>Dedicated Grant Mechanism</b>	US\$ 4 MM					
SUBTOTAL:		US\$ 255 MM	US\$ 25 MM	US\$ 7 MM	US\$ 4 MM	US\$ 1.9 MM
<b>TOTAL:</b>	US\$ 34 MM	US\$ 292.90 MM				

## **Component 1:**

Under the IDB loan project DR-L1161, the elaboration of a *Yuna* Watershed Management Plan will be financed. It will finance support for inter-institutional coordination (updating and piloting of the management plan), as well as specific support to the Ministry of Environment and Natural Resources for the consolidation of the watershed committee and subcommittees, to INDRHI for activities to strengthen resilient and operational institutional management capacity and irrigation boards in the watershed, and to the National Meteorological Office (ONAMET, for its acronym in Spanish) to strengthen its climate monitoring capacity. DR-L1161 is expected to be approved by the IDB Board in the first half of 2024. GEF project 10216 will simultaneously support these representative organizations under an integrated landscape management approach and through capacity building for land use planning and monitoring.

This Management Plan will take into account needs to support the development of economic activities that have already been analyzed and assessed as having development potential in the watershed. In this sense, the CIF-NPC funds will be used for the preparation and updating of Management Plans in Protected Areas located in the watershed and prioritized by the Dominican Government. Likewise, CIF-NPC funds will be used for institutional support for the development of strategies or other enabling instruments for the implementation of NbSs and for the application of PES mechanisms in the watershed. This includes training and awareness raising.

The potential for the development of positive economic activities for nature will also be supported with CIF-NPC funds through the elaboration of a Development Strategy for the *Yuna* Watershed as an Ecotourism Destination, a Blue Economy Development Strategy for the lower watershed and river mouth of the *Yuna*, as well as a sustainable fishing plan for the *Samaná* Bay. These activities financed by CIF-NPC will allow prioritizing projects that have been identified in the strategy and are aligned with the objectives of Component 3 of this Investment Plan.

As an Additionality element, project DR-L1154 will strengthen the legal and institutional framework and capacities at the national and local levels for Integrated Coastal Zone Management (ICZM). To this end, it will finance planning and regulatory instruments for ICZM, a coastal-marine zone monitoring system, human resources training, and awareness and education campaigns. This will be positive specifically for the improvement of coastal-marine management in the mouth of the *Yuna* and the *Samaná* Bay.

## **Component 2:**

Within the framework of the preparation of this CIF-NPC investment plan and the IDB loan DR-L1161, a NbSs portfolio has been developed that addresses the objectives of erosion reduction, sedimentation and nutrient reduction, reduction of flood peaks and increase in base flow, recharge and infiltration. Additionally, 5<sup>75</sup>

<sup>75</sup> The 5 prioritized subwatersheds have been identified as follows: (i) Upper Tیره Watershed -91854-; (ii) Upper South Bonao Watershed -91935-; (iii) Middle Watershed -89546-; (iv) Lower Watershed -90865 -; and (v) Coastal Zone -90455.

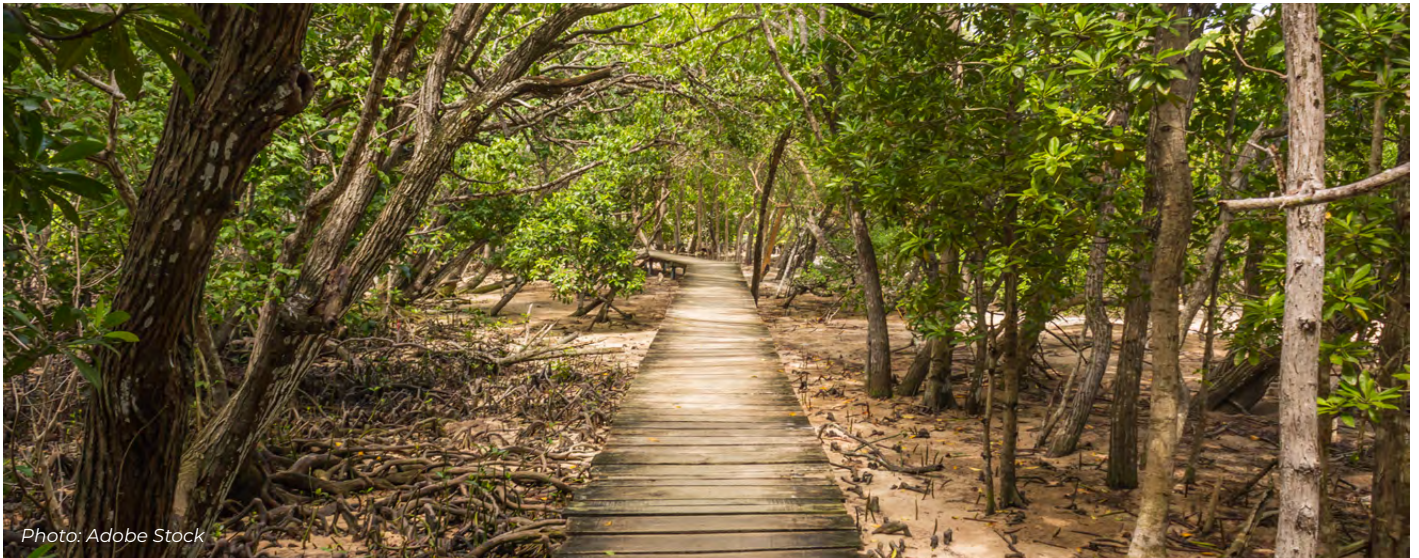


Photo: Adobe Stock

priority subwatersheds have been identified for the implementation of the designed portfolio. Within the framework of the DR-L1161 project, priority will be given to the implementation of the portfolio in the subwatersheds located in the middle Yuna Watershed (2 of the 5 priority subwatersheds).

This, aligned with the project's objectives, will finance actions for the restoration and conservation of the watershed's ecosystems with nature-based solutions that allow for a sustainable increase and greater resilience of the natural capital (water, vegetation cover, soils) of the middle watershed. The CIF-NPC investments will be used to ensure the "From Ridge to Reef" approach, implementing the NbSs portfolio for the subwatersheds identified in the upper watershed and coastal zone (3<sup>76</sup> of the 5 priority subwatersheds).

The implementation of a payment mechanism for environmental services is another of the activities to be included in this component. The IDB-LAB will implement a voluntary market for nature-based credits (NbCs) through which companies

and individuals interested in compensating for their negative environmental impacts acquire NbCs and the income obtained is directed to a trust fund that is distributed among local rural communities and a conservation monitoring fund. For its part, the DR-L1161 will support the scalability of the voluntary market project and, finally, CIF-NPC funds will help inject capital into this PES implementation platform, as well as other payment and compensation mechanisms for ecosystem services derived from the experience of the Ministry of Environment and Natural Resources.

### **Component 3**

In support of positive economic diversification for nature and through the CIF-NPC funds, priority projects linked to the Development Strategy for the *Yuna* Watershed as an Ecotourism Destination will be implemented. Priority will be given to projects that have been pre-identified through an assessment to determine the potential for sustainable tourism development in the entire watershed and that indicate areas

<sup>76</sup> The 3 subwatersheds in which CIF-NPC will invest funds are the following: (i) Upper Tiroo Watershed -91854-; (ii) Upper South Bonao Watershed -91935-; and, (v) Coastal Zone -90455.

where natural and cultural attractions can be enhanced through ecotourism projects and identified management and beneficiary communities. CIF-NPC funds will also be used to implement priority projects aligned with the Blue Economy Development Strategy for the lower watershed and mouth of the Yuna, specifically those projects related to improving fishing and its value chain.

The IDB, through project DR-L1157, will address the needs of the agricultural sector in the watershed. This project will promote investments in climate adaptation and mitigation technologies and complementary technologies that contribute to improving the sustainability of the agricultural sector and will increase the provision of credit for investment by micro, small, and medium-size agricultural producers. This project was approved in November 2023 and is currently pending ratification by the Congress of the Dominican Republic. Through DR-L1161, the IDB

will finance the provision (including by private providers) of technical assistance and financial incentives via a voucher mechanism for farmers in the watershed to facilitate the transition to sustainable and resilient production systems, including the adoption of technologies that will allow them to increase their productivity and sustainability of rice cultivation and/or other agricultural production systems, reducing GHG emissions, water pollution and improving resilience to climate change.

As a cross-cutting aspect of all activities that require capacity building and strengthening, the existing updated training offer of the National Technical-Vocational Training Institute (*INFOTEP*, for its acronym in Spanish) will be taken into account.

Table 6 summarizes the problems and challenges identified, as well as the proposed projects to be implemented with the CIF-NPC funds.



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**Table 6 / Conceptual map for relation among problems, challenges and proposed projects**

Relation among problem, challenges, activities to be financed and expected results		
Identified Problem	Identified Challenges	Proposed Projects
<p>The degradation cycle of ecosystem services and poverty in the <i>Yuna</i> Watershed reveals an interdependence between environmental degradation and the economic precariousness of local communities. Unsustainable exploitation of natural resources fuels this negative dynamic, reducing the availability of essential ecosystem services and exacerbating poverty. Climate change intensifies these adverse effects, increasing the frequency of extreme weather events.</p>	<p><b>Lack of or outdated Management Plans and other strategic instruments to strengthen the management of the protected areas associated with the Yuna, as well as to promote economic diversification in the watershed.</b></p>	<ol style="list-style-type: none"> <li>1/ Elaboration and updating of Management Plans in prioritized Protected Areas.</li> <li>2/ Elaboration of a Development Strategy for the <i>Yuna</i> River Watershed as an Ecotourism Destination.</li> <li>3/ Elaboration of a Blue Economy Development Strategy for the lower <i>Yuna</i> watershed and mouth of the <i>Yuna</i> River.</li> <li>4/ Support for the implementation of a Strategy for Payment for Environmental Services.</li> <li>5/ Support for the implementation of a NbSs portfolio.</li> </ol>
	<p><b>Climate change is exacerbating problems in the <i>Yuna</i> Watershed, increasing the frequency and intensity of droughts and floods. NbSs must be designed to meet these changing climatic challenges.</b></p>	<ol style="list-style-type: none"> <li>1/ Implementation of a portfolio of NbSs in prioritized micro-watersheds in the upper watershed and coastal area.</li> <li>2/ Co-financing with DR-L1161 and DR-T1298 of a Payment for Environmental Services Mechanism for the watershed.</li> </ol>
	<p><b>Communities do not have the opportunities, economic resources or capacities to take on ventures. It should also be considered that nature-based solutions must be socially and environmentally sustainable.</b></p>	<ol style="list-style-type: none"> <li>1/ Development of Ecotourism Programs.</li> <li>2/ Development of prioritized projects for the development of the Blue Economy in the lower <i>Yuna</i> watershed.</li> </ol>



# **FINANCING PLAN AND INSTRUMENTS**





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## Requested budget for investments

This section presents the financing plan for the implementation of the proposed activities to be supported by the Dominican Republic CIF-NPC Program, including costs and funding sources. The requested amount for the Dominican Republic CIF-NPC Investment Plan is US\$34 million.

The Investment Plan proposes that the CIF-NPC resources co-finance three components: i) Institutional and Regulatory Capacity; ii) Ecosystem Restoration and Conservation; and, iii) Nature-Positive Economic Diversification.

Table 7 presents how the Dominican Republic's CIF-NPC Investment Plan plans to leverage funding for these three components and the split between the IDB group and the WB group. It should be noted that Component 1 funds will be managed as a grant (US\$3 million, corresponding to 10% of the investment resources), and Component 2 and 3 funds as a loan (US\$27 million). The concessional conditions correspond to an interest rate of 1.24%, with a term of up to 30 years and a grace period of 8 years.

**Table 7 / Indicative financing plan for CIF-NPC Dominican Republic**

CIF-NPC Financing					
Source of Financing (USD)	Componentes				TOTAL by BANK
	Component 1: Institutional and Regulatory Capacity	Component 2: Ecosystem Restoration and Conservation	Component 3: Nature-Positive Economic Diversification	Dedicated Grant Mechanism	
CIF-NPC (through IDB)	1.5 MM	15.5 MM			17 MM
CIF-NPC (through WB)	1.5 MM		11.5 MM	4 MM	17 MM
TOTAL BY COMPONENT:	3 MM	15.5 MM	11.5 MM	4 MM	
<b>TOTAL CIF-NPC</b>	<b>34 MM</b>				

## Cost of Activities to be Implemented by Component and Financing Sources

The CIF-NPC resources will be channeled through the IDB and the WB, and will be executed through the Ministry of Environment and Natural Resources. These financing sources are described below according to the activities of each component.



## ➔ Component 1: Institutional and Regulatory Capacity (US\$ 1.5 MM IDB and US\$ 1.5 MM WB)

**Table 8 / Indicative cost plan for activities financed in Component 1**

CIF-NPC Financing						
Source of Financing (USD)	Component 1: Institutional and Regulatory Capacity					
	Elaboration and updating of Management Plans in prioritized Protected Areas	Elaboration of a Development Strategy for the Yuna Watershed as an Ecotourism Destination	Elaboration of a Blue Economy Development Strategy for the lower watershed and mouth of the Yuna River	Development of an Integral Sustainable Fishing Plan	Development of a PES Payment Strategy	Support for the implementation of a NbSs portfolio
BID x Fondos CIF-NPC	US\$ 700.00 K	-	-	-	US\$ 400.00 K	US\$ 400.00 K
BM x Fondos CIF-NPC	-	US\$ 700.00 K	US\$ 500.00 K	US\$ 300.00 K	-	-
<b>TOTAL CIF-NPC</b>	<b>US\$ 3.00 MM</b>					

*\*It is proposed that the resources of this component be managed as a grant.*

## 1 Preparation and updating of Management Plans in prioritized Protected Areas

Of the 17 protected areas located in the *Yuna* watershed, 8 protected areas (5 National Parks and 3 Scientific Reserves)<sup>77</sup> have been identified as needing prioritization. The CIF-NPC resources will allow for the preparation of pending plans, the updating of existing plans, and the identification of priority activities tailored to the needs of these protected areas. The activity of preparing and updating Management Plans in the *Yuna* Watershed's prioritized protected areas involves an integral process that seeks to ensure the effective conservation of natural resources, the restoration of key ecosystems, and the active involvement of local communities in the sustainable management of the territory.

## 2 Elaboration of a Development Strategy for the *Yuna* Watershed as an Ecotourism Destination

This activity seeks to highlight the natural and cultural values of the watershed, establishing a plan for their enhancement, to promote community participation and sustainable tourism that contributes to local economic development and the conservation and restoration of the environment.

## 3 Elaboration of a Blue Economy Development Strategy for the lower watershed and mouth of the *Yuna* River

This is an initiative that seeks to sustainably value the coastal and marine natural capital (including its restoration and conservation) to revitalize the local economy by generating employment, fostering innovation and promoting positive economic diversification for nature, which would contribute to improve living conditions and reduce dependence on traditional activities with limited development.

## 4 Integral Sustainable Fishing Plan

It is important to strengthen the fishing economy in order to combat the current limitations, even though it is the most developed activity related to the blue economy in the area. This initiative seeks to promote the diversification of fishing activities, the adoption of sustainable fishing practices and the development of aquaculture as an integral approach to the conservation of marine resources and the well-being of local communities.

<sup>77</sup> National Parks: Mangroves from Bajo Yuna, Valle Nuevo, Los Haitises, Loma la Humeadora, Aniana Vargas. Scientific Reserves: Loma Quita Espuela, Ébano Verde, Las Neblinas.

## 5 Development of an Action Plan for Payment for Ecosystem Services

This activity will support capacity building and other enabling instruments so that the implementation of PES mechanisms can be improved and innovative methodologies considered. It will be based on a detailed evaluation and assessment process that was carried out at the pre-feasibility level to design an effective PES mechanism adapted to the particularities of the Yuna watershed. This process involved the identification of 5 strategic<sup>78</sup> initiatives with potential for application in the watershed.

## 6 Support for the implementation of a NbSs portfolio

This activity will support capacity building and other enabling instruments for the implementation of NbSs identified with potential for implementation in the watershed.

## ➔ Component 2: Ecosystem Restoration and Conservation (US\$ 15.5 MM IDB)

**Table 9 / Indicative cost plan for activities financed in Component 2**

CIF-NPC Financing				
Source of Financing (IDB x CIF-NPC Funds) (USD)	Component 2: Ecosystem Restoration and Conservation			
	Implementation of the NbSs portfolio in prioritized subwatersheds.			Co-financing conservation and restoration projects through Nature-Based Credits
	Prioritized subwatershed #1 (Tireo - upper watershed)	Prioritized subwatershed #2 (Bonao - upper ) watershed	Prioritized subwatershed #3 (Yuna coastal zone)	
Funds allocated for the activity	US\$ 4.50 MM	US\$ 4.50 MM	US\$ 4.50 MM	US\$ 200 MM
TOTAL x ACTIVITY	US\$ 13.5 MM			US\$ 2.00 MM
<b>TOTAL CIF-NPC</b>	<b>US\$ 15.5 MM</b>			

*\*It is proposed that the resources of this component be managed as a loan.*

<sup>78</sup> The 5 strategic initiatives identified are: (i) Management of water provision services; (ii) Ecosystem restoration and climate regulation; (iii) Production, sustainable use of soil and water resources; (iv) Biodiversity conservation; and, (v) Capacity building for sustainability.

## 1 Implementation of a portfolio of Nature-Based Solutions for prioritized subwatersheds of the upper watershed and coastal zone of the Yuna River.

A portfolio adapted to the Yuna watershed has been prepared, which identifies 9 NbSs with potential for implementation. Likewise, 5 subwatersheds with prioritization needs have been identified throughout the watershed. The CIF-NPC funds will be used to work on 3 of these subwatersheds (2 of them in the upper watershed, and the third in the coastal zone). NbSs will be implemented to strengthen the resilience of specific areas and improve ecosystem services within the watershed.

## 2 Co-financing of a Payment for Environmental Services Mechanism for the watershed

The main objective of the Payment for Environmental Services Mechanism for the Yuna watershed is to incentivize and reward local communities and other actors that contribute to the conservation and restoration of environmental services, through a participatory, financial and voluntary approach that seeks to ensure long-term environmental sustainability. It will promote mechanisms such as voluntary nature-based credit markets, as well as other payments and compensation for ecosystem services.

## ➔ Component 3: Nature-Positive Economic Diversification (US\$ 11.5 MM WB)

**Table 10 / Indicative cost plan for activities financed in Component 3**

CIF-NPC Financing							
Financing Source (WB x CIF-NPC Funds)	Component 3: Nature-Positive Economic Diversification						
	Development of Ecotourism Programs					Development of prioritized projects for the development of the Blue Economy in the lower Yuna watershed	
	Loma Quita Espuela and El Zorzal	Saltos de Jima	Hatillo Dam	Guácaras Taína in Aniana Vargas	Lower Yuna Mangrove Trail	Support for aquaculture	Pilot for mariculture
Funds allocated for the activity	US\$ 1.4 MM	US\$ 750.00 K	US\$ 1.50 MM	US\$ 500.00 K	US\$ 1.00 MM	US\$ 4.2 MM	US\$ 2.15 MM
TOTAL x ACTIVITY:	US\$ 5.15 MM					US\$ 7.00 MM	
<b>TOTAL CIF-NPC</b>	<b>US\$ 11.50 MM</b>						

*\*It is proposed that the resources of this component be managed as a loan.*

## 1 Development of Ecotourism Programs

The potential for development of initiatives related to ecotourism in the Yuna watershed has been studied. Based on this and taking advantage of the values of the natural areas of the watershed, 5 initiatives have been identified to be included in the Development Strategy for the Yuna Watershed as an Ecotourism Destination and with the potential to be financed by the CIF-NPC:

- Ecotourism Program for Loma Quita Espuela and El Zorzal Reserve.
- Ecotourism Program for Saltos de Jima.
- Ecotourism Program for the Hatillo Dam.
- Ecotourism Program for the Taino Guácaras in Aniana Vargas.
- Ecotourism Program for the Bajo Yuna Mangrove Trail.

## 2 Development of prioritized projects for the development of the Blue Economy in the lower Yuna River Watershed.

Considering the relevance of the fishing sector in the mouth and coastal zone of the *Yuna*, 2 initiatives have been identified to be included in the Blue Economy Development Strategy for the lower watershed and mouth of the *Yuna* and in the Integral Plan for Sustainable Fishing:

- Support for Aquaculture Development.
- Implementation of mariculture pilots.
- Both initiatives will work on improving the cold chain, as a special need has been identified in this regard for all fishing activity in the area.

## ➔ Dedicated Grant Mechanism (DGM) (USD\$4MM WB)

DGM resources will be channeled through the WB and will be executed by a designated entity, yet to be identified.

The beneficiaries of funds under this mechanism will be local communities in the Yuna watershed that are affected by climate change. Projects eligible for support under this mechanism will be aimed at strengthening the resilience of local

communities, promoting adaptation to climate change and supporting mitigation measures. These projects will be proposed and managed in a participatory manner by the communities themselves, considering their traditional and cultural knowledge, as well as their specific needs and priorities related to the sustainable management of natural resources and the protection of their territories.



# POTENTIAL FOR IMPLEMENTATION WITH RISK ASSESSMENT

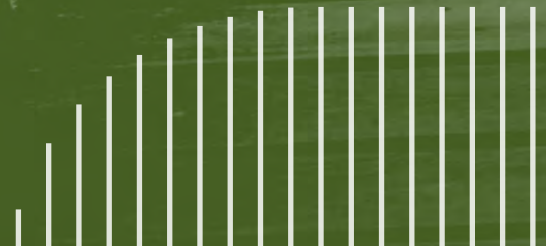




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# Potential for Implementation and Risk

The implementation of the Investment Plan proposed by CIF-NPC awakened great interest and potential at the national level due to its focus on nature-based solutions. However, this project faces a number of challenges that span multiple dimensions. In addition to the need to secure financial resources on competitive terms, risks ranging from changes in political priorities to environmental and social challenges are identified. This combination of challenges raises the critical importance of addressing and mitigating these risks to ensure the long-term success and sustainability of the project in the Yuna Watershed.

The risks identified by category are summarized below. For details, please refer to Annex G: Risk Analysis Table of this Investment Plan.

## Financial Risks

Significant financial risks have been identified that could impact the sustainability and continuity of the initiatives, or limit the projected socioeconomic impact and diversification in the territory.

The first risk identified has to do with the lack of financial resources once the ICF-NPC support comes to an end. The proposed mitigation includes the consideration of economic parameters in the feasibility analysis mainly for infrastructure-related projects. In the case of payment for environmental services, this is mitigated by the PES mechanism to be implemented. The

second financial risk identified is the possibility of unexpected increases in costs, which could generate a significant gap with respect to the initial estimates and for which the preparation of an alternative plan is proposed in order to optimize the available resources. The third risk identified is the possible detour of resources to other sectors in the event of extreme events, which could disrupt the allocation of resources to nature-based solutions. The proposed mitigation measure is to establish protocols to safeguard project continuity.

## Operational / Technological Risks

In general terms, the lack of a sound organizational structure and poor internal process development in projects are identified risks. These risks are related to unclear roles and responsibilities, limited involvement of government actors, and limited availability of qualified human resources. The proposed mitigation involves establishing a clear organizational structure, defining roles and responsibilities, and encouraging the participation of all relevant stakeholders through meetings covering all phases of the project.

In addition, specific risks have been identified in the following areas:

**Nature-based solutions (NbSs)** - Risks include lack of technical follow-up during implementation, potential interest in non-prioritized areas, and lack of adequate monitoring and evaluation systems. Suggested

mitigation strategies are to ensure continuous technical follow-up, as well as to widely socialize the project and establish monitoring and follow-up systems to maximize the benefits of the implementations.

**Tourism** - Risks involve the maintenance of tourism facilities and inadequate management of visitor flow in protected areas. Mitigation focuses on clearly defining roles and competencies, as well as coordinating with tourism authorities to effectively manage the flow of visitors to the area.

**Fisheries and aquaculture** - Challenges include potential conflicts of interest in defining community roles and responsibilities for managing aquaculture projects and lack of funds to implement projects. Mitigation includes a participatory definition of management models, involving the local community, and the identification of funding sources beyond the initial project phase.

### **Legal / Regulatory Risks**

The first risk points to possible delays or denial of permits necessary to carry out the identified investments. Proposed mitigation involves active collaboration with the entities in charge of granting permits, along with the coordination of the necessary requirements and procedures through work meetings.

In addition, the risk of future updates to the regulatory framework that may be incompatible with planned activities is mentioned. Proposed mitigation involves considering both the current regulatory framework and future prospects for defining viable activities and analyzing current and draft regulations related to projects in the pre-feasibility stage.

Finally, an additional risk is identified involving potential conflicts between planned activities and measures contemplated in the Management Plan for nearby protected areas. Proposed mitigation includes clearly defining roles and competencies, involving relevant stakeholders, and holding meetings to review the compatibility of activities in the protected area.

### **Environmental Risks**

The first risk points to the possibility of changing conditions in the ecosystem, generating unforeseen impacts downstream due to activities in upper areas of the watershed. The second risk highlights the possibility of altering ecosystems by introducing changes in water and nutrient flows, affecting natural patterns. The third risk identifies susceptibility to extreme weather events that could affect the effectiveness of recovery measures.

For these risks, the proposed mitigation includes the exhaustive assessment, continuous monitoring and follow-up of the impacts on the different watershed areas. Likewise, the inclusion of climate mitigation measures in the definition of projects, as well as the preparation of climate risk management studies that include climate analysis, risk identification, adaptation measures, and coordination with entities related to risk and disaster management.

Residual risk will depend on the ability to implement and rigorously follow the proposed mitigation measures. Close collaboration with experts, government institutions and local communities will be essential to monitor and adapt to potential environmental impacts, thus ensuring the long-term sustainability of the project.

## Social Risks

Understanding, awareness and collaboration with the community will be essential to reduce resistance and ensure the successful adoption of sustainable practices in the Yuna Watershed, thus guaranteeing mutual benefit and social cohesion in the project.

The first risk identified involves community and stakeholder resistance to projects and their impacts, particularly if the long-term benefits are not understood. The second risk relates to conflicts of interest or lack of involvement in governance from the outset. The third risk identified focuses on resistance to behavioral changes needed for more sustainable practices due to ingrained habits.

Proposed mitigation includes a strategy of participatory work with the community and all stakeholders, seeking support from public, private and non-governmental entities, and the creation of open spaces for participation in all phases of the project. Gender criteria are to be included in the operation, awareness-raising to increase the hiring of women, and social and gender participation criteria in the definition of activities.

## Political Risks

The Yuna Watershed project faces political risks that could affect its continuity and acceptance in the national and local context. The uncertainty inherent in political changes can always be a challenge, which underscores the importance of maintaining constant engagement with political stakeholders and the support of local communities to ensure the continuity and success of the Yuna Watershed project.

The first risk identified is the possibility of changes in national and local political interests and priorities that could influence the continuity of the project, especially during events such as elections or the arrival of new political leaders. The second risk highlights the possibility of dismissing the usefulness of nature-based solutions due to changes in political actors and their interests, which could affect the viability and support for the project.

The residual risk will depend on the effectiveness of the mitigation measures implemented. Proposed mitigation includes the organization of coordination meetings and ownership of the project by relevant actors in all phases of the project, as well as the generation of binding agreements to ensure the continuity of the project regardless of political changes.





## Ability to Absorb the NPC Program and Associated Investments

The Dominican Republic's economy has maintained solid growth, outperforming the Latin American average with GDP growth of 4.3%. Despite challenges such as the COVID-19 pandemic, international financial conditions and inflationary pressures, the country achieved real GDP growth of 4.9% in 2022. The tourism sector was key, with a 24.0% increase by the end of 2022, attracting a record 7.2 million foreign visitors. Despite the general slowdown, hotels and restaurants maintained a 12.9% growth in 2023, stabilizing the economy.

The Central Bank controlled inflation, gradually increasing the monetary policy rate (MPR) to 8.5% in 2022 and stopping that increase in 2023. Inflation remained within the target range of 4.0%  $\pm$  1.0%. Foreign and portfolio investment was attracted, maintaining stability despite inflation. The labor market experienced historic growth with 4.9 million jobs in 2023.

The agricultural sector grew by 5.0%, driven by agriculture and livestock. Production of tomatoes (19.0%), coffee (13.1%) and cocoa (10.3%) increased. The government allocated significant resources to this sector, supporting production through initiatives such as land titling and subsidies. Despite the achievements, climate risks persist, which led the Central Bank to announce a new RD\$25 billion rapid liquidity facility for affected sectors.

Future projections pointed to economic growth of 3.0% in 2023, driven by tourism and public investment. Monetary and financial policies are expected to keep inflation under control. Multilateral agencies forecast positive and sustained growth supported by key sectors such as tourism, foreign investment and remittances.

For further details related to this section, please refer to Annex B: Assessment of the country's absorptive capacity for integration activities.



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# MONITORING AND EVALUATION





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The Monitoring, Evaluation and Learning approach for the Dominican Republic's Investment Plan, based on the CIF-NPC Integrated Results Framework (IRF), is established by the Government and national implementing entities, in cooperation with the MDBs, with the purpose of enabling tracking and reporting of progress along the achievement of results and objectives, reflecting the results chain from the implementation of Investment Plan support activities presented in Chapter V: Description of the Program and Complementarity of CIF-NPC Funds. Within this integrated approach, program and project impact measurement is registered through

multiple dimensions of monitoring, evaluation, learning and other key cross-cutting approaches such as gender inclusion.




## **Theory of Change and IRF**

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Through the execution of the activities to be supported by CIF-NPC, thanks to the use of concessional resources, specific results are expected as illustrated in Table 11, presenting the general approach of the program's Theory of Change applied to the Dominican Republic's Investment Plan.



**Table 11 / Theory of Change of the CIF-NPC Investment Plan for the Dominican Republic**

Development Objective	Promoting integrated, resilient, low-carbon management of the Yuna watershed through nature-based solutions				
<p><b>Results</b></p>	 <p><b>1 Institutional and Regulatory Capacity</b></p> <ul style="list-style-type: none"> <li>Strengthened watershed governance and institutional capacities.</li> <li>Nature-based solutions considered in strategic plans and instruments.</li> </ul>	 <p><b>2 Ecosystem Restoration and Conservation</b></p> <ul style="list-style-type: none"> <li>Key terrestrial and aquatic ecosystems conserved or restored.</li> <li>Enhanced ecosystem services.</li> </ul>	 <p><b>3 Nature-Positive Economic Diversification</b></p> <ul style="list-style-type: none"> <li>Empowered communities (including women and people from diverse groups) to manage their own economic projects.</li> <li>Reduced dependence on vulnerable activities.</li> <li>Improved quality of life.</li> </ul>		
<p><b>Products</b></p>	<ul style="list-style-type: none"> <li>Management Plans for prioritized Protected Areas in the watershed prepared and/or updated.</li> <li>Development Strategies for Ecotourism and Blue Economy elaborated.</li> <li>Support for capacity building to implement nature-based solutions and payment for environmental services mechanisms implemented.</li> </ul>	<ul style="list-style-type: none"> <li>Portfolio of Nature-based Solutions implemented in prioritized subwatersheds of the upper watershed and coastal zone.</li> <li>Mechanism for Payment for Environmental and Ecosystem Services co-financed.</li> </ul>	<ul style="list-style-type: none"> <li>Ecotourism Programs developed in priority areas of the watershed.</li> <li>Blue Economy Development Projects implemented in the lower <i>Yuna</i> watershed.</li> </ul>		
<p><b>Activities</b></p>	<p>Strengthen the regulatory framework and institutional capacities for integrated watershed management and the incorporation of nature-based solutions.</p>		<p>Implement nature-based solutions to improve key ecosystem services in the <i>Yuna</i> watershed.</p>		<p>Support community-based climate resilience and livelihoods through nature-positive economic diversification.</p>
<p><b>Resources/ Inputs</b></p>	<p>Nature-based solutions adapted to the context and needs of the <i>Yuna</i> Watershed.</p>	<p>Watershed-tailored solutions for the implementation of payments for environmental and ecosystem services.</p>	<p>Gender and Diversity addressed in the key aspects for community resilience in the watershed.</p>	<p>Institutional and community capacities focused on the promotion of NbSs.</p>	<p>Knowledge of CC impacts in the <i>Yuna</i> Watershed.</p>

## Integrated Results Framework

The Dominican Republic's Investment Plan responds to the CIF's integrated approach to results measurement. Specific indicators are identified already in connection with the Integrated Results Framework (IRF) of the Investment Plan, as presented in Table 12, which will allow the monitoring and evaluation of achievements to be obtained based on the expectations of the program conceived.

The indicators presented in the following tables can be reflected within the NPC Integrated Results Framework (IRF), if you see Annex H: Integrated Results Framework (IRF) according to the CIF-NPC.

It should be noted that the objectives established for these indicators are rather tentative and indicative.

**Table 12 / Integrated Results Framework**

Indicators	Unit of Measurement	Baseline Value	Target	Means of Verification
<p><b>Project Objective</b></p> <p>The overall objective is to promote integrated, resilient and low-carbon management of the Yuna watershed through nature-based solutions. The specific objectives are to (i) strengthen the regulatory framework and institutional capacities for integrated watershed management and the implementation of nature-based solutions; (ii) support the restoration and conservation of key ecosystems in the Yuna watershed through the implementation of nature-based solutions; and, (iii) support climate resilience in communities through a diversification of nature-positive livelihoods.</p>				
<p><b>Overall Development Objective:</b> To promote integrated, resilient and low-carbon management of the <i>Yuna</i> watershed through nature-based solutions.</p>				
<b>Sedimentation in the lower watershed</b>	Tons /year	32,321.98	20,686	<ul style="list-style-type: none"> <li>Annual report with project progress reports, presenting calculations to verify sedimentation reduction in the watershed, using the RIOS* methodology.</li> </ul> <p>*The baseline comes from IDOM report #3: Pre-feasibility report, where this model is used to quantify the current state of the watershed for sedimentation.</p>
<b>Soil carbon balance</b>	(MT CO2 eq)	0	130,892	<ul style="list-style-type: none"> <li>Annual report with project progress reports, presenting calculations of the absorption capacity achieved through reforestation activities implemented under the NbSs portfolio.</li> </ul>
<b>Water quality</b>	Kg/year (nutrients exported)	24,732	15,828	<ul style="list-style-type: none"> <li>Annual report with project progress reports, presenting measurements of nitrogen going to water sources.</li> </ul> <p>*The baseline comes from IDOM report #3: Pre-feasibility report, where they measure water quality through calculations of nitrogen present in water sources.</p>

## Development Indicators

Indicators	Unit of Measurement	Baseline Value	Target	Means of Verification
<b>Specific Development Objective 1: Strengthen the regulatory framework and institutional capacities for integrated watershed management and the implementation of nature-based solutions.</b>				
<b>Volume of leveraged co-financing for mitigation/adaptation in the watershed</b>  = (NPC core 5)	(USD)	0	TBD "Board approval"	<ul style="list-style-type: none"> <li>Annual progress reports on the implementation of the co-financing project DR-L1161 presenting the progress of mitigation and adaptation financing in a disaggregated manner.</li> </ul> <p>*The established target corresponds to 100% of DR-L1161 funding for climate finance, which will be presented in a disaggregated manner for mitigation and adaptation.</p>
<b>Specific Development Objective 2: Support the restoration and conservation of key ecosystems in the Yuna watershed through the implementation of nature-based solutions.</b>				
<b>Increase in carbon stocks</b>  = (NPC core 1)	(MT CO2 eq)	0	130,892	<ul style="list-style-type: none"> <li>Annual report with project progress reports, presenting calculations of the absorption capacity achieved through reforestation activities implemented under the NbSs portfolio.</li> </ul> <p>*Hectares covered disaggregated by their contribution to adaptation/mitigation will be shown.</p>
<b>Increase in carbon stocks</b>  = (NPC core 1)	(MT CO2 eq)	0	130,892	<ul style="list-style-type: none"> <li>Annual report with project progress reports, presenting calculations of the absorption capacity achieved through reforestation activities implemented under the NbSs portfolio.</li> </ul> <p>*Hectares covered disaggregated by their contribution to adaptation/mitigation will be shown.</p>
<b>Objective 3: Specific Development Objective 3: Support climate resilience in communities through diversification of nature-positive livelihoods</b>				
<b>Number of people receiving livelihood</b>  = (NPC core 6)	(ha)	0	120	<ul style="list-style-type: none"> <li>Annual reports on the progress made in the implementation of the Ecotourism, Blue Economy and PES programs implemented under this Investment Plan, indicating the number of men and women benefited by these projects.</li> </ul>
<b>Jobs created: Direct and indirect</b>  = (NPC core 7)	(#)	0	Direct: 110 Indirect: 315	<ul style="list-style-type: none"> <li>Annual reports on the progress in the implementation of the Ecotourism, Blue Economy and NbSs portfolio implementation programs, indicating the number of jobs created and filled, disaggregated by direct and indirect, and by gender.</li> </ul>

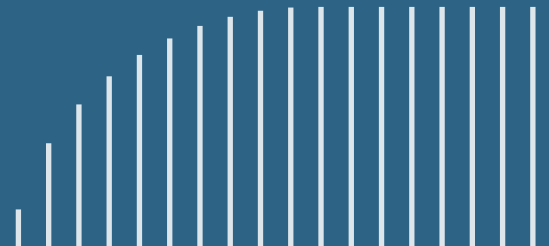
## Product Indicators

Indicadores	Unidad de Medida	Valor de Línea de Base	Meta	Medios de Verificación
<b>Objetivo de desarrollo específico 1: fortalecer el marco regulatorio y las capacidades institucionales para la gestión integral de cuencas y la implementación de soluciones basadas en la naturaleza</b>				
<p><b>Policies: Number of specific plans and/or strategies elaborated and/or updated for the Yuna Watershed.</b></p> <p>= (NPC core 4)</p>	(USD)	0	<p>Management Plans: 8</p> <p>Sectoral Development Strategies: 2</p> <p>Action Plans or similar instruments: 1</p> <p>Management Plans, Strategies and Action Plans under a gender and diversity-based approach: 8</p>	<ul style="list-style-type: none"> <li>Documents of Management Plans elaborated and/or updated.</li> <li>Documents of elaborated Strategies for the development of the watershed and/or its prioritized economic activities.</li> <li>Action Plans elaborated.</li> <li>Number of Management Plans, Strategies and Action Plans under a gender and diversity-based approach.</li> </ul>

## Co-Benefit Indicators

Indicadores	Unidad de Medida	Valor de Línea de Base	Meta	Medios de Verificación
<b>Objetivo de desarrollo específico 1: fortalecer el marco regulatorio y las capacidades institucionales para la gestión integral de cuencas y la implementación de soluciones basadas en la naturaleza</b>				
<p><b>Growth in income generated from the valorization of protected areas.</b></p> <p>= (NPC Co-Benefit 1)</p>	%	0	3%	<ul style="list-style-type: none"> <li>Records of entrance fees per visitor to protected areas where the project has invested resources.</li> </ul>

# ANNEXES



## **ANNEX A. SUMMARY OF THE POLITICAL AND LEGAL FRAMEWORK ON THE ISSUE OF CLIMATE CHANGE<sup>1</sup>**

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The importance of climate change in the politics of the Dominican Republic is clearly established in article 194 of the Constitution of the Republic. Said article states that the State has as a priority the creation and execution of territorial planning, through a law, with the purpose of ensuring the efficient and sustainable use of the country's natural resources, in accordance with the need for adaptation to climate change. In this way, the Dominican Republic acknowledges the relevance of climate change being included as a transversal axis throughout the country's politics, at different scales.

### **Key Policies and Instruments on Climate Change**

Based on this premise, the fundamental elements of the policy framework related to climate change in the Dominican Republic, both before and after the approval of the 2010 Constitution, can be summarized as follows:

- Resolution No. 182-98, which approves the United Nations Framework Convention on Climate Change, signed on May 9, 1992, between the United Nations (UN) and its Member States.
- Law 64-00, General Law on the Environment and Natural Resources. In addition, it establishes the Ministry of Environment and Natural Resources (MMARN, for its acronym in Spanish) as the governing body for environmental policy and the management of natural resources at the national level.
- Law 57-07, on Incentives for the Development of Renewable Energy Sources and their Special Regimes.
- Decree 601-08, which establishes and identifies the functions of the National Council on Climate Change and Clean Development Mechanism (NCCCDM). The NCCCDM has the responsibility of devising, planning and implementing public policies to prevent and mitigate Greenhouse Gas (GHG) emissions, adapt to the negative impacts of climate change, and promote climate action initiatives and strategies. These actions are aligned with the international commitments of the Dominican Republic before the United Nations Framework Convention on Climate Change (UNFCCC).
- Law 1-12, National Development Strategy of the Dominican Republic 2030 (NDS), which guides the work of the public sector in terms of regulation, promotion and production of goods and services. This law also seeks to generate synergies between government and private initiatives to achieve the nation's long-term objectives and goals.
- Law 253-12, on Strengthening the Collection Capacity of the State for Fiscal Sustainability

<sup>1</sup> Michela Izzo, 2023. Recolección, sistematización y análisis de información existente sobre las amenazas, la exposición y la vulnerabilidad en la Cuenca del Yuna ante el cambio climático. Banco Interamericano de Desarrollo, página 45.

and Sustainable Development, which, in article 16, establishes that “at the time of registration, motor vehicles will be taxed according to their CO2 emissions per kilometer.”

- Decree 278-13, updated by Decree 269-15, which establishes the National Policy on Climate Change (PNCC, for its acronym in Spanish). This policy aims to address climate variability linked, directly or indirectly, to human activity and its effects on the country's population and territory. The PNCC seeks to implement strategies, plans and projects at the national level, in accordance with the provisions of the UNFCCC. It is established that the Ministry of Economy, Planning and Development (MEPyD, for its acronym in Spanish), the Ministry of Environment and Natural Resources, and the NCCCDM must include mitigation and adaptation measures in all government policies and programs.
- Decree 23-16, which creates the High Level Inter-Institutional Commission for Sustainable Development, whose mandate is to “chart the route for an effective implementation of the Agenda for Sustainable Development,” so that all public policy governing or executing entities have a guide in this regard, in line with the NDS.
- Resolution 122-17, which approves the Paris Agreement signed by the Dominican Republic on April 22, 2016, adopted in Paris on December 12, 2015.
- Decree 541-20, which establishes the Dominican Republic's National System for Measurement, Reporting and Verification (MRV) of Greenhouse Gases (GHG). The

purpose of this system is to record GHG emissions and undertake mitigation actions to secure financing to promote initiatives related to climate change. An additional value of the decree is having detailed the responsibilities of each sector.

- Law 368-22, Law on Territorial Planning, Land Use and Human Settlements. It creates the National Territorial Information System.
- Decree 65-23, which establishes the Regulations for the Application of Law 57-07, on Incentives for the Development of Renewable Energy Sources and their Special Regimes.

Based on this legal framework, the country has been going through numerous stages on the path of mitigation and adaptation to climate change, of which the main ones are the following:

- 2004, publication of the First National Communication.
- 2008, publication of the National Adaptation Plan (NAP), which in 2017 was updated to 2030 through the National Climate Change Action Plan (NCCAP).
- 2009, publication of the Second National Communication.
- 2010, elaboration of the Strategic Planning of the CNCCMDL 2010-2030.
- 2010, analysis of Investment and Financial Flows for 3 sectors: Tourism, Water and Energy.

- 2011, publication of the Climate Change Compatible Economic Development Plan 2010-2030 (DECCC Plan).
- 2011, publication of the Strategic Plan for Climate Change (PECC, for its acronym in Spanish) 2011-2030.
- 2012, publication of National Education and Capacity Building Strategy (2012-2030).
- 2013, Analysis of Barriers and Opportunities for Climate Financing in the Dominican Republic.
- 2015, publication of the Intended Nationally Determined Contribution (INDC-DR).
- 2018, publication of the Third National Communication.
- 2018, publication of the Gender and Climate Change Action Plan (PAGCC-RD, for its acronym in Spanish).
- 2018, elaboration of the Roadmap for the elaboration of the National Climate Change Capacity Building Strategy begins; it is still in process.
- 2020, publication of the Dominican Republic First Biennial Update Report (fBUR) to the United Nations Framework Convention on Climate Change.
- 2020, publication of the review and modification of the Nationally Determined Contribution (NDC).
- 2023, discussion and approval of the Water Pact 2021-2036, promoted as an instrument of intersectoral consensus for water governance in the country. The natural goal is for the

commitments assumed by the parties to be specified in the Water Law, currently under discussion in the National Congress.

## Foresight of Policy Instruments

The draft Laws on Climate Change and Energy Efficiency are currently under discussion. It is important to highlight the current policy of the Dominican Government aimed at producing quality territorial information and improving access to it, with special focus on strengthening the country's hydrometeorological networks. In this regard, reference should be made to the recently concluded study on "Generation and management of hydrometeorological data and climate change scenarios in the Dominican Republic" (Guakía Ambiente, 2023), a product of the joint action of the National Institute of Hydraulic Resources (INDRHI, for its acronym in Spanish), the National Meteorological Office (ONAMET, for its acronym in Spanish), the Ministry of Economy, Planning and Development (MEPyD), and the Ministry of Environment and Natural Resources (MMARN), among other public institutions, under the coordination of the Presidency of the Republic and the National Council on Climate Change and Clean Development Mechanism (NCCCDM), with the support of the Inter-American Development Bank (IDB).

Furthermore, it is relevant to mention the intersectoral and inter-institutional dialogue carried out within the scope of the Learning-by-Doing project, financed by the International Climate Initiative (IKI, for its acronym in German), where a discussion space was created aimed at defining a country vision for 2050, in which it will be possible to combine the aspiration of the Dominican people for a "good life" with an adequate response to climate change, in terms of both mitigation and adaptation.

Finally, among the interventions that are being carried out in the watershed, it is important to highlight a project supported by the World Bank (WB), with resources from the Global Environment Facility (GEF), and another initiative supported by the Inter-American Development Bank (IDB). The first is focused on integrated landscape management for Land Degradation Neutrality (LDN) and biodiversity conservation. The second is aimed at generating a change in land use and the productive model in the watershed, so that they are more sustainable.

Based on these premises and the lessons learned from initiatives already implemented, the key actions for an effective response strategy to climate change in the country must begin with an internalization, at all levels of society, of the risks of inaction, so that the short-term perspective is replaced, and a medium and long-term planning process is catalyzed, based on adaptation to climate change. Here, the private sector plays a very important role.

Under this vision, it is essential that a comprehensive vision of the territory and its development be applied, integrating different sectors and thematic areas, based on the definition of the common objective constituted by the reduction of the risks of loss and damage associated with climate change. Among the sectors that must necessarily be taken into account is the management of solid, liquid and gaseous waste and residues.

### **Interinstitutional Coordination and Instruments**

Among the public institutions that need to be empowered by climate policy is the Ministry of Agriculture, which must direct its actions

to promote the adaptation of crops and production practices to the projected climatic conditions, ensuring that, on the one hand, the negative impacts of the sector on the climate are mitigated and, on the other, that the risk of loss and damage associated with global warming and climate change is reduced. This is especially relevant in a watershed like the Yuna River, highly productive and, at the same time, critically impacted by agricultural activity. In this regard, as a replicable and scalable intervention, the Villa Poppy project can be noted, where, through the Supérate Program of the Presidency of the Republic, in search of the sustainable development of vulnerable populations relocated from lands included in the Juan Bautista Pérez Rancier National Park (Valle Nuevo), climate-smart agriculture concepts are being applied.

### **Instruments Relevant to the Yuna Watershed**

The Yuna River Watershed presents a very dynamic social context, which has been developing specific peculiarities depending on the diversity of the territory. At the same time, the wealth of natural resources with high economic value has generated conflicts of use that expose the watershed's ecosystems and their services to significant threats, exacerbated by deficiencies in planning or, frequently, in the application of the management tools developed.

**Table 1 / Main policy instruments linked to mitigation and adaptation**

Instrument	Description	Sector / Function	Mitigation	Adaptation
Decree 379-23	Creates the Cabinet to Fight Sargassum	Coastal - Marine		✓
Law 368-22	Territorial Planning, Land Use and Human Settlements Law; creates the National Territorial Information System	Territory	✓	✓
Law 225-20	Law on Management and Co-processing of Solid Waste	Waste	✓	✓
Law 94-20	Law on Environmental Education and Communication	Education		✓
Law 47-20	Public-Private Partnerships Law	Financing	✓	✓
Law 57-18	Forestry Law of the Dominican Republic	Forest	✓	✓
Law 44-18	Payment for Environmental Services Law	Natural Resources		✓
Law 63-17	Mobility, Land Transportation, Traffic and Road Safety Law	Transport	✓	✓
Law 589-16	Law on Food and Nutrition Security and Sovereignty (SSAN Law)	Agriculture, Health, Food Security		✓
Law 333-15	Sectoral Law on Biodiversity	Biodiversity		✓
Law 219-15	About Biotechnology Safety	Biotechnology		✓
Law 126-15	Transforms the Banco Nacional de Fomento de la Vivienda y la Producción (BNV, for its acronym in Spanish) into the Banco Nacional de las Exportaciones (BANDEX, for its acronym in Spanish)	Financing	✓	✓
Decree 360-15	Member of the National Commission to Grant Licenses for Refrigeration and Air Conditioning Technicians (CONALTRAA, for its acronym in Spanish)	Industrial Gases	✓	
Law 208-14	Creates the National Geographic Institute "José Joaquín Hungary Morell"	Information		✓
Decree 337-13	Creates the National Network for Cleaner Production and Efficient and Sustainable Use of Resources	Production		✓
Decreto 337-13	Crea la Red Nacional de Producción más Limpia	Producción	✓	
Law 103-13	Law on Incentive for the Importation of Non-Conventional Energy Vehicles	Transport	✓	
Decree 364-12	Creates the National School of Disaster Risk Management	Education		✓
Law 176-07	Law of the National District and Municipalities	Territory	✓	✓
Law 57-07	AI Incentive Law for the Development of Renewable Energy Sources and their Special Regimes	Energy	✓	

Source: ENERGEIA et al., 2021 - MODIFIED)

Over the years, as a result of the support of numerous international cooperation agencies, management plans have been developed at the local level, with the purpose of achieving the general goals established by national planning instruments. However, it should be noted that there is often a lack of a common thread that unites specific planning with each other, under a coherent framework at the watershed level. The following can be mentioned among the tools available:

- The Conservation Plan of the Bajo Yuna Mangrove National Park (CEBSE & TNC, 2012).
- Specific studies on good management practices, such as: The intervention model implemented by the Center for the Conservation and Ecological Development of the Bay of Samaná and its Surroundings (CEBSE, for its acronym in Spanish) and other entities in the Bay of Samaná (Jorge, 1997); nature-based adaptation solutions, highlighted as an instrument to reduce the impact of floods (Van der Borgh et al., 2020); among other.

Indirectly, the Adaptation Measures Plan of the municipality of Las Terrenas (ICMA et al., 2017) can be taken as a reference, which contains the plan with the measures for adaptation to climate change of the municipality of Las Terrenas,

based on the vulnerabilities to climate change identified in previous studies. Although the municipality of Las Terrenas is outside the Yuna River Watershed, it has certain characteristics in common with its coastal environments, and can therefore be taken into account for the development of planning instruments in those areas.

Likewise, it is appropriate to refer to the analysis of GHG emissions and sinks prepared for the province of Samaná (Herrera Moreno & Betancourt, 2013), to obtain a baseline on the main sources of GHG and, subsequently, expand the information to the other provinces of the watershed and update it.

## Investment Plan Approach

Based on the legal framework and public policy instruments on climate change available in the Dominican Republic, as well as the challenges faced by the Yuna Watershed for the adaptive management of its ecosystems in a context of climatic and environmental stress, the Investment Plan hopes to be a contribution to the improvement of capabilities and sustainability indicators that contribute to the resilience of the watershed given its strategic importance in the entire Dominican economy.

<sup>2</sup> Jorge MA (1997) Developing capacity for coastal management in the absence of the government: a case study in the Dominican Republic. *Ocean and Coastal Management*, 36(1-3), 47-72. [https://doi.org/10.1016/S0964-5691\(97\)00017-3](https://doi.org/10.1016/S0964-5691(97)00017-3)

<sup>3</sup> Van der Borgh R, Cruz-Rodríguez A, Alatorre JE (2020) Cambio climático y adaptación basada en la naturaleza: el potencial de la cobertura boscosa para reducir el impacto económico de las inundaciones en la República Dominicana. Documentos de Proyectos (LC/TS.2020/111), Comisión Económica para América Latina y el Caribe (CEPAL). Santiago, Chile. 39pp.

<sup>4</sup> ICMA, ICF, FEDOMU, AMLT (2017) Plan de medidas de adaptación del municipio de Las Terrenas en el marco de los Planes de Desarrollo y Ordenamiento Territorial. Asociación Internacional para la Gestión de Ciudades y Municipios, ICF Internacional, Federación Dominicana de Municipios, Ayuntamiento Municipal de Las Terrenas. Programa de Planificación para la Adaptación Climática de la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID), Santo Domingo.

<sup>5</sup> Herrera Moreno A, Betancourt L (2013) Datos y escenarios climáticos, emisiones de GEI y opciones de mitigación para la Provincia Samaná,

## ANNEX B. ASSESSMENT OF THE COUNTRY'S ABSORPTION CAPACITY

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### Introduction

The Dominican Republic exhibits a robust absorption capacity supported by a solid macroeconomic context and a legal and regulatory framework that is constantly being strengthened. Despite challenges, such as the Covid-19 pandemic and inflationary pressures, the country has maintained remarkable economic growth, seeing significant growth in the tourism and agricultural sector, supported by effective government policies and strategic investment.

The legal and regulatory framework has experienced significant improvements, promoting competition, attracting foreign investment and strengthening economic stability. The country's technical and management capacity is supported by the existence of government agencies dedicated to sustainable resource management such as the Ministry of Environment and Natural Resources, as well as active collaboration with entities such as the Banco Agrícola and the Ministry of Agriculture.

The management of risks identified for this Investment Plan is addressed through the implementation of solid protocols, a clear organizational structure, exhaustive environmental assessments and a participatory work strategy with the community and all interested parties. These strategies not only reduce the identified risks, but also strengthen

the resilience of the project and ensure its long-term sustainability. Transparency and good governance are prioritized to ensure proper use of funds and accountability. The active participation of all interested parties is promoted, and binding agreements are established to guarantee the continuity of the project.

International cooperation also plays a fundamental role, ensuring the alignment of activities with other initiatives in the watershed and facilitating coordination with key funders.

### Macroeconomic Context <sup>6 7 8</sup>

The Dominican Republic (DR), between 2013 and 2022, recorded an average annual economic growth of 5.3%, where inflation has remained at a controlled pace within the target range of 4%+/-1% established by the Central Bank of the Dominican Republic (BCRD, for its acronym in Spanish). By 2023, it is estimated that the growth of economic activity will have been around 2.5% in real terms, due to the effects of the restrictive monetary policy that allowed inflation to be lowered from 9.5% in May 2022 to 4.4% in May 2023, and 3.6% in December 2023. The construction and "transport and storage" sectors (14.3% and 8.7% of GDP respectively during January-September 2023) are of great contribution in terms of production and employment, as a transversal axis of all socioeconomic activities and with a high impact

<sup>6</sup> MEPyD 2022, Análisis del desempeño económico y social de república dominicana 2022. <https://mepyd.gob.do/analisis-del-desempeno-economico-y-social-2022>

<sup>7</sup> MEPyD 2023, Informe de situación macroeconómica – Seguimiento de coyuntura octubre 2023. <https://mepyd.gob.do/publicacion/informe-de-situacion-macroeconomica-seguimiento-de-coyuntura-octubre-2023/>

<sup>8</sup> BCRD 2023, Informe de Estabilidad Financiera septiembre 2023. <https://www.bancentral.gov.do/a/d/5811-bcrd-publica-los-informes-de-estabilidad-financiera-de-2022-y-septiembre-2023>

on productivity and competitiveness indicators.

The activity of the tourism sector and other services stands out, which registered a positive variation of 24.0% at the end of 2022. This increase was mainly attributed to the 43.4% annual increase in the number of foreign visitors who arrived in the country by air, reaching a historical record of 7.2 million.

Like other economic activities in the region, the productive activities of the Dominican economy have slowed down in 2023 due to various factors, such as the delayed effects of the pandemic, the conflict between Russia and Ukraine, and the impact of climate change. These elements, along with more restrictive monetary policies to control inflation, have influenced the economic slowdown.

To counter inflationary pressures, the Central Bank of the Dominican Republic gradually increased the monetary policy rate (MPR) in a cycle that lasted twelve months, raising it from 3.0% in November 2021 to 8.5% in November 2022. However, this measure was paused in November 2022, while year-on-year inflation remained within the target range of 4.0% ± 1.0%, decreasing from 9.64% in April 2022 to 4.43% in September 2023. The convergence of inflation to the target range has allowed measures to be implemented to revitalize productive activities.

During 2022, the macroeconomic environment of the Dominican Republic played an important role in attracting foreign investment flows. Despite inflationary pressures, it maintained conditions of stability that allowed investor decisions to favor the growth of both Foreign Direct Investment (FDI) (US\$ 813.6 million), as well as portfolio investment (US\$ 1,199.6 million). In the labor market, a historic increase in total employment was recorded with 4.9 million workers in the third quarter of 2023, reflecting

the creation of 222,497 jobs with a year-on-year increase of 4.8%.

The agricultural sector has experienced a positive growth of 5.0%, exceeding the growth level of 2021 (2.6%). This growth is attributed to the increase in the agriculture (6.1%) and livestock, forestry and fishing (3.2%) subsectors. The growth of the agricultural subsector was driven by an increase in production volumes of a variety of products, mainly tomatoes with a year-on-year increase of 19.0%, higher by 13.7 p.p. compared to what was recorded in 2021. The year-on-year increase in coffee (13.1%) and cocoa (10.3%) stands out.

In total, at the end of 2022 and according to data from the Central Bank of the Dominican Republic (BCRD), Banco Agrícola disbursed resources of RD\$ 21,652.3 million, allocated to agriculture, while \$5,770.2 million to livestock, forestry and fishing. To reach the production levels achieved in the agricultural sector, government assistance was essential, allocating significant resources to agriculture and livestock, supporting production through various government initiatives that include the preparation and titling of land, distribution of inputs and subsidies for the provisional import of inputs required in the production process, among others. Together, these measures helped ensure price stability for agricultural products and national food security.

Despite progress, climate risks remain major challenges that could impact production and increase market volatility. The Central Bank announced a new rapid liquidity facility (FLR, for its acronym in Spanish) for RD\$25 billion to support sectors affected by extreme weather events.

Future projections indicate economic growth of around 3.0% by the end of 2023, driven by tourism and public investment. Monetary and financial

policies are aimed at keeping inflation under control, supporting a stable and sustainable economic framework. Multilateral organizations project positive and sustained economic growth for the Dominican Republic, supported by key sectors such as tourism, foreign investment and remittances.

### Legal and Regulatory Framework<sup>9</sup>

During the period 2019 and 2021, the Dominican Republic has experienced a continuous strengthening of its democracy, despite the challenges that persist in several areas. In the legal context, significant progress has been made in the regulation of political competition and the improvement of the human rights situation. Notable institutional reforms have fostered the development of a robust civil society and contributed to reducing neo-patrimonial power in business. The modernization of the judicial system and State administration has increased electoral and government credibility among the population, despite persistent challenges such as corruption, bureaucracy and price controls. The Dominican Republic has sought to foster competition and attract foreign investment through legal and political reforms. Although competition is regulated to some extent, uniform application of rules is a challenge in the market. Despite corruption remains a major obstacle to market-based competition, laws have been enacted to promote and regulate competition. In the business sphere, significant reforms have been implemented, simplifying business start-up registration and reducing minimum capital requirements. Despite efforts to reduce bureaucracy, the cost of starting a business remains medium to high. Foreign investors face challenges in some sectors, but also receive benefits in priority areas such as mining and tourism.

In the banking sector, reforms have been implemented to strengthen supervision and regulation. The Dominican banking system has demonstrated strength and has responded to the pandemic with technological investments and credit support.

Despite challenges related to corruption, poverty and inequality, as well as promoting stronger regional cooperation, the Dominican Government is committed to strengthening bilateral cooperation and jointly addressing common problems. This commitment aims to promote sustainable development and greater integration in the region. Although socio-economic challenges remain, the government's determined approach reflects a determination to overcome them and move towards a more prosperous and equitable future.

In summary, the legal and regulatory framework in the Dominican Republic has experienced continuous strengthening during the 2019-2021 period, which has contributed to the consolidation of democracy and the improvement of the human rights situation. Notable institutional reforms have created a more conducive environment for investment and business development, while strengthening government and electoral credibility. Although challenges such as corruption and bureaucracy persist, the laws and policies implemented show the government's commitment to promoting competition and attracting foreign investment. This solid and stable legal framework provides crucial support for the successful implementation of the project, providing legal certainty and an enabling environment for business activity and economic development.

<sup>9</sup> BCRD 2023. <https://www.bancentral.gov.do/a/d/5826-gobernador-valdez-albizu-informa-que-la-jm-aprobo-nueva-flr-por-rd25000-mm-para-mitigar-el-impacto-adverso-de-eventos-climaticos-extremos-y-continuar-apoyando-la-recuperacion-economica>

<sup>10</sup> [https://bti-project.org/fileadmin/api/content/en/downloads/reports/country\\_report\\_2022\\_DOM.pdf](https://bti-project.org/fileadmin/api/content/en/downloads/reports/country_report_2022_DOM.pdf)

## Technical, Management and Sustainability Capacity

The Ministry of Environment and Natural Resources (MMARN) is identified as the main executor of the project, which is governed by Law 64-00, being in charge of developing the national natural resources policy. It works in coordination with other ministries to comply with the policies and plans that promote nature-based solutions (NbS). This Ministry develops management plans for protected areas and has a draft Comprehensive Management Plan for Priority Watersheds. The Vice Ministry of Soil and Water of the Ministry works together with other projects to develop a Comprehensive Management Plan for the Yuna Watershed, demonstrating the structure, capabilities and experiences in projects with activities under the concept "From Ridge to Reef" and compatible with this Investment Plan. Despite the operational risks identified, such as the limited participation of government agents and a limited availability of qualified human resources, activities are proposed to mitigate them and attract possible partnerships with other actors and funders.

The Dominican Government has a Water Sector Cabinet, which is a space to coordinate actions for the sustainable management of water resources. In addition, the National Council on Climate Change and Clean Development Mechanism promotes policies to mitigate and adapt to climate change. The National Institute of Hydraulic Resources (INDRHI) is responsible for planning and managing water resources, and the Irrigation Boards are organizations made up of users that manage and operate irrigation systems, to improve water management and rural development in their areas of influence.

There are experiences of implementing payments for environmental services (PES) that serve as high-value starting points for the development of PES schemes in the Dominican Republic. Among them we can mention:

### **Payment for Environmental Services in the Yaque del Norte River Watershed (PSACYNA, for its acronym in Spanish).**

It was implemented as a pilot project since 2006, through the signing of an agreement between the Ministry of the Environment, the Corporation of State Electrical Companies (CDEEE, for its acronym in Spanish) and the Water Supply and Sewerage Corporation of Santiago (CORAASAN, for its acronym in Spanish). Through the agreement, direct economic contributions were received from the Dominican Hydroelectric Generation Company (EGEHID, for its acronym in Spanish) and CORAASAN, and financing from part of the project staff, as well as from reforestation brigades by the Ministry, which allow the PSACYNA activities to be financed in order to contribute to the conservation of the bodies of water of the Yaque del Norte River Watershed. Also, to contribute to the sustainability of the water resource in quality and quantity, reforestation work is carried out by hiring community brigades and direct economic payments for concept of water environmental service.

The project has benefited 44 owners and/or holders of land and covered a total of 1,942 hectares with the PES scheme, with 1,737.07 hectares in the Forest Protection modality, and 205.55 hectares in the Agroforestry Systems modality. Currently the project has not been able to be expanded due to lack of financing.

### Thrush Protection Project

This project's objective was to support the conservation of the migratory Thrush through conservation actions on the ground, which would allow the country to generate experience in the application of payment for environmental services with focuses on the protection of biodiversity in protected areas, in the areas of influence of the Loma Guaconejo and Loma Quita Espuela Scientific Reserves. Its area of influence is therefore located in the middle watershed of the Yuna.

Subsequently, a consortium of civil society entities formed a Private Protected Area (the El Zorzal Private Reserve), which seeks sustainable territorial development with the producers of the Reserve's buffer zone. This project focuses on the conversion of grasslands into forest, the productive improvement of cocoa production and an organic cocoa brand with sales to artisanal chocolate producers in Europe, the United States and Canada. The project achieves the sale of the first carbon credits with the voluntary Plan Vivo standard, under the concept of fair price in the sale of cocoa from the El Zorzal Private Reserve.

The Banco Agrícola of the Dominican Republic (BAGRICOLA, for its acronym in Spanish), created in 1945 and governed by Law 6186, is the only entity that offers financial instruments to small and medium-sized agricultural producers. Despite limitations, the IDB provides institutional strengthening through other projects to promote investments in climate adaptation and mitigation technologies.

The Ministry of Agriculture (MA) collaborates in the appropriate use and distribution of irrigation water, being a key actor due to its technical resources to implement activities that contribute to the reduction of GHG resulting from land use change and erosion. The Ministry of Tourism of the Dominican Republic (MITUR, for its acronym

in Spanish), which regulates and promotes the tourism industry, is an important manager to support the diversification and creation of alternative and sustainable livelihoods.

The collaboration and participation of multiple stakeholders in a project are essential to ensure effective and sustainable use of resources, as well as to promote the success of the stated objectives. The entities in charge of coordinating, making decisions and carrying out the execution must establish a solid interaction with the actors of civil society and the private sector, with the purpose of achieving comprehensive public management that combines efforts and allows changes to be implemented jointly and effectively.

The Dominican Government establishes in the NDC-RD 2020, measures with the purpose of mobilizing public and private investments to promote sustainable development in the Dominican Republic. The country's strategy includes the projection of mobilizing USD \$670,822,568.00 by 2030 in the water security sector, destined for investment projects that improve access to drinking water and sanitation. In addition, other initiatives such as Law 44-18 on Payments for Environmental Services, encourage the conservation of ecosystems. To promote these strategies, it is sought to actively involve civil society and the private sector, since their participation provides specialized knowledge and financial resources, enriching the planning and execution of projects. In addition, cooperation with international organizations plays a fundamental role in providing experience, technical cooperation and the financing necessary to carry out larger initiatives.

## Risk Management

Various risks have been identified that could affect execution, including financial, operational, technological, legal, environmental, social and political. To effectively address these risks, the following mitigation strategies will be implemented:

- Solid protocols will be established to safeguard the continuity of projects, ensuring efficient and transparent financial management.
- A clear organizational structure will be implemented, defining roles and responsibilities precisely.
- A comprehensive assessment of environmental risks will be carried out in all phases of the project, with continuous monitoring and tracking of impacts in the different areas of the watershed.
- A participatory work strategy will be adopted with the community and all interested parties, seeking support from public, private and non-governmental entities, and the creation of open spaces for participation in all phases of the project.

Effective implementation of these mitigation strategies will not only reduce the identified risks, but also strengthen the resilience of the project and ensure its long-term sustainability.

## Transparency and Good Governance

As part of the mitigation strategies, transparency and good governance will be prioritized to ensure the appropriate use of funds and accountability. The participation of all interested parties will be actively promoted through periodic meetings that cover all phases of the project, facilitating

its coordination and appropriation. In addition, binding agreements will be established that ensure the continuity of the project beyond political changes, reinforcing stability. Additionally, accessible and clear reports will be generated, detailing the progress and use of funds.

## International Cooperation

There are other parallel loans that support the efficient execution of the resources of the Climate Investment Funds of the Nature, People and Climate Program (CIF-NPC), which demonstrates a comprehensive commitment to sustainable development and climate change mitigation in the Dominican Republic.

The alignment of project activities with other initiatives in the watershed is detailed in Chapters IV and V. This approach ensures efficient targeting of resources and coordination with key funders, such as the World Bank, GEF, IDB-Lab and IDB Invest.

The Dominican Republic has positive experience in the execution of loans financed by institutions such as the IDB and the World Bank, which confirms the country's ability to successfully implement projects and ensure tangible results in terms of economic and social development.

## **ANNEX C.**

### **CONSULTATIONS WITH INTERESTED PARTIES**

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The CIF-NPC Investment Plan of the Dominican Republic is the result of a consultative process, led by the Government of the Dominican Republic through the Ministry of the Environment and the National Council on Climate Change and Clean Development Mechanism, to identify and prioritize lines of action in which financial support mechanisms are required to guarantee comprehensive management of the Yuna Watershed with a “From Ridge to Reef” approach. This plan is conceived as an important instrument to support the country to advance in strengthening climate resilience and sustainable socioeconomic development in the Yuna Watershed, based on the conservation and preservation of its natural resources and the integrated management of the natural environment and the use of nature-based solutions.

The consultation process carried out included government institutions, consultants and technical experts in the thematic areas studied to prepare this IP, representatives of the private sector, academia and international cooperation development partners.

Throughout the elaboration of the Investment Plan, 3 main missions were carried out: The first of which, the Exploration Mission, was carried out in March 2023 and was used to initiate conversations with different levels of

government and relevant stakeholders. Based on these discussions, the main strategic issues were identified that should be studied and considered for their potential to be included in this plan. The participants in these discussions are listed in Table 1.

The second scenario, Joint Mission #1, was carried out in November 2023, in which the MDBs, government institutions related to the Yuna Watershed and the suggested investment activities and consultants hired to carry out studies and research on the watershed. As a result, the general objective and specific objectives, as well as the investment components of this IP were agreed. Table 2 lists the participants of the different meetings held during that Mission.

The third scenario, Joint Mission #2, was carried out in March 2024, in which the MDBs were invited to participate, as well as government institutions related to the Yuna Watershed and the suggested investment activities. In this Mission, the actors present agreed on the activities to be financed under each component and the estimated budget for each of them. Table 3 lists the participants of the different meetings held during that Mission.

**Table 1 / List of participants of the Scoping Mission, held on March 27-30, 2023****Scoping Mission (March 27-30, 2023)**

<b>Government</b>	
National Council on Climate Change and Clean Development Mechanism	Max Puig
National Council on Climate Change and Clean Development Mechanism	Rodrigo Fincheira
National Council on Climate Change and Clean Development Mechanism	José Baez
National Council on Climate Change and Clean Development Mechanism	Rosalía Duval
National Council on Climate Change and Clean Development Mechanism	Jahndery Muñoz
National Council on Climate Change and Clean Development Mechanism	Domingo Burgos
National Council on Climate Change and Clean Development Mechanism	Yralissa Díaz
Ministry of Environment and Natural Resources (MMARN)	René Mateo
Ministry of Environment and Natural Resources (MMARN)	Elpidio Tineo
Ministry of Environment and Natural Resources (MMARN)	Otto Cordero
Ministry of Environment and Natural Resources (MMARN)	Ruben Mesa
Ministry of Environment and Natural Resources (MMARN)	Sol Teresa Paredes
Ministry of Environment and Natural Resources (MMARN)	Jose Enrique Baez
Ministry of Agriculture	Darío Vargas
Ministry of Agriculture	Osterman Ramírez
Indocafé	Leonidas Batista
Bio Arroz	Cristino Durán
Supérate	Arturo Bisonó
UTEFDA	Carmen Cordero
<b>MDBs</b>	
Inter-American Development Bank (IDB)	Katharina Olmedo
Inter-American Development Bank (IDB)	Gisela Ferrari
Inter-American Development Bank (IDB)	Gilles Damais
Inter-American Development Bank (IDB)	Luis de los Santos
Inter-American Development Bank (IDB)	Gloria Visconti
Inter-American Development Bank (IDB)	Benoit Lefevre
Inter-American Development Bank (IDB)	Elia Martinez
Inter-American Development Bank (IDB)	Anabella Palacios
IDB Lab	Smeldy Rufino
IDB Invest	Mauricio Ayala
World Bank (WB)	Alexandria Valerio
World Bank (WB)	David Treguer
International Finance Corporation (IFC)	Tendai Madenyika
International Finance Corporation (IFC)	Takiyah Defour
International Finance Corporation (IFC)	Sofía Bufaliza
Climate Investment Funds (CIF)	Paul Hartman
Climate Investment Funds (CIF)	Zihong Zang
<b>Other Organizations</b>	
CEBSE	Patricia Lamelas
FUNDEMAR	Aldo Croquer
FUNDEMAR	Rita Sellares
The Nature Conservancy (TNC)	Carlos García
The Nature Conservancy (TNC)	Francisco Nuñez
Barrick Gold Pueblo Viejo	Pilar Calderón
Barrick Gold Pueblo Viejo	Hilario Velasquez
World Food Program	Emilie Amri
World Food Program	Elihard Molina
Fundación Popular	Elías Dinzey
United Nations Development Program	Pierre Candelon

**Table 2 / List of participants of Joint Mission #1, held on November 14-16, 2023****Joint Mission #1 (November 14-16, 2023)**

<b>Organization</b>	<b>Name</b>
National Council on Climate Change and Clean Development Mechanism	Rodrigo Fincheira
Ministry of Environment and Natural Resources (MMARN)	Lemuel Familia
Ministry of Environment and Natural Resources (MMARN)	Grisel De Oleo
Ministry of Environment and Natural Resources (MMARN)	Otto Cordero
Ministry of Environment and Natural Resources (MMARN)	Aura Santana
Ministry of Environment and Natural Resources (MMARN)	Francisco G. Garcia
Ministry of Environment and Natural Resources (MMARN)	Máximo Viñas
Ministry of Environment and Natural Resources (MMARN)	Sol Teresa Paredes
Ministry of Environment and Natural Resources (MMARN)	Jose Enrique Baez
Dominican Council of Fisheries and Aquaculture (CODOPESCA)	Tasis Alcantara Virtual
Dominican Council of Fisheries and Aquaculture (CODOPESCA)	Angel Luis Franco
National Council for Climate Change	Rodrigo Fincheira
Inter-American Development Bank (IDB)	Gisela Ferrari
Inter-American Development Bank (IDB)	Gilles Damais
Inter-American Development Bank (IDB)	Luis de los Santos
Inter-American Development Bank (IDB)	Gloria Visconti
Inter-American Development Bank (IDB)	Benoit Lefevre
Inter-American Development Bank (IDB)	Elia Martinez Virtual
Inter-American Development Bank (IDB)	Anabella Palacios
IDB Lab	Smeldy Rufino
IDB Lab	Maricelle León Coto
IDB Invest	Mauricio Ayala
World Bank (WB)	María Vizeu
World Bank (WB)	David Treguer
World Bank (WB)	Nicholas Menzies Virtual
World Bank (WB)	Dora Andrade Virtual
World Bank (WB)	Amita Ramachandran
International Finance Corporation (IFC)	Tendai Madenyika
International Finance Corporation (IFC)	Camila Goris
Climate Investment Funds (CIF)	Paul Hartman
Climate Investment Funds (CIF)	Farah Outeldait
<b>Consultants</b>	
Consultant	Víctor Gómez Valenzuela
Consultant	Michela Izzo
Consultant	Lourdes Russa
HIDRIA	Lisette Gil
HIDRIA	Daza García
IDOM	Jose Alberto Gaona
INSUCO	Gisele Deño
INSUCO	Maura Martinez
INSUCO	Jose Gomez

**Table 3 / List of participants of Joint Mission #2, held on March 19 and 20, 2024****Joint Mission #2 (March 19 And 20, 2024)**

<b>Organization</b>	<b>Name</b>	
National Council on Climate Change and Clean Development Mechanism	Rodrigo Fincheira	
Ministry of Environment and Natural Resources (MMARN)	Carolina Alba	
Ministry of Environment and Natural Resources (MMARN)	Otto Cordero	
Ministry of Environment and Natural Resources (MMARN)	Betsaida Cabrera	
Ministry of Environment and Natural Resources (MMARN)	Máximo Viñas	
Ministry of Environment and Natural Resources (MMARN)	Sol Teresa Paredes	
Ministry of Environment and Natural Resources (MMARN)	Jose Enrique Baez	
Ministry of Environment and Natural Resources (MMARN)	Tarsis Alcantara	
Dominican Council of Fisheries and Aquaculture (CODOPESCA)	Jesús Galán	Virtual
Dominican Council of Fisheries and Aquaculture (CODOPESCA)		Virtual
Inter-American Development Bank (IDB)	Gisela Ferrari	
Inter-American Development Bank (IDB)	Gilles Damais	Virtual
Inter-American Development Bank (IDB)	Luis de los Santos	Virtual
Inter-American Development Bank (IDB)	Gloria Visconti	
Inter-American Development Bank (IDB)	Benoit Lefevre	
Inter-American Development Bank (IDB)	Elia Martinez	
Inter-American Development Bank (IDB)	Anabella Palacios	
IDB Lab	Smeldy Rufino	
IDB Lab	Maricelle León Coto	
IDB Invest	Mauricio Ayala	Virtual
World Bank (WB)	David Treguer	Virtual
World Bank (WB)	Nicholas Menzies	Virtual
International Finance Corporation (IFC)	Tendai Madenyika	
International Finance Corporation (IFC)	Faxharah Ramirez	
Climate Investment Funds (CIF)	Paul Hartman	
Climate Investment Funds (CIF)	Pauline Ariane Ravillard	
Climate Investment Funds (CIF)	Matthew William Harris	
Climate Investment Funds (CIF)	Alfredo Villavicencio	
<b>Consultants</b>		
Fundación Plenitud	Laura Rathe	Virtual
Fundación Plenitud	Letty Melgen	Virtual
CIPAV	Lina Giraldo	Virtual
CIPAV	Jhon Jairo Lopez	
HIDRIA	Lisette Gil	Virtual
HIDRIA	Daza García	Virtual
IDOM	Jose Alberto Gaona	Virtual

Throughout the process of preparing the Investment Plan, multiple meetings, dialogues and participatory workshops were also held between representatives of the MDBs, government institutions and possible implementing entities (IEs), relevant actors in the watershed, women's groups, and representatives of minorities, with the aim of addressing issues relevant to the plan, among which the issue of nature-based solutions was prioritized, as well as the issue of gender inclusion and diversity. In addition, consultations were held with representatives of the public, private and financial sectors to identify the main barriers that women currently face in the Yuna region and to identify solutions that can be implemented in the short, medium or long term to close the existing gaps, as presented in greater detail later in this same annex.

Finally, the draft Investment Plan was published for comments on the Ministry of Environment

website on March 27, 2024. It was also assessed by an independent expert who issued comments and recommendations.

**Figure 1 / Publication of the draft IP for the CIF-NPC on the web portal of the Ministry of Environment and Natural Resources**



All comments received from relevant stakeholders, associations and the general public were considered for the final round of review the document underwent, leading to this final version.



### A QUIEN PUEDA INTERESAR

Por medio de la presente hacemos constar, que El Plan de Inversión "From Ridge to Reef" para la Cuenca de Yuna se mantuvo en consulta pública desde el 27 de marzo al 11 de abril del 2024, que incluyó la publicación en la página institucional [www.ambiente.gob.do](http://www.ambiente.gob.do), mediante el Banner fijo en la portada de la página, así como en transparencia/consultas-publicas-abiertas.

Conforme a lo anterior, certificamos que no fueron presentadas observaciones, comentarios o propuestas de mejoras al proyecto socializado.

Dada en Santo Domingo, D. N., Capital de la República Dominicana, a los 12 días del mes de abril del año dos mil veinticuatro (2024).

Atentamente,

  
**Dahiana Goris**  
Directora de Regulaciones Ambientales  
DG



## Inclusive Consultations with Stakeholders on Gender and Diversity Issues

A descriptive analysis of the main socioeconomic and demographic variables of the provinces that make up the Yuna River Watershed is presented below. The objective is to locate and measure the levels of vulnerability of the populations that live in this area and identify lines of action in the interventions to be carried out in the watershed. Limits are noted for some variables in the availability of data at the level of geographical and temporal disaggregation.

### Female Political Participation

As of February 2024, the political participation of the female population is low. At the local government level, only 2 of the 29 municipalities are headed by women (Monte Plata and Salcedo). Likewise, in the council offices, only 26.9% of these positions are occupied by women, that is, for every 5 men, a woman is a council member in the municipalities of the watershed. The relationship is similar for the legislative sphere, of 49 representatives in the lower chamber, which corresponds to the provinces analyzed, only 9 are women (18.4%) and in the senate their participation is non-existent.

The panorama of low female representation in elective positions is similar to the national generality. The percentage of women in the ministries, lower and upper chambers does not reach 30%, respectively it is 8.6%, 24.7%, and 12.5%. These data suggest –and studies on the subject confirm– the presence of barriers to

women's participation in politics and decision-making, and they highlight the imaginaries that prevail about their role in positions of power.



<sup>11</sup> Al momento de redactar este informe el país celebra los comicios a nivel municipal, congresual y presidencial.

<sup>12</sup> Ver detalle tabla anexa.

<sup>13</sup> Datos a febrero 2024.

Datos a febrero 2024.

<sup>15</sup> Programa de las Naciones Unidas. Más Mujeres, Más Democracia: Desafíos para la Igualdad de Género en la Política, 2018. Ver en línea en: <https://www.undp.org/es/dominican-republic/publications/m%C3%A1s-mujeres-m%C3%A1s-democracia-desaf%C3%ADos-para-la-igualdad-de-g%C3%A9nero-en-la-pol%C3%ADtica>

## Participation of Women in Productive Sectors

Regarding the economic relevance of the territories, of the 5 regions that make up the watershed, Cibao Norte, Valdesia and Cibao Sur stand out. The average participation of these three regions in national production between the period 2015-2022, is 15.3%, 8.8% and 8.1%, respectively. The main productive activities in terms of added value in each of the regions are the agricultural sector in Cibao Sur, Cibao Nordeste and Higuamo, and in regards to manufacturing, Cibao Norte and Valdesia. It is worth noting that for those regions in which 80% of the watershed extends (Cibao Sur and Nordeste), trade represents the second most important productive activity.

Regarding the participation of women in the generation of market goods and services, as of February 2024 there is an absence of data in the official statistics on the labor market at the territorial level and by sex, and particularly in the activities that the watershed contributes significantly to. In general, both at the national level and in the territorial area that covers the watershed, there is a significant employment gap between the male and female population. According to data from the 2022 Household Survey, the difference in the employment rate between the male and female population is 20.3 percentage points. That is, for every 10 men of working age, 7 are employed, whereas the ratio for women is 5 out of 10 (Table 4).

**Table 4 / Occupancy rate. Disaggregation by sex and planning regions. Plenitud Foundation, 2024**

Employment Rate Disaggregation by Sex			
Regions	Occupancy Rate		
	Total	Male	Female
<b>Cibao Norte</b>	63.3	72.6	54.0
<b>Cibao Sur</b>	57.6	73.3	41.6
<b>Cibao Nordeste</b>	59.0	72.0	46.3
<b>Valdesia</b>	56.6	68.3	45.3
<b>Higuamo</b>	58.3	70.4	47.1
<b>Total, country</b>	60.6	70.9	50.6

*Prepared from the General Report ENHOGAR 2022, ONE, table 41, p.102*

<sup>15</sup> Programa de las Naciones Unidas. Más Mujeres, Más Democracia: Desafíos para la Igualdad de Género en la Política, 2018. Ver en línea en: <https://www.undp.org/es/dominican-republic/publications/m%C3%A1s-mujeres-m%C3%A1s-democracia-desaf%C3%ADos-para-la-igualdad-de-g%C3%A9nero-en-la-pol%C3%ADtica>

<sup>16</sup> La Encuesta Nacional Continua de Fuerza de Trabajo (ENCFT) no permite analizar tasa de desocupados u ocupados por región, actividad y sexo. Además, el nivel de desagregación territorial solo alcanza a las macroregiones.

<sup>17</sup> La lista de actividades principales, según Izzo M, son agricultura, minería, ganadería, generación hidroeléctrica y turismo. Ver Guakía Ambiente. Sistematización...pág. 27

<sup>18</sup> ENHOGAR 2022 Informe general. Cuadro 41. REPÚBLICA DOMINICANA: Tasa de ocupación de la población de 10 años y más, por sexo, según características geográficas, demográficas y sociodemográficas.

The gap in the employment rate becomes significantly larger for the Cibao Sur and Cibao Northeast regions where the differences between male and female employment rates are 31.7 and 25.7 percentage points respectively. In Cibao Sur, a region with the highest income per population and in which the provinces of Monseñor Nouel, Sánchez Ramírez and La Vega are located –which represent 60% of the Watershed area– the employment rate of the female population is one of the lowest among the analyzed regions(41.6%).

Likewise, in activities such as , trade and industry –including manufacturing and mining– which represent important economic sectors in the regions of the Watershed, 40.3% and 31.7%, respectively, of the total number of people

employed in these activities are women. In case of traditional sectors, the gap is wider. Specifically, in agricultural and livestock activities, female labor participation at the national level, is significantly low, representing just 7.5%.

The results of the 2015 National Agricultural Precensus characterize the gaps in this sector in greater detail: of the total agricultural producer population, the male population is 83.7% while only 16.3% is female. The provinces of Monte Plata, Duarte and Hermanas Mirabal have a relatively greater presence of women in these activities, a little more than 20% (see Table 5). On the other hand, San José de Ocoa and La Vega have the lowest proportion of the female population among the total producers, being less than 7%.

**Table 5 / Agricultural producers (individuals), by sex of producer, region and province**

<b>Desagregación por sexo y regiones de planificación</b>			
<b>Regions/Provinces</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>Total nacional</b>	83.7	16.3	100
<b>Cibao Norte</b>	82.2	17.8	100
<b>Santiago</b>	84.0	16.0	100
<b>Españat</b>	84.2	15.8	100
<b>Cibao Sur</b>	90.7	9.3	100
<b>La Vega</b>	93.3	6.7	100
<b>Sánchez Ramírez</b>	86.8	13.2	100
<b>Monseñor Nouel</b>	89.6	10.4	100
<b>Cibao Nordeste</b>	79.4	20.6	100
<b>Duarte</b>	78.1	21.9	100
<b>Samaná</b>	85.1	14.9	100
<b>Hermanas Mirabal</b>	79.8	20.2	100
<b>Higuamo</b>	74.7	25.3	100
<b>Monte Plata</b>	75.1	24.9	100
<b>Valdesia</b>	87.5	12.5	100
<b>San José de Ocoa</b>	94.7	5.3	100

Source: Taken from Precenso Nacional Agropecuario 2015. Informe de Resultados, Cuadro 17, p.49 y 50.

<sup>19</sup> Banco Central de la República Dominicana, ENCFT 2023, tercer trimestre.

<sup>20</sup> Banco Central de la República Dominicana, ENCFT 2023, tercer trimestre

Planting of agricultural products constitute the main activity to which a productive unit is usually focused on (62.6%), followed by animal husbandry (20%), and both activities (16.3%). There are no significant differences in the productive units of the female population; agricultural planting also constitutes the main activity in

more than 63.2% of the units in the Watershed regions. The exception is the Higuamo region, in which only 45.3% of the productive units of the female population state this use while 34.9% are intended for the shared use of animal husbandry and agricultural planting (Table 6).

**Table 6 / Type of Activity to which the Agricultural Production Unit is Usually Engaged. Female and By Region**

Sexo femenino y por región								
Regions	Total number of productive units, female population	Planting of agricultural products	Animal husbandry	Planting of agricultural products and animal husbandry	Planting of forestry or timber trees	Planting of forestry or timber trees, and animal husbandry	Planting of flowers or ornamental plants	Total
<b>National Total, (female)</b>	34,313	63.2%	16.9%	18.9%	0.5%	0.1%	0.4%	100%
<b>Cibao Norte</b>	5,548	70.6%	19.5%	9.1%	0.4%	0.2%	0.2%	100%
<b>Cibao Sur</b>	2,088	63.6%	19.6%	14.5%	1.0%	0.1%	1.2%	100%
<b>Cibao Nordeste</b>	5,539	78.8%	9.3%	11.1%	0.2%	0.1%	0.5%	100%
<b>Higuamo</b>	4,752	45.3%	18.9%	34.9%	0.4%	0.1%	0.4%	100%
<b>Valdesia</b>	4,645	65.6%	10.3%	23.3%	0.1%	0.0%	0.6%	100%

Source: Data taken from Precenso Nacional Agropecuario 2015, cuadro 22, p.77.

The lack of data limits the ownership and access to credit analysis. However, it is possible to observe a similar trend from the livestock sector. A recent study carried out by FAO on livestock activity in the main provinces of the Watershed highlights that more than half of the women who own land for the livestock sector do not have a property title, access to water resources is more limited for them, their entire source of financing came from the State and, despite the

fact that 82% of them belong to an association, only 22% have held any management position in them.

The high masculinization in the agricultural sector is a characteristic that is also present in the productive activities of marine fishing, where, according to data from the 2019 Fisheries Census, 90.6% of the population dedicated to this activity is male while only 9.4 % is female. If

<sup>21</sup> Ver infografía Participación de la mujer en el sector ganadero en la cuenca del río Yuna. Estudio de actualización de la línea de base del proyecto GANA CLIMA-RD, 2021. Acceso en: <https://ganaderiayclimard.do/wp-content/uploads/2023/02/Infografi%CC%81a-Mujer-sector-ganadero.pdf>

<sup>22</sup> Ver Ibid.

<sup>23</sup> Ver Valerio Daniel, Potencial de la Ganadería Climáticamente Inteligente para reducir la vulnerabilidad de las mujeres ante el cambio climático, febrero 2021 acceso en: <https://ganaderiayclimard.do/wp-content/uploads/2023/02/Infografi%CC%81a-Mujer-sector-ganadero.pdf>

<sup>24</sup> Censo Pesquero 2019, Cuadro 4 pag. 39.

participation is analyzed by age and sex, 71% of the female fishing population is concentrated between the range of 15-44 years of age, while for the male population only 57% of fishermen are in this age range. In other words, the female fishing population is predominantly young adults.

The study on disability in fishermen in the DR (APAP/Reef Check, 2021) highlights that fishermen who carry out their artisanal diving fishing lack the tools and knowledge necessary to carry out these tasks safely. That is why they are affected due to decompression sickness at a very high rate, causing a high rate of disability. Thus, training in good diving practices, safety measures and certifications are required.

In summary, there is a gap in the level of participation of the female population in productive sectors, especially in primary activities such as agriculture and fishing. In general, the absence of equal access to the labor market characterizes the regions under analysis, similarly to the country in general.

## Social vulnerabilities

Regarding the magnitude of social vulnerabilities in terms of violence, income and access to basic services, the level of precariousness in Dominican families, in general, is high. About 26.5% of households suffer from some deprivation of goods or services that enable their subsistence or development in minimal conditions. For the rural area this percentage doubles (42.9%), and

for the Cibao Sur and Valdesia regions, the result exceeds the national average, with 32% and 28.8% of households, respectively.

Access to drinking water registers high heterogeneity among the provinces in the Watershed. Of the households that receive 3 days or less of drinking water service, the national average is 8.7 hours per day. The provinces Monseñor Nouel, Santiago, La Vega and Espaillat receive a difference in hours above the average. The vulnerabilities that households generally suffer become much more pressing for women. A recent study on the feminization of poverty in the Dominican Republic concludes that they are less likely than their peers to go from poor to non-poor and that they are more likely to fall into poverty in the presence of any economic shock. This result is independent of the sector in which they work and the area of residence.

The femicide rate in the country is one of the highest in the Latin America and the Caribbean region, 42% of women between 15-19 years of age reported having suffered some type of physical, sexual or psychological violence at the hands of their current or previous partner in the last 12 months. In addition, of the total number of minors under 18 years of age who got married in 2018, 95% are female.<sup>30</sup>

## People with Disabilities

At the national level, 4.9% of people aged 5 years of age or older have some type of disability. When analyzing these data between the

<sup>25</sup> Torres, Rubén. Estudio sobre discapacidad en pescadores en la República Dominicana, APAP/Reef Check 2021. Acceso en: <https://bvearmb.do/handle/123456789/1224>

<sup>26</sup> Oficina Nacional de Estadística, Cuadro 110.REPÚBLICA DOMINICANA: Promedio de horas semanales que dedica la población de 10 años y más según tipo de trabajo por sexo; 2016.

<sup>27</sup> SISDOM 2022.

<sup>28</sup> Ver Ministerio de Economía, Planificación y Desarrollo. Feminización de la Pobreza, Texto de discusión n.44. Acceso en: <https://mepyd.gob.do/publicaciones/feminizacion-de-la-pobreza-en-republica-dominicana/>

male and female population, no significant differences were recorded. However, when observing by household head, it stands out that the percentage of female heads of household with some disability (8.7%) is higher than that of male heads of household (5.4%). Likewise, in rural areas the percentage of people aged 5 years or older who have some type of disability is higher than those who reside in urban areas, 5.6% and 4.9%, respectively. The Valdesia and Higuamo regions present the highest proportion comparatively with the other regions,. In both, the main disabilities reported are “to see, even when wearing glasses” and “to walk or climb steps.” Specifically, the provinces under analysis Hermanas Mirabal, Monte Plata and San José de Ocoa have around 6% of their population with some type of disability which is higher than the national average.

There are important gaps related to the social vulnerabilities of households in which the head of the household has a disability: severe food insecurity is greater, (25.1%) compared to those households in which the head of the household does not have any disability(19%). It is observed that 22% of the population aged 15 years and over with some disability, states that they do not know how to read and write. When comparing school attendance between those who report a disability and those who do not between 5 and 29 years of age, about 18.1% stated that they had

never attended school, while for those who say they do not have a disability, this percentage is only 1.4%.

These gaps are the result of the economic precariousness and physical limitations faced by the population under analysis. Specifically, the need to work and disability are indicated by 34.7% and 29.4%, respectively as the main reasons why the community of people with disabilities never attended formal education. However, 10.3% of the disabled population has a university degree.

With respect to the labor market, although the gap between the employment rate of the population aged 10 years and over according to the disability situation is wide (28.5% with disabilities versus 60.5% without disabilities), the differences by sex in both population groups are similar. Specifically, in the case of unemployment, the female population with some disability constitutes 69.6% of the unemployed among the total unemployed with disabilities while for the population without disabilities they represent 63.9% of the total unemployed.

The width of the gap between both sexes is indistinct to the disability condition, and this pattern can also be observed in the hours dedicated to domestic work or unpaid care . The female population that has a disability spent an

<sup>29</sup> Para el 2022 de 32 países Rep. Dom ocupa la 6 posición ver en CEPAL, Observatorio de Igualdad de Género en América Latina. Acceso en: <https://oig.cepal.org/es/indicadores/feminicidio>

<sup>30</sup> Oficina Nacional de estadística Cuadro 7.4 <https://www.one.gob.do/datos-y-estadisticas/temas/genero-y-grupos-de-poblacion-especiales/genero/violencia/>

<sup>31</sup> Datos tomados de la Oficina Nacional de Estadística, Cuadro 4.3. REPÚBLICA DOMINICANA: Personas menores de 18 años de edad que contrajeron matrimonio ante el Estado según sexo; 2015-2018. Hasta el año 2021 el matrimonio infantil era legal en el país.

<sup>32</sup> En base a la Encuesta Nacional de Hogares de Propósitos Múltiples 2021 que incluyó un módulo que recoge información de las personas de cinco años o más que declaran mucha dificultad o imposible de realizar las siguientes actividades: ver (incluso cuando usa lentes), caminar o subir escalones, recordar o concentrarse, realizar actividades de cuidado personal (bañarse o vestirse), oír y comunicarse .

<sup>33</sup> Op. Cit. Pag. 87

<sup>34</sup> Op.Cit. Pag 87

<sup>35</sup> Op.Cit. Pag. 87

<sup>36</sup> Vale aclarar que para un 33% de los hogares no se tiene información sobre la situación de discapacidad del jefe del hogar

<sup>37</sup> Op.Cit. Pag 94

average of 20.2 hours a week to perform unpaid domestic or care work, while the male population with the same condition spent an average of 8.4 hours. As for the population without disabilities, the time dedicated to unpaid domestic or care work, in the case of women, is 25.5 hours per week on average and 11.3 in the case of men. Finally, ENHOGAR reports that 10.7% reported the use of a computer, 49.6% used the Internet, and 62.3% used a mobile phone.

### Migrant Population

The country's total foreign-born population is estimated at 5.6%, with a male predominance, for every 100 women there are 160.47 men. In the Watershed, only Cibao Norte concentrates a population close to the national percentage (

5.9%); in other regions like Cibao Sur, Nordeste, Valdesia and Higuamo, the percentage is only 3%. For those provinces that stand out for their production of rice, bananas, food and livestock, the foreign population represents 5.3%.

In the case of the Haitian population, they represent, of the total number of people born abroad, 87.3%. The majority reside in urban areas (66.4%) and are mainly male population (62.9%). The ENI-2017 report highlights a greater presence in provinces with a high population concentration (43.8%) and in those that produce rice, bananas, food and livestock (17.7%). Likewise, under the regions of interest, the two main ones in this population are Cibao Norte (16.8%) and Valdesia (7.2%). As for Cibao Sur, Nordeste and Higuamo, they are concentrated in less than 5%.

**Table 7 / Foreign born population and foreigners born in Haiti**

Regions	Total, foreign-born population		Total, born in Haiti	
	Number	Percentage from total population	Number	Percentual distribution among regions
<b>Cibao Norte</b>	94,540	5.9	83,616	16.8
<b>Cibao Sur</b>	21,985	3.1	20,225	4.1
<b>Cibao Nordeste</b>	22,762	3.6	18,649	3.7
<b>Cibao Noroeste</b>	60,181	14.9	58,644	11.8
<b>Enriquillo</b>	25,479	6.2	23,820	4.8
<b>El Valle</b>	18,870	6.5	18,119	3.6
<b>Yuma</b>	60,061	9.0	49,825	10
<b>Higuamo</b>	23,289	3.9	21,098	4.2
<b>Metropolitano</b>	203,621	5.4	168,037	33.8
<b>Total</b>	570,933	5.6	497,825	100

Source: ENI 2017, p.67 y 73.

The majority is a young population, 54.4% of which is concentrated in ranges between 20-24 years of age. Regarding Dominican documentation, 30.6% stated that they had a regularization card for foreigners, 15.6% had a passport from their country with a valid visa, and 2.2% stated a Dominican identity card for foreigners. When compared with those born in other countries, the percentage of people who report some Dominican documentation is significantly higher, with respect to a current visa 52.1%, and identity card for foreigners 16.8% regularization, among other documentation.

Of Haitian migrants, 95% state they do not have health insurance. Likewise, 27.7% state that they do not know how to read or write, a significant gap with respect to migrants from other countries, which only represents 1.9%. A similar gap is observed regarding the source of water supply, 49.9% of the households in which those born in Haiti reside is “through a tap placed in the patio of the home;” in the case of those born in the rest of the countries, it is barely 7.6%.

### **Relevance of the integration of the ancestral cultural heritage approach**

The Yuna watershed has natural and cultural areas of high importance; within these areas, the Aniana Vargas National Park has been created to protect one of the areas with the highest concentration of sites with Taíno art reported in the Caribbean. The area also conserves its primary forest with great biodiversity. This National Park has an area of 119.6 km<sup>2</sup> within

which there are caverns, 21 caves and protected shelters that contain 435 petroglyphs and 711 pre-Hispanic Taíno paintings with different styles, sculpture and engravings. It is important to protect the cultural heritage since many of these places have suffered from vandalism.

Indigenous people in the Dominican Republic (taínos) were decimated during the colonization process due to forced labor and mainly due to diseases to which they lacked immunity. However, they mixed in the society, and their genetic and cultural heritage are still preserved in agriculture, gastronomic and cultural practices such as language, folklore and crafts in the country<sup>38</sup>. According to the tainos culture, natural resources are perceived as spirits where elements such as water, trees, mountains, and all in the natural world preserve memories of our previous lives.

The incorporation of the cultural perspective is important not only to preserve the valuable cultural heritage in the country, but also to integrate respect for the culture in ways that benefit both the environment and the local communities. Activities considered under the program can help to promote tourism to celebrate the taino heritage, offering authentic experiences to visiting people, which can also benefit economically the local communities. In addition, training can be delivered, especially for young people who can act as tourist guides, and guardians of their cultural and natural heritage.

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<sup>38</sup> En base a la Segunda Encuesta Nacional de Inmigrantes (ENI) 2017 que recoge información de la población de origen extranjero: inmigrantes y descendientes.

**Table 8 / Existing and potential gaps: Risks, interview findings**

<b>Summary of Main Findings</b>		
<b>Qualitative Interviews and Quantitative Data Analysis. Gaps, Barriers and Information Gaps</b>		
<b>Assessment Analysis Dimension: Governance</b>		
<b>Gaps</b>	<b>Social Barriers/Vulnerabilities</b>	<b>Information Gaps</b>
<ul style="list-style-type: none"> <li>• Low participation of women in committees and irrigation boards.</li> <li>• Political representation of women is less than 30% in public decision-making bodies, as well as low participation in executive bodies and community associations.</li> </ul>	<ul style="list-style-type: none"> <li>• No representation of groups with any type of disability.</li> <li>• The lack of participation of women in decision-making spaces limits their ability to influence the design of initiatives that consider their needs and the limitations they face.</li> <li>• Due to little knowledge, fishermen use unsafe diving practices, which results in a high risk of disability.</li> <li>• Lack of general knowledge about the use of climate data.</li> </ul>	<ul style="list-style-type: none"> <li>• There is no systematized data disaggregated by sex, participants in the committees.</li> </ul>
<b>Assessment Analysis Dimension: Resilience</b>		
<b>Gaps</b>	<b>Social Barriers/Vulnerabilities</b>	<b>Information Gaps</b>
<ul style="list-style-type: none"> <li>• Low participation of women and diverse groups in conservation and restoration.</li> </ul>	<ul style="list-style-type: none"> <li>• Economic precariousness limits the participation of young people and the sustainability of initiatives.</li> <li>• Few training programs on ecology limit comprehensive work on environmental conservation.</li> <li>• Cultural barriers and prejudices prevent working together with the migrant population.</li> <li>• Greater resistance of the adult population to changes in practices around conservation and restoration issues.</li> <li>• Educational deficiencies in the youth population make it difficult for them to understand the problems of the environment, communication and participation in the community, and the sustainability of the initiatives.</li> <li>• The community, especially women, do not see the economic benefit that conservation tasks imply for their participation, so they are not interested.</li> <li>• Limited capacity of women in employment opportunities in construction, maintenance and management of green infrastructure.</li> <li>• Low access of the population with some disability to ICTs and training in general.</li> </ul>	<ul style="list-style-type: none"> <li>• Few databases on local women's organizations.</li> <li>• Lack of studies that classify the local participation of women in conservation activities.</li> <li>• Absence of a baseline that differentiates, by sex, the potential population to be impacted by infrastructure projects.</li> </ul>

### Assessment Analysis Dimension: Productive Activities

Gaps	Social Barriers/Vulnerabilities	Information Gaps
<ul style="list-style-type: none"> <li>• Participation of women is less than 20% in fishing and agricultural activities.</li> <li>• Majority participation of the male population in the formal sector is related to the lodging and food sector.</li> <li>• Differences in the ways of fishing between men and women (with boat and on foot -Samaná-)</li> <li>• High percentage of use of non-owned vessels.</li> <li>• Low ownership of the land.</li> <li>• Limited access to private credit.</li> <li>• Higher percentage of women who report fishing activities as a means of subsistence (94.5% women).</li> <li>• *Low labor participation of people with disabilities, due to the skills required and the specific needs that this population requires.</li> </ul>	<ul style="list-style-type: none"> <li>• The percentage of the female head of household population with a disability is higher compared to the male head of household.</li> <li>• Severe food insecurity is greater when head of households have some type of disability, standing at 25.1%.</li> <li>• 18.1% of people with some type of disability report that they have never attended school.</li> <li>• Mainly Haitian migrants work in mining and agriculture temporarily after they are left without work, and reside in an area of greater climatic risk and in overcrowded conditions, without adequate sanitary or migratory conditions.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of tools and methodologies in local organizations to influence through a gender-based approach in the territories.</li> <li>• No record of producers by sex.</li> <li>• Few studies that delve into the needs and barriers by sector of the population with some disability.</li> <li>• Poor employment database with territorial scope, under a gender and disability-based approach.</li> </ul>

### Assessment Analysis Dimension: Imaginaries and Gender Roles

Gaps	Social Barriers/Vulnerabilities	Information Gaps
<ul style="list-style-type: none"> <li>• *Domestic and caregiving responsibilities limit women's ability to participate in employment and training opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• High pregnancy rate in adolescents, which is expressed in a situation of disadvantage in labor participation.</li> <li>• Cultural barriers around gender roles: Care and household activities delegated to women, risky and productive activities for men.</li> <li>• Lack of sexual education and normalized situations of abuse.</li> <li>• The lack of sanitary sewage and access to water puts women at a disadvantage since they are the ones who are responsible for cleaning and caring for the household.</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment or feasibility studies carried out by areas/ sectors do not consider a gender-based approach in the analysis.</li> </ul>

**Table 9 / Intervention Plan towards closing gaps**

<b>Intervention Plan Towards Closing Gender and Diversity Gaps</b>			
<b>Dimension</b>	<b>Components</b>	<b>Actions</b>	<b>Indicators</b>
<b>Governance</b>	<b>Component 1. Institutional and Regulatory Capacity</b>	<ul style="list-style-type: none"> <li>• Develop plans and strategies with a gender and diversity perspective.</li> <li>• Ensure the participation of no less than 40% of women and diverse populations, especially young people, and people with disabilities) in the design and development of plans and strategies.</li> <li>• Incorporate capacity development for the economic inclusion of women, young people and people with disabilities into plans and strategies (similar to the Supérate program),.</li> <li>• Include a sustainability criteria in the elaboration of plans and strategies, harmonized with the interests and aspirations</li> </ul>	<ul style="list-style-type: none"> <li>• Number of plans and strategies that include a gender and diversity perspective.</li> </ul>
<b>Resilience</b>	<b>Component 2. Restoration and Conservation of Ecosystems</b>	<ul style="list-style-type: none"> <li>• Ensure a quota of no less than 40% of women beneficiaries of payment mechanisms for environmental services.</li> <li>• Design a training program for the actors involved in the project so that they contribute as promoters of cultural and social change around local problems related to violence and sexual and reproductive health, in young women and men.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of people receiving livelihoods benefits (disaggregated by sex and by diverse groups) from ecotourism, blue economy, nature-based solutions projects, and payments for environmental services.</li> </ul>
<b>Productive Activities</b>	<b>Component 3. Economic Diversification</b>	<ul style="list-style-type: none"> <li>• Include, whenever possible, an accessibility policy in ecotourism projects.</li> <li>• Promote the regularization of the migrant population and its inclusion in ecotourism projects.</li> <li>• Deliver training programs on local businesses and entrepreneurship.</li> <li>• The projects include training and knowledge sharing activities that addresses, the social and productive and life styles issues that exacerbate the current climate crisis from a multidimensional paradigm, the social.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of direct and indirect jobs created (disaggregated by sex and by diverse groups) due to ecotourism, blue economy and nature-based solutions projects</li> </ul>

**Tabla 10 / List of stakeholders that were interviewed on gender and diversity integration**

Person	Area/Position	Organization	Contact information
Altigracia de Jesus	Director of the Gender Equality Department	National Water Resources Institute (INDRHI)	809-532-3271 ext. 3184/ mdejesus@indrhi.gob.do
Raúl Perez & Israel Acosta	Planning and Water Development Department	National Water Resources Institute (INDRHI)	(809) 532-3271 Fax:1(809) 534-5913
Martha González	Sector Specialist	Ministry of Economy, Planification and Development (MEPyD)	martha.gonzalez@mepyd.gob.do (809) 682.5170 ext. 124 <a href="https://mepyd.gob.do/viotdr/">https://mepyd.gob.do/viotdr/</a>
Sol Teresa Paredes Minaya	Payments for Environmental Services	Ministry of Environment and Natural Resources	solteresapm@gmail.com 809-567-4300 ext.7139.
Addys Then Martes	Deputy Minister of Planification and Development	Ministry of Women	(809) 685-3755 ext. 2004 y 2005
Loranny Santana	Planification and Development	Ministry of Women	loranny.santana@mujer.gob.do
Rita Sellares	Executive Director	Dominican Foundation for Marine Studies INC. (FUNDEMAR)	rsellares@gmail.com
Patricia Lamelas	Executive Director	Center for the Conservation and Ecodevelopment of Samaná Bay (CEBSE)	amelasp@gmail.com. 809-852-6619 / <a href="http://www.samana.org.do/cebse-s.htm">http://www.samana.org.do/cebse-s.htm</a>
Sesar Rodríguez	Executive Director	Dominican Environmental Consortium	Sesar_rodriguez@yahoo.com
Carmen Suriel	Executive Director	Sánchez Ramírez Ecotourism Development Council	(809) 585 2745 Email: consejoecoturísticosr40@hotmail.com
Francisco Sanchez Mena	President	Sánchez Ramírez Ecotourism Development Council	<a href="http://www.consejoecoturísticosr.com">http://www.consejoecoturísticosr.com</a>
Euclides Durán	President	Constanza Ecotourism Cluster, 43 companies linked to the value chain of the municipality's tourism sector	euclidesduran@yahoo.com
Yasmina Taveras	Entrepreneur	Ecotourism project in Bajo Yuna and recycling business	jastaverass@gmail.com 829-486-2264
Joaquin Cerdeiros	Cultural manager	Representative of indigenous people (taino culture)	joaquincerdeiros@gmail.com 829-512-7060
Boynayel Mota	Researcher, Cultural manager	Representative of indigenous people (taino culture) and afro descendants	809-602-1857

## ANNEX D. DEVELOPMENT CO-BENEFITS

### Introduction

The main objective of the CIF-NPC Investment Program in the Dominican Republic is to promote comprehensive, resilient and low-carbon management of the Yuna Watershed through nature-based solutions. In addition to the direct benefits anticipated, this program will generate a series of co-benefits that will contribute to the socioeconomic and environmental well-being of local communities and the sustainable development of the region.

### Identified Co-benefits

#### 1. Improved Water Quality:

Through the implementation of nature-based solutions such as the restoration of aquatic and terrestrial ecosystems, a significant improvement in water quality is expected in the Yuna Watershed. This will not only benefit human health by ensuring access to cleaner drinking water, but will also promote aquatic biodiversity and the sustainability of water-dependent economic activities such as fishing and tourism.

#### 2. Job Creation and Economic Development:

Component 3 of the program, focused on nature-positive economic diversification, will drive the creation of employment opportunities in sectors such as ecotourism, the blue economy and sustainable agriculture. These initiatives will not only generate additional income for local communities, but will also promote training and entrepreneurial skills development, thereby strengthening the region's economic resilience.

#### 3. Strengthened Governance and Community Participation:

Through Component 1 of the project and the Dedicated Grant Mechanism (DGM), local

communities will be empowered to play an active role in decision-making and project implementation. This will not only ensure adequate representation of local interests, but will also foster shared responsibility in the sustainable management of natural resources and environmental protection.

#### 4. Increased Climate Resilience:

The ecosystem restoration and conservation actions provided for in Component 2 of the program will contribute to strengthening the resilience of the Yuna Watershed to the impacts of climate change. Mangrove protection, reforestation and erosion control will help mitigate the effects of flooding and extreme weather events, thereby protecting communities and their livelihoods.

### Monitoring and Evaluation

A comprehensive monitoring and evaluation system will be established to closely track the progress and impact of the co-benefits identified throughout the program. This will include regular data collection, monitoring of key indicators and continuous feedback from stakeholders to ensure the effectiveness and adaptability of interventions.

### Conclusions

The CIF-NPC Investment Program in the Dominican Republic not only seeks to address the environmental and socioeconomic challenges in the Yuna Watershed, but also offers a unique opportunity to generate significant co-benefits that improve the quality of life of local communities, strengthen their resilience to the impacts of climate change and promote long-term sustainable development.

## ANNEX E. PROJECT PRESENTATION SHEETS

### COMPONENT 1. Institutional and Regulatory Capacity

#### Project 1.1

#### Elaboration and Updating of Management Plans in Prioritized Protected Areas

#### Project Presentation Sheet 1

Project 1.1	Elaboration and Updating of Management Plans in Prioritized Protected Areas
<b>Technical Description</b>	<p>The Management Plan is a technical and regulatory document that contains the set of decisions on a protected area in which, based strictly on scientific knowledge and experience of technical applications, specific prohibitions and authorizations are established, and activities permitted in protected areas are regulated, stating in detail the exact manner and places where it is possible to carry out these activities. Within the framework of this project, the development and/or updating of the Management Plans of nine Protected Areas in the Yuna River Watershed that present outdated plans, or have never had them, are sought, these being the following: National Parks (Mangroves of Bajo Yuna, Valle Nuevo, Los Haitises, La Humeadora, Aniana Vargas) and Scientific Reserves (Loma Quita Espuela, Ebano Verde, Las Neblinas).</p> <p>The project will address the following phases:</p> <ul style="list-style-type: none"> <li>• <b>Phase 1. Planning and Hiring:</b> Four professionals with experience in developing protected area management plans and coordinating participatory processes will be hired. Each one will work directly on the management plan of a protected area.</li> <li>• <b>Phase 2. Preparatory Phase:</b> The Work Plan will be prepared and approved, harmonizing the scope and defining the key actors. The first field immersion would be carried out to collect biophysical and socioeconomic information, and the first introductory workshop would be held for key actors, in order to prepare the next phase.</li> <li>• <b>Phase 3. Assessment Phase:</b> The incorporation of relevant technical and scientific information is carried out, updating the available socioeconomic and biophysical information, and identifying information gaps. With this, an assessment would be made for the management planning of the Protected Areas in question, to be socialized in a validation workshop.</li> <li>• <b>Phase 4. Proposal Phase:</b> In this phase, the objects of conservation will be identified, analyzing their status, as well as the technical-legal framework, and key sectors will be consulted on relevant aspects of management.</li> <li>• <b>Phase 5. Elaboration of Management Plans:</b> The zoning, vision and goal, strategic objectives, components and actions of the plan will be defined, and a workshop will be held to socialize the proposed plan, to incorporate the observations raised into the final proposal.</li> </ul>

<b>Specific Activities</b>	<p><b>1. Planning and Hiring Phase</b></p> <ol style="list-style-type: none"> <li>Hiring of technical team.</li> <li>Planning.</li> </ol> <p><b>2. Preparedness Phase:</b></p> <ol style="list-style-type: none"> <li>Meeting to learn about the Work Plan and Schedule with the Technical Monitoring Team.</li> <li>Collection of biophysical and socioeconomic information.</li> <li>Identification of key actors in consultation with the technical team and administrator.</li> <li>Introductory workshop for key and assessment actors.</li> </ol> <p><b>3. Assessment Phase:</b></p> <ol style="list-style-type: none"> <li>Updating available socioeconomic information and identifying information gaps.</li> <li>Updating available biophysical information and identifying information gaps.</li> <li>Elaboration of an updated map of current land use and coverage and other thematic maps.</li> <li>Consolidation of updated information.</li> <li>Final validation workshop of the assessment and proposal.</li> </ol> <p><b>4. Proposal Phase:</b></p> <ol style="list-style-type: none"> <li>Analysis of the legal technical framework.</li> <li>Identification of conservation priorities.</li> <li>Analysis of the status of things prioritized for conservation.</li> <li>Consultations with key sectors on relevant management aspects.</li> </ol> <p><b>5. Elaboration and Validation:</b></p> <ol style="list-style-type: none"> <li>Definition of zoning in consultation with the ETS, administrator and technical staff of the Vice-Ministries of Protected Areas and Biodiversity, and of Forest Resources.</li> <li>Delivery of preliminary report of the plan.</li> <li>Meeting with the Technical Monitoring Team to coordinate Socialization Workshop.</li> <li>Workshop to socialize the propositional aspects of the Management Plan.</li> <li>Incorporation of observations from the Technical Monitoring Team and Socialization Workshop to the Draft Report.</li> <li>Delivery of the final report.</li> </ol>																																				
<b>Potential Areas</b>	<p>This project to prepare and/or update Management Plans will focus on the Protected Areas whose Management Plans need to be updated and those that have never had them, these being: National Parks (Mangroves of Bajo Yuna, Valle Nuevo, Los Haitises, La Humeadora, Aniana Vargas, Baiguatè) and Scientific Reserves (Loma Quita Espuela, Ébano Verde, Las Neblinas).</p>																																				
<b>Estimation of Implementation Costs</b>	<p>The Ministry of Environment and Natural Resources (MMARN) manages a matrix of weighting factors to estimate the cost of consultancies. This matrix includes factors for extension, existing ecosystems, management category, accessibility, economic activities within the area, populations within the area or surrounding areas. This weighting matrix includes the professional fees of the experts, travel and lodging expenses, management expenses, etc. The budget below is built with information from the MMARN.</p> <table border="1"> <tr> <td><b>Total Costs</b></td> <td><b>\$</b></td> <td><b>700,000</b></td> </tr> <tr> <td><b>National Parks (5)</b></td> <td><b>\$</b></td> <td><b>500,000</b></td> </tr> <tr> <td>Mangroves of Bajo Yuna</td> <td></td> <td></td> </tr> <tr> <td>Valle Nuevo</td> <td></td> <td></td> </tr> <tr> <td>Los Haitises</td> <td></td> <td></td> </tr> <tr> <td>La Humeadora</td> <td></td> <td></td> </tr> <tr> <td>Aniana Vargas</td> <td></td> <td></td> </tr> <tr> <td><b>Scientific Reserves (3)</b></td> <td><b>\$</b></td> <td><b>200,000</b></td> </tr> <tr> <td>Loma Quita Espuela</td> <td></td> <td></td> </tr> <tr> <td>Ébano Verde</td> <td></td> <td></td> </tr> <tr> <td>Las Neblinas</td> <td></td> <td></td> </tr> <tr> <td><b>VAC</b></td> <td><b>\$</b></td> <td><b>700,000</b></td> </tr> </table> <p><i>Data in USD (United States Dollar)</i></p>	<b>Total Costs</b>	<b>\$</b>	<b>700,000</b>	<b>National Parks (5)</b>	<b>\$</b>	<b>500,000</b>	Mangroves of Bajo Yuna			Valle Nuevo			Los Haitises			La Humeadora			Aniana Vargas			<b>Scientific Reserves (3)</b>	<b>\$</b>	<b>200,000</b>	Loma Quita Espuela			Ébano Verde			Las Neblinas			<b>VAC</b>	<b>\$</b>	<b>700,000</b>
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La Humeadora																																					
Aniana Vargas																																					
<b>Scientific Reserves (3)</b>	<b>\$</b>	<b>200,000</b>																																			
Loma Quita Espuela																																					
Ébano Verde																																					
Las Neblinas																																					
<b>VAC</b>	<b>\$</b>	<b>700,000</b>																																			

**Facilities, Equipment, Technologies and Human Capital**

**Human Resources:**

- One (1) Project Manager (graduated in Biology, Ecology, Sociology, Natural Sciences, Agricultural Engineering, Anthropology or other related areas, with at least 5 years of experience in management and protected areas management projects, elaboration of management plans for protected areas, coordination of participatory processes and mastery of the management of geographic information systems and other information analysis and processing techniques).
- Four (4) technical professionals (with degrees in Biology, Ecology, Sociology, Natural Sciences, Agricultural Engineering, Anthropology or other related areas, with at least 2 years of experience in environmental, protected areas, conservation and related projects).

**Technologies:**

- Geolocation technologies, research and data collection: It will be necessary to have access to scientific databases, previous research, scientific-technical information related to natural and cultural resources, socio-economic information, geographic information systems, etc.

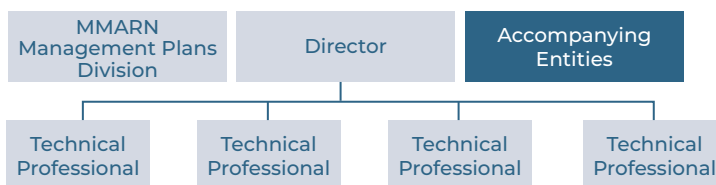
**Material and Equipment:**

- For the Assessment Phase: Per diems of the hired consultants (vehicles, lodging, meals, among others).
- For Participatory Activities: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snacks and meals), computers, image projector, among others.

**Management and Operations Structure**

The management of the project will be the responsibility of the Coordinator hired for the execution of the project, who will be in charge of the hiring and coordination of 4 professionals with experience in preparing management plans for protected areas and coordinating participatory processes. The Director will be responsible for the dialogue with the administrators of the protected areas and the representatives of partner institutions. He will be responsible for the elaboration of the preliminary and final reports of the project.

The consulting team will have the support of the Division for the Elaboration and Evaluation of Management Plans of the Vice Ministry of Protected Areas and Biodiversity.



**Implementation Timeline**

A duration of 9 months is expected for the development of this project, distributed between 3 months of planning and 6 months of elaboration of the Management Plans.

Year 1			
Q1	Q2	Q3	Q4
Phase 1	Phase 2		
	Phase 3	Phase 4	
		Phase 5	

**Rules and Regulations to take into Account**

- The Constitution of the Dominican Republic, in articles 14, 15, 16, 17 and 67, provide for the protection of the environment and natural resources, declaring them national heritage for public use, establishing their conditions of use and stating the duties and obligations by the State for its conservation. In article 17, paragraph 2, the reforestation of the country, the conservation of forests and the renewal of forest resources is declared a “national priority and of social interest.”
- The National Development Strategy of the Dominican Republic 2030 (Law 1-12) proposes in its Fourth Strategic Axis: “A society with a culture of sustainable production and consumption, which equitably and effectively manages the risks and protection of the environment and natural resources, and promotes adequate adaptation to climate change.” The first specific objective points towards the protection and sustainable use of “the goods and services of the ecosystems, biodiversity and the natural heritage of the nation, including marine resources.”
- The General Law on Environment and Natural Resources, enacted on August 18, 2000 (Law 64-00), in article 16, defines protected areas as “a portion of land and/or sea especially dedicated to the protection and maintenance of significant elements of biodiversity and associated natural and cultural resources, managed by legal mandate and other effective means.” Articles 33 and 36 establish general aspects of protected area management plans. Article 33 states: “The management and surveillance of all protected areas must be carried out under management plans.” For its part, article 36 states: “Protected areas are heritage of the State and must be managed according to their categories, zoning and regulations, based on management plans approved by the State Secretariat of Environment and Natural Resources, with the participation of the community and its organizations, in their management.”
- The Protected Areas Sector Act, promulgated on July 30, 2004 (Law 202-04), describes in article 6 the elaboration of management plans for each of the country’s protected areas, specifying that the Ministry of Environment and Natural Resources will formulate and approve them, “and may delegate their formulation to duly qualified legal entities.” Furthermore, “when it is in the social interest, [...] it will allow the participation of local communities and organizations in the elaboration of management plans for protected areas, as well as their participation in the benefits derived from their conservation.”
- Forestry Law of the Dominican Republic, enacted on December 10, 2018, (Law 57-18).
- Methodological Guide for the Elaboration and/or Update of Management Plans for Protected Areas of the Dominican Republic, from the Ministry of Environment and Natural Resources (2005).
- Technical Guide on Good Environmental and Social Practices for Forest Conservation in Protected Areas under the REDD+ Framework in the Dominican Republic, from the Ministry of Environment and Natural Resources (2022).

## Project 1.2

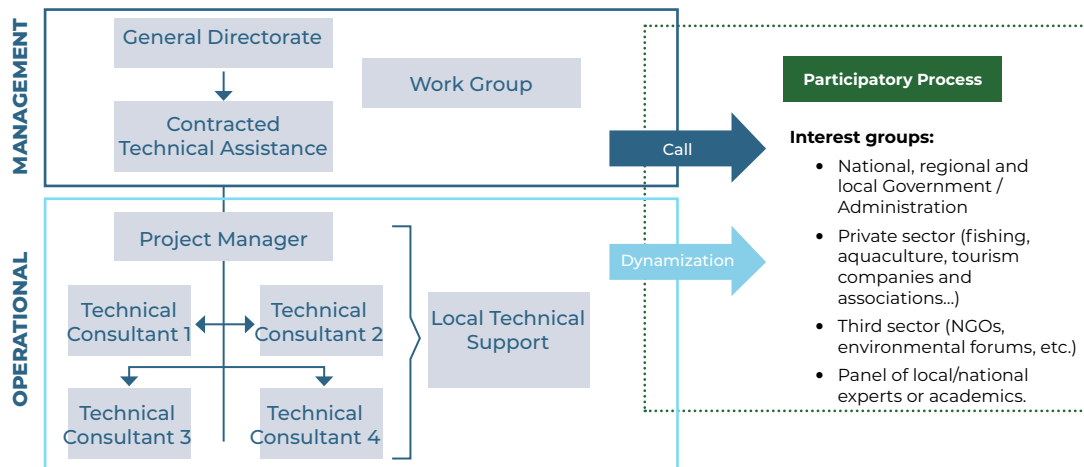
### Elaboration of a Development Strategy for the Yuna Watershed as an Ecotourism Destination

#### Project Presentation Sheet 2

Project 1.2	Elaboration of a Development Strategy for the Yuna Watershed as an Ecotourism Destination
<b>Technical Description</b>	<p>The initiative to develop an Ecotourism Development Strategy for the Yuna Watershed is proposed as a strategic planning instrument to manage the territory of the Yuna Watershed as a whole and not in isolation, promoting economic diversification with positive results for the nature.</p> <p>The aspects that must be taken into account for its implementation are the following:</p> <ol style="list-style-type: none"> <li>1. Identification of connectivities between the different initiatives identified as priorities.</li> <li>2. Consideration of the characteristics of the ecotourism destination: Attractions and services, value chain, accessibility, support of local communities involved in the tourist experience.</li> <li>3. Definition of strategic axes and focus areas, according to lines of action.</li> <li>4. Definition of the actions to be developed, those responsible and the schedule.</li> </ol>
<b>Specific Activities</b>	<p><b>A. Previous Studies</b></p> <p><b>A1. Design of the institutional environment, including the identification of the specialized technical team.</b></p> <p><b>A2. Assessment of the ecotourism potential of the Yuna Watershed as a destination:</b></p> <ol style="list-style-type: none"> <li>a. Analysis of demand.</li> <li>b. Analysis of the ecotourism product as a whole.</li> <li>c. Analysis of tourist facilities.</li> <li>d. Analysis of promotion and marketing.</li> <li>e. Analysis of tourism management.</li> <li>f. Analysis of the competition.</li> </ol> <p><b>A3. SWOT Analysis.</b></p> <p><b>B. Ecotourism Development Strategy</b></p> <p><b>B1. Formulación de la visión estratégica:</b></p> <ol style="list-style-type: none"> <li>a. Vision and Mission.</li> <li>b. Strategic objectives.</li> <li>c. Indicators, means of verification and goals of the objectives.</li> </ol> <p><b>B2. Formulation of the Action Plan:</b></p> <ol style="list-style-type: none"> <li>a. Strategic axes.</li> <li>b. Focus areas. <ol style="list-style-type: none"> <li>i. Initiatives/projects.</li> <li>ii. Those responsible.</li> </ol> </li> </ol> <p><b>B3. Recommendations.</b></p> <p><b>C. Priority Intervention Preliminary Projects</b></p> <p><b>C1. Design of the intervention preliminary projects that are considered a priority in the Action Plan.</b></p>

<b>Potential Areas</b>	The entire territory of the Yuna Watershed, with special emphasis on protected areas and relatively virgin areas.																																				
<b>Estimation of Implementation Costs</b>	<p>A budget of US\$ 700,000.00 (includes an estimate of unforeseen events) is estimated for the development of this project. The cost breakdown of the project in US dollars is detailed below.</p> <table border="1"> <tr> <td><b>Total Investment Costs</b></td> <td>\$</td> <td>-</td> </tr> <tr> <td><b>Total Operational Costs</b></td> <td>\$</td> <td></td> </tr> <tr> <td>Phase 1: Planning and Management - Starting Conditions/Institutional Environment</td> <td>\$</td> <td><b>55,000.00</b></td> </tr> <tr> <td>Phase 2: Strategy Development</td> <td>\$</td> <td><b>645,000.00</b></td> </tr> <tr> <td>Ecotourism potential assessment</td> <td>\$</td> <td><b>36,000.00</b></td> </tr> <tr> <td>Previous analyses</td> <td>\$</td> <td><b>16,000.00</b></td> </tr> <tr> <td>Strategy and Action Plan</td> <td>\$</td> <td><b>76,000.00</b></td> </tr> <tr> <td>Design of preliminary projects of priority projects</td> <td>\$</td> <td><b>425,000.00</b></td> </tr> <tr> <td>Presentation of the work carried out</td> <td>\$</td> <td><b>32,000.00</b></td> </tr> <tr> <td>Monitoring and follow-up</td> <td>\$</td> <td><b>50,000.00</b></td> </tr> <tr> <td>Incidentals</td> <td>\$</td> <td><b>10,000.00</b></td> </tr> <tr> <td><b>VAC</b></td> <td>\$</td> <td><b>700,000</b></td> </tr> </table> <p><i>Data in USD (United States Dollar)</i></p>	<b>Total Investment Costs</b>	\$	-	<b>Total Operational Costs</b>	\$		Phase 1: Planning and Management - Starting Conditions/Institutional Environment	\$	<b>55,000.00</b>	Phase 2: Strategy Development	\$	<b>645,000.00</b>	Ecotourism potential assessment	\$	<b>36,000.00</b>	Previous analyses	\$	<b>16,000.00</b>	Strategy and Action Plan	\$	<b>76,000.00</b>	Design of preliminary projects of priority projects	\$	<b>425,000.00</b>	Presentation of the work carried out	\$	<b>32,000.00</b>	Monitoring and follow-up	\$	<b>50,000.00</b>	Incidentals	\$	<b>10,000.00</b>	<b>VAC</b>	\$	<b>700,000</b>
<b>Total Investment Costs</b>	\$	-																																			
<b>Total Operational Costs</b>	\$																																				
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Incidentals	\$	<b>10,000.00</b>																																			
<b>VAC</b>	\$	<b>700,000</b>																																			
<b>Facilities, Equipment, Technologies and Human Capital</b>	<p><b>Infraestructura</b></p> <ul style="list-style-type: none"> <li>• A team of experts on the subject of ecotourism and strategic planning (may be 3 professionals).</li> </ul> <p><b>Technologies</b></p> <ul style="list-style-type: none"> <li>• Research, field visits, data collection.</li> <li>• Use of geographic information systems and other technologies.</li> <li>• Induction and technical training.</li> <li>• Follow-up and monitoring.</li> </ul> <p><b>Material and Equipment</b></p> <ul style="list-style-type: none"> <li>• During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground).</li> <li>• During the participatory and training process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.</li> </ul>																																				
<b>Management and Operation Structure</b>	The objective of the project is the elaboration for the Development Strategy of the Yuna Watershed as an ecotourism destination. The management of the project will be in charge of the General Directorate (led by the National Executive, the Ministry of Environment and Natural Resources, and the Ministry of Tourism), with the support of the Work Group (with the participation of entities such as ASONAHORES, among others), and the technical assistance contracted for the execution of the project. Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 4 technical consultants and local technical support.																																				

Regarding the participation strategy, institutional involvement as mobilizing entities will be necessary, and the direction of the technical assistance contracted for the promotion of the participatory sessions that allow generating the commitment and linkage of the interest groups with the Development Strategy of the Yuna Watershed as an ecotourism destination.



**Implementation Timeline**

A duration of 12 months is expected for the development of this project, distributed between 2 months of planning and 10 months of project development.

Although the strategy could be developed in 6 months, a period of 10 months is estimated, taking into consideration the conditions of the territory and the need to mobilize and encourage local actors to achieve a participatory strategy that generates commitment from the local community, as well as the design of the preliminary projects of the priority projects indicated in the strategy.

The following table reflects the implementation schedule of the activities previously outlined in this project presentation sheet. The schedule follows the numbering of the activities established in said section from the general activity (A, B...), and the corresponding specific activities (A2 (a); B1 (b)...).

Year 1			
Q1	Q2	Q3	Q4
A1 A2 (a,b,c)	A2 (d,e,f) A3		
	B1 (a)	B1 (b, c) B2 (a, b)	B3
		C1	C1

**Rules and Regulations to Take Into Account**

**Rules and Regulations**

- General Law on Environment and Natural Resources (Law 64-00).
- The Protected Areas and Biodiversity Act (Law 202-04).
- National Development Strategy (Law 1-12).
- Law for the Development of MSMEs (Law 488-08).
- General Law on Tourism (Law 541-02).
- Requirement for authorizations of concessions for ecotourism operations in protected areas.

## Project 1.3

### Elaboration of a Blue Economy Development Strategy for the Lower Watershed and River Mouth of the Yuna

#### Project Presentation Sheet 3

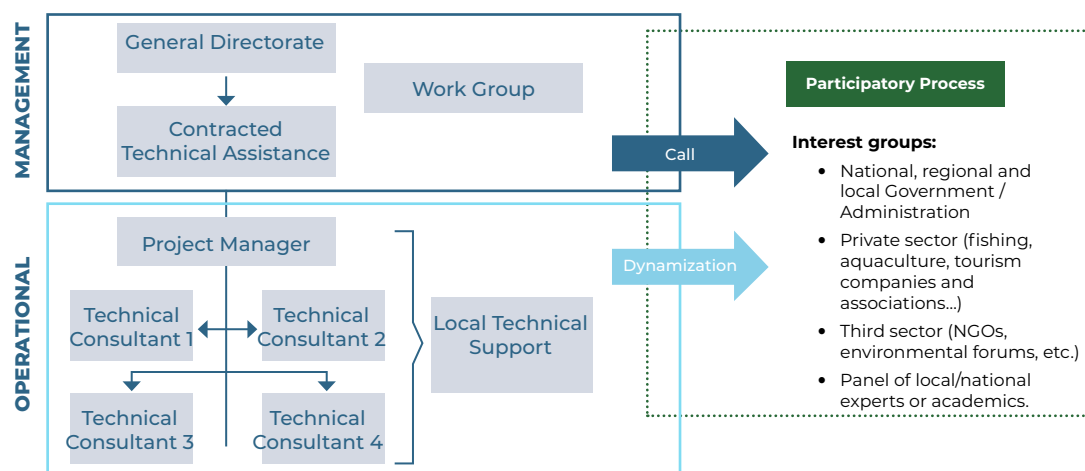
Project 1.3	Elaboration of a Blue Economy Development Strategy for the Lower Watershed and River Mouth of the Yuna
<p><b>Technical Description</b></p>	<p>The project focuses on the development of a comprehensive blue economy strategy that allows introducing a change in the way of planning territorial development, addressing current challenges and defining measures to sustainably take advantage of the marine-coastal resources of Bajo Yuna and its river mouth into the Bay of Samaná. The sections to take into account in the development of said document are the following:</p> <ul style="list-style-type: none"> <li><b>a. Socio-economic and environmental Assessment and Evaluation</b> of the current situation of marine-coastal resources in Bajo Yuna and river mouth.</li> <li><b>b. Identification of Opportunities</b> for sustainable economic development through research and innovation in blue technologies, diversification, the development of responsible tourism, and social inclusion.</li> <li><b>c. Development of Studies, Policies and Regulations:</b> To address local challenges, including, for example, the review and adjustment of the closed season system, the development of environmental impact studies of fishing and aquaculture activity in Bajo Yuna and the Samaná Bay, studies of carrying capacity of tourist activity, among others.</li> <li><b>d. Investment in Sustainable Infrastructure</b> including, among others, the design and execution of a mariculture pilot project in Bajo Yuna and the Samaná Bay; and, on the other hand, the adaptation and reactivation of the aquaculture ponds available in the municipality of Sánchez (see specific Project Presentation Sheets).</li> <li><b>e. Capacity Development Program</b> for fishermen, aquaculturists, tourism operators, and public entities linked to blue growth.</li> <li><b>f. Continuous Monitoring and Evaluation System</b> to evaluate the impact of the strategy in terms of environmental sustainability, economic development and social well-being.</li> <li><b>g. Risk Assessment and Contingency Plan.</b></li> <li><b>h. Socioeconomic Impact Assessment.</b></li> </ul> <p>It should be noted that the active participation of local communities will be essential in all stages of the project. Dialogue will be encouraged with fishing communities and other interested parties (MIMARENA, ANAMAR, CODOPESCA, fishermen's associations, third sector...) to guarantee an inclusive implementation that is respectful of local traditions. The strategy must also be complemented with a dissemination and awareness campaign.</p> <p>Finally, within the framework of this Project Presentation Sheet and its associated budget, the design at a preliminary project level of at least 3 initiatives identified within the strategy is also taken into consideration.</p>

<b>Specific Activities</b>	<ol style="list-style-type: none"> <li>1. <b>Project Planning and Management:</b> Financing processing, contracting of technical assistance, coordination of the Work Plan, development of a participatory strategy and constitution of the Work Group.</li> <li>7. Elaboration of the Blue Economy Strategy:             <ol style="list-style-type: none"> <li>a. Drafting of the Sectoral Assessment.</li> <li>b. Drafting of the Strategy and Action Plan.</li> <li>c. Drafting of the Monitoring and Follow-up Plan.</li> <li>d. Presentation of the Blue Economy Strategy for Bajo Yuna and its river mouth.</li> </ol> </li> <li>8. Design of Preliminary Projects:             <ol style="list-style-type: none"> <li>a. Identification of priority initiatives.</li> <li>b. Design of a minimum of 3 preliminary projects.</li> </ol> </li> </ol>																														
<b>Potential Areas</b>	<p>The strategy is expected to focus on the lower watershed of the Yuna River and its river mouth in the Samaná Bay. Specifically, its design, planning and future implementation will have a key connection with the municipality of Sánchez as it covers the entire coastal strip of the lower watershed and river mouth.</p>																														
<b>Estimation of Implementation Costs</b>	<p>A budget of USD 500,000 is estimated for the development of this project. The cost breakdown of the project is detailed below</p> <table border="1"> <tr> <td><b>Total Investment Costs</b></td> <td><b>\$</b></td> <td><b>-</b></td> </tr> <tr> <td><b>Total Operational Costs</b></td> <td><b>\$</b></td> <td><b>500,000</b></td> </tr> <tr> <td><b>Phase I: Planning and Management</b></td> <td><b>\$</b></td> <td><b>50,000</b></td> </tr> <tr> <td><b>Phase II: Elaboration of the Plan</b></td> <td><b>\$</b></td> <td><b>250,000</b></td> </tr> <tr> <td>Sectoral Assessment</td> <td>\$</td> <td>60,000</td> </tr> <tr> <td>Strategy and Action Plan</td> <td>\$</td> <td>52,000</td> </tr> <tr> <td>Monitoring and Follow-up</td> <td>\$</td> <td>72,000</td> </tr> <tr> <td>Presentation of Work carried out</td> <td>\$</td> <td>66,000</td> </tr> <tr> <td><b>Phase III: Design of Preliminary Projects</b></td> <td><b>\$</b></td> <td><b>200,000</b></td> </tr> <tr> <td><b>PV</b></td> <td><b>\$</b></td> <td><b>500,000</b></td> </tr> </table> <p><i>Data in USD (United States Dollar)</i></p>	<b>Total Investment Costs</b>	<b>\$</b>	<b>-</b>	<b>Total Operational Costs</b>	<b>\$</b>	<b>500,000</b>	<b>Phase I: Planning and Management</b>	<b>\$</b>	<b>50,000</b>	<b>Phase II: Elaboration of the Plan</b>	<b>\$</b>	<b>250,000</b>	Sectoral Assessment	\$	60,000	Strategy and Action Plan	\$	52,000	Monitoring and Follow-up	\$	72,000	Presentation of Work carried out	\$	66,000	<b>Phase III: Design of Preliminary Projects</b>	<b>\$</b>	<b>200,000</b>	<b>PV</b>	<b>\$</b>	<b>500,000</b>
<b>Total Investment Costs</b>	<b>\$</b>	<b>-</b>																													
<b>Total Operational Costs</b>	<b>\$</b>	<b>500,000</b>																													
<b>Phase I: Planning and Management</b>	<b>\$</b>	<b>50,000</b>																													
<b>Phase II: Elaboration of the Plan</b>	<b>\$</b>	<b>250,000</b>																													
Sectoral Assessment	\$	60,000																													
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Monitoring and Follow-up	\$	72,000																													
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<b>Phase III: Design of Preliminary Projects</b>	<b>\$</b>	<b>200,000</b>																													
<b>PV</b>	<b>\$</b>	<b>500,000</b>																													
<b>Facilities, Equipment, Technologies and Human Capital</b>	<p><b>Human Resources</b></p> <ul style="list-style-type: none"> <li>• One (1) Project Manager (graduate, engineer or graduate with at least 5 years of experience in marine science, fisheries management and related projects).</li> <li>• Four (4) technical consultants (engineer or graduate with at least 2 years of experience).</li> </ul> <p><b>Technologies:</b></p> <ul style="list-style-type: none"> <li>• Tracking, research and data collection technologies: It will be necessary to have access to scientific databases, previous research, historical fishing data, as well as tracking and monitoring devices for fishing populations, geographic information systems, etc.</li> </ul> <p><b>Material and Equipment:</b></p> <ul style="list-style-type: none"> <li>• During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground, among others).</li> <li>• During the Participatory Process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.</li> </ul>																														

### Management and Operations Structure

The objective of the project is the development of the Blue Economy Strategy for Bajo Yuna and its river mouth. The management of the project will be in charge of the General Directorate (led by the national Government, and the Ministry of Environment and Natural Resources), with the support of the Work Group (in which the participation of key entities such as CODOPESCA, ANAMAR, among others, is advised), and the technical assistance contracted for the execution of the project. Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 4 technical consultants and local technical support.

Regarding the participation strategy, institutional involvement as mobilizing entities will be necessary, and the guiding of the technical assistance contracted for the dynamization of the participatory sessions that allow generating the commitment and linkage of the interest groups with the blue economy strategy.



### Implementation Timeline

A total duration of one and a half years (18 months) is expected for the development of this project, distributed between 6 months of planning, 8 months of project development and 3 months of design of the preliminary projects.

Although the strategy could be developed in 6 months, a period of 8 months is estimated taking into consideration the conditions of the territory and the need to mobilize and encourage local actors to achieve a participatory strategy that generates commitment from the local community.

The following table reflects the implementation schedule of the activities previously outlined in this project presentation sheet by year and quarter. The activities are:

**A1. Project Planning and Management: Financing processing, hiring of technical assistance, coordination of the Work Plan, development of a participatory strategy and constitution of the Work Group.**

**A2. Elaboration of the Blue Economy Strategy:**

**A2(a). Drafting of the Sectoral Assessment.**

**A2(b). Drafting of the Strategy and Action Plan.**

**A2(c). Drafting of the Monitoring and Follow-up Plan.**

**A2(d). Presentation of the Blue Economy Strategy for Bajo Yuna and its river mouth.**

**A3. Preliminary Project Design:**

**A3(a). Identification of priority initiatives.**

**A3(b). Design of a minimum of 3 preliminary projects.**

YEAR 1				YEAR 2			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A1	A1						
	A2(a)	A2(b) A2(c)	A2(c) A2(d)	A2(d)			
				A3(a)	A3(b)	-	-

### Regulations to Take into Account

- Constitution of the Republic (2015).
- National Development Strategy (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Marine and Coastal Resources Law of the Dominican Republic.
- Creation of the Dominican Fisheries and Aquaculture Council (Law 307-04).
- The Protected Areas and Biodiversity Act that grants the category of Mangroves to the Bajo Yuna National Park to conserve the mangrove forest (Law 202-04).
- Ban on the Capture and Commercialization of Five Species of Crabs (Decree 6-18).
- Protection of Coastal Ecosystems (Decree 112-95).
- Protection and Rehabilitation of the Existing Mangroves on the Coast and on the Islands Adjacent to the Territory of the Dominican Republic of High National Interest Decree 303-87.
- Fishing Exclusion Zones in the Bay of Samaná (Resolution No. 0025-2017).
- Authorization Procedure for Whale Watching in the Banks of La Plata, La Navidad and Samaná Bay (Res. No. 0030-17).
- Regional Strategy for Blue Growth for the Countries of the Central American Integration System (SICA).
- Future National Maritime Strategy.

## Project 1.4

### Elaboration of a Comprehensive Sustainable Fishing Plan

#### Project Presentation Sheet 4

Project 1.4	Elaboration of a Comprehensive Sustainable Fishing Plan
<p><b>Technical Description</b></p>	<p>The increasing scarcity of populations interested in fishing in the lower watershed and mouth of the Yuna River is a palpable reality in the territory. This situation highlights the need to develop a sustainable management model for fishing activity at the local level. In this sense, this project consists of the elaboration of a Comprehensive Sustainable Fishing Plan structured in the following three phases: (i) Planning and management of the project; and, (ii) Elaboration of the Comprehensive Sustainable Fishing Plan.</p> <ul style="list-style-type: none"> <li>• PHASE (I): PLANNING AND MANAGEMENT. It will be the starting point of the project and will serve to create the necessary conditions for the development of the project, including key aspects such as the processing of CIF-NPC financing, the hiring of specialized technical assistance for the elaboration and subsequent implementation of the Comprehensive Sustainable Fishing Plan, or the creation of project management and monitoring mechanisms.</li> <li>• PHASE (II): ELABORATION OF THE COMPREHENSIVE SUSTAINABLE FISHING PLAN. It will be focused on the drafting of the document for the efficient management of fishing resources in the lower watershed and river mouth of the Yuna. This phase must be supported by an inclusive and participatory process designed to ensure that key actors in the fishing sector are a fundamental part of the project from start to finish. The document must contain a sector assessment, a strategy and action plan, and a monitoring and follow-up plan.</li> </ul> <p>The document must have, at least, the following content:</p> <ul style="list-style-type: none"> <li>• Detailed assessment analysis of the current state of fishing resources in Bajo Yuna and the Samaná Bay.</li> <li>• Definition of the strategic lines of work and the action plan.</li> <li>• Continuous monitoring, evaluation and review plan.</li> <li>• Periodic analysis of social and environmental impacts.</li> </ul> <p>Regarding content, the assessment must consider aspects such as: Scientific evaluation of stocks and populations with an interest in fishing in the Yuna estuary and Samaná Bay, evaluation of the impact generated by non-compliance with current regulations, capture maps by type of fishing and captured species, among others. With respect to the development of the strategy and action plan, it is recommended that this section take into consideration, at least, the following aspects:</p> <ul style="list-style-type: none"> <li>• Renewal of fishing gear, focusing on traditional, sustainable uses with lower environmental impact.</li> <li>• Improving the competitiveness of local fishing activity through innovation, diversification of products offered, and improvement of the marketing strategy.</li> <li>• Provision, adaptation and/or maintenance of equipment and infrastructure that support the development of fishing activity.</li> <li>• Compliance with applicable laws, regulations or standards.</li> <li>• Improvement of information systems on fishing activity to facilitate informed decision making.</li> <li>• Governance for the co-management of the fishing activity in the Bajo Yuna Watershed and its river mouth.</li> </ul> <p>Finally, although this project does not consider the execution of the plan, it is estimated that its future implementation should have a duration of no less than 5 years. For the execution of the plan, it is recommended to take into account, at a minimum, the following activities: Constitution of a Steering Committee to monitor it; selection, hiring and training of human resources for the implementation of the plan; execution of planned actions; holding periodic meetings and preparing monitoring reports, among others.</p>

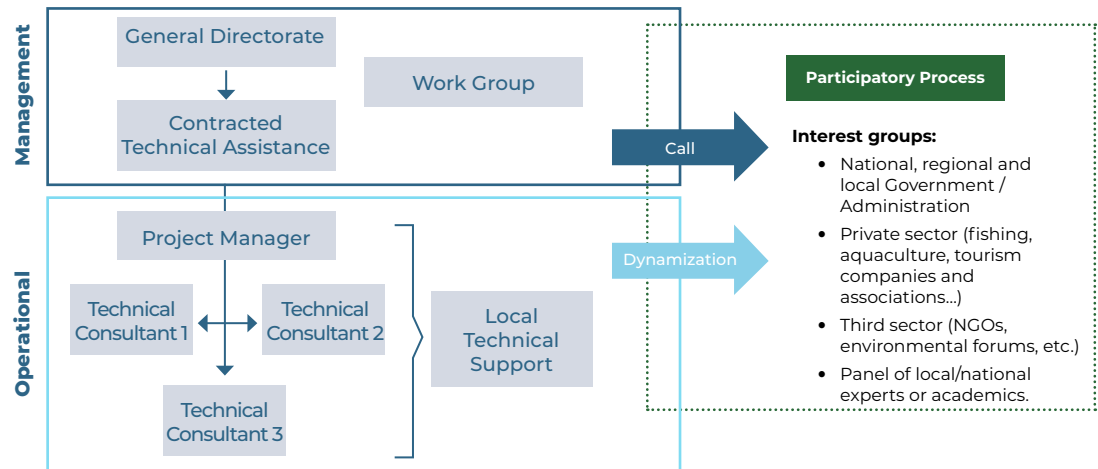
<b>Specific Activities</b>	<ol style="list-style-type: none"> <li>1. Project Planning and Management: Processing of financing, contracting of technical assistance, coordination of the Work Plan, development of a participatory strategy and constitution of the Work Group.</li> <li>2. Elaboration of the Comprehensive Fishing Plan: <ol style="list-style-type: none"> <li>a. Drafting of the Sectoral Assessment.</li> <li>b. Drafting of the Strategy and Action Plan.</li> <li>c. Drafting of the Monitoring and Follow-up Plan.</li> <li>d. Presentation of the Comprehensive Sustainable Fishing Plan.</li> </ol> </li> </ol>																											
<b>Potential Areas</b>	<p>The strategy is expected to focus on the lower watershed of the Yuna River and its river mouth in Samaná Bay. Specifically, the design, planning and future implementation of the plan will have a key connection with the municipality of Sánchez as it covers the entire coastal strip of the lower watershed and mouth of the Yuna River.</p>																											
<b>Estimation of Implementation Costs</b>	<p>A budget of USD 300,000 is estimated for the development of this project. The cost breakdown of the project is detailed below.</p> <table border="1"> <tr> <td><b>Total Investment Costs</b></td> <td><b>\$</b></td> <td><b>-</b></td> </tr> <tr> <td><b>Total Operational Costs</b></td> <td><b>\$</b></td> <td><b>300,000</b></td> </tr> <tr> <td><b>Phase I: Planning and Management</b></td> <td><b>\$</b></td> <td><b>30,000</b></td> </tr> <tr> <td><b>Phase II: Elaboration of the Plan</b></td> <td><b>\$</b></td> <td><b>270,000</b></td> </tr> <tr> <td>Sectoral Assessment</td> <td>\$</td> <td>115,000</td> </tr> <tr> <td>Strategy and Action Plan</td> <td>\$</td> <td>45,536</td> </tr> <tr> <td>Monitoring and Follow-up</td> <td>\$</td> <td>70,000</td> </tr> <tr> <td>Presentation of Work carried out</td> <td>\$</td> <td>40,000</td> </tr> <tr> <td><b>PV</b></td> <td><b>\$</b></td> <td><b>300,000</b></td> </tr> </table> <p><i>Data in USD (United States Dollar)</i></p>	<b>Total Investment Costs</b>	<b>\$</b>	<b>-</b>	<b>Total Operational Costs</b>	<b>\$</b>	<b>300,000</b>	<b>Phase I: Planning and Management</b>	<b>\$</b>	<b>30,000</b>	<b>Phase II: Elaboration of the Plan</b>	<b>\$</b>	<b>270,000</b>	Sectoral Assessment	\$	115,000	Strategy and Action Plan	\$	45,536	Monitoring and Follow-up	\$	70,000	Presentation of Work carried out	\$	40,000	<b>PV</b>	<b>\$</b>	<b>300,000</b>
<b>Total Investment Costs</b>	<b>\$</b>	<b>-</b>																										
<b>Total Operational Costs</b>	<b>\$</b>	<b>300,000</b>																										
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Presentation of Work carried out	\$	40,000																										
<b>PV</b>	<b>\$</b>	<b>300,000</b>																										
<b>Facilities, Equipment, Technologies and Human Capital</b>	<p><b>Human Resources:</b></p> <ul style="list-style-type: none"> <li>• One (1) Project Manager (graduate, engineer or graduate with at least 5 years of experience in fisheries management projects and participation in the development of at least 3 sustainable fishing plans).</li> <li>• Three (3) technical consultants (engineer or graduate with at least 2 years of experience in the sector and participation in the development of at least 2 sustainable fishing plans).</li> </ul> <p><b>Technologies:</b></p> <ul style="list-style-type: none"> <li>• Tracking, research and data collection technologies: It will be necessary to have access to scientific databases, previous research reports, historical fishing data, as well as tracking and monitoring devices for fishing populations. All of this, in order to prepare a baseline assessment adjusted to the reality of the territory and that facilitates the appropriate selection of lines of work of the Comprehensive Sustainable Fishing Plan.</li> </ul> <p><b>Material and Equipment:</b></p> <p>Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground).</p> <ul style="list-style-type: none"> <li>• During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground).</li> <li>• During the Participatory Process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.</li> </ul>																											

**Management and Operations Structure**

The objective of the project is the elaboration of the Comprehensive Sustainable Fishing Plan for the Bajo Yuna and its river mouth. The management of the project will be in charge of the General Directorate (led by the national Government, and the Ministry of Environment and Natural Resources), with the support of the Work Group (in which the participation of key entities such as CODOPESCA, the Government of Samaná and the Provincial Secretariat of the Environment, the Sánchez City Council, among others), and the technical assistance contracted for the execution of the project.

Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 3 technical consultants and local technical support.

Regarding the participation strategy, the involvement of public institutions as mobilizing entities will be necessary, and the direction of the technical assistance hired for the promotion of the participatory sessions that allow generating the commitment and linkage of the interest groups with the blue economy strateg



**Implementation Timeline**

A duration of 2 years is expected for the development of this project, 6 of them intended for the elaboration of a solid assessment that makes it possible to make up for the lack of updated data and that supports decision-making in order to prioritize the strategic lines of action.

The following table reflects the implementation schedule of the activities previously outlined in this project presentation sheet by year and quarter. The activities are:

A1. Project Planning and Management: Financing processing, contracting of technical assistance, coordination of the Work Plan, development of a participatory strategy and constitution of the Work Group.

A2. Elaboration of the Comprehensive Fishing Plan:

A2(a). Drafting of the Sectoral Assessment.

A2(b). Drafting of the Strategy and Action Plan.

A2(c). Drafting of the Monitoring and Follow-up.

A2(d). Presentation of the Comprehensive Sustainable Fishing.

YEAR 1				YEAR 2			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A1	A1						
		A2 (a)	A2 (a)	A2 (b)	A2 (b) A2 (c)	A2 (c) A2 (d)	A2 (d)

### Rules and Regulations to take into Account

- Constitution of the Republic (2015).
- National Development Strategy (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Marine and Coastal Resources Law of the Dominican Republic.
- Creation of the Dominican Fisheries and Aquaculture Council (Law 307-04).
- Ban on the Capture and Commercialization of Five Species of Crabs (Decree 6-18).
- Fishing Exclusion Zones in the Bay of Samaná (Resolution No. 0025-2017).
- Protection of Coastal Ecosystems (Decree 112-95).

## Project 1.5

### Support for the Implementation of a Payments for Environmental Services Strategy

#### Project Presentation Sheet 5

Project 1.5	Support for the Implementation of a Payments for Environmental Services Strategy
<h4>Technical Description</h4>	<p>The main objective of the Project for the Support of the Implementation of a Payments for Environmental Services Strategy is to promote the conservation and restoration of natural resources in the Yuna Watershed through the application of a system for the payment for environmental services (PES). This strategy seeks to financially compensate landowners and local communities that adopt sustainable environmental management practices, thus contributing to the protection of key ecosystems and the well-being of local populations.</p> <p>The project will be carried out in several strategic phases:</p> <p><b>1. Assessment and Design Phase:</b> A detailed analysis of the current situation of the Yuna River Watershed will be carried out, identifying priority areas for the implementation of the PES and evaluating the potential of the environmental services offered by these ecosystems. A multidisciplinary work group, including conservation experts, economists, local community representatives and government authorities, will be established to design the conceptual and operational framework of the PES.</p> <p><b>2. Awareness and Training Phase:</b></p> <p>Awareness-raising and training activities will be carried out for landowners, community leaders, local authorities and other relevant stakeholders on the benefits of PES and the requirements for their participation. Educational materials will be developed and participatory workshops will be held to ensure adequate understanding of the program and promote active community participation.</p> <p><b>3. Pilot Implementation Phase:</b></p> <p>Pilot areas within the Yuna River Watershed will be selected for initial implementation of the PES. PES contracts will be established with landowners who commit to adopt conservation and restoration practices specified in the agreements. A monitoring system will be established to assess the impact of the actions implemented and make adjustments as necessary.</p> <p><b>4. Scaling and Replication Phase:</b></p> <p>Once the viability and effectiveness of the PES has been demonstrated in the pilot areas, the program will be scaled to the entire Yuna River Watershed. Partnerships will be established with government institutions, non-governmental organizations and the private sector to ensure the long-term financial and operational sustainability of the program. Replication strategies will be developed to share the lessons learned and promote the adoption of the PES model in other watersheds and regions of the country.</p>

**Specific Activities****Assessment and Design Phase:**

- Carry out a detailed analysis of the ecosystems present in the Yuna River Watershed and their contribution to environmental services.
- Identify priority areas for the implementation of the PES based on the supply and demand of environmental services, as well as the main environmental and social impacts.
- Design the conceptual and operational framework of the PES, including eligibility criteria, the types of environmental services to be compensated, payment mechanisms and monitoring and evaluation indicators.
- Establish a multidisciplinary work group with representatives from different sectors and local communities to validate the PES design and ensure its relevance and viability.

**Awareness and Training Phase:**

- Develop educational and outreach materials on the benefits of the PES and the commitments required to participate in the program.
- Organize workshops and information meetings with landowners, community leaders, local authorities and other relevant actors to raise awareness about the program and inform them about the technical and administrative aspects of it.
- Facilitate the active participation of the community in the definition of eligibility criteria and in the elaboration of PES contracts.

**Pilot Implementation Phase:**

- Select pilot areas within the Yuna River Watershed based on the results of the assessment and the design of the PES.
- Negotiate and establish PES contracts with landowners who commit to implementing agreed conservation and restoration practices.
- Develop a monitoring and evaluation system to track the progress of implemented actions, assess their impact on environmental services and make adjustments as necessary.
- Provide technical and financial support to PES beneficiaries to ensure the effective implementation of the agreed measures.

**Scaling and Replication Phase:**

- Assess the results and lessons learned from the pilot to inform the scale-up of the program at the level of the entire Yuna River Watershed.
- Establish strategic partnerships with government institutions, non-governmental organizations, private companies and other key actors to ensure the long-term financial and operational sustainability of the program.
- Develop replication strategies to disseminate the PES model to other watersheds and regions of the country, adapting it to the specific conditions of each context and promoting its adoption by new beneficiaries.

**Potential Areas**

This activity is applicable throughout the territory of the Yuna Watershed.

**Estimation of Implementation Costs**

A budget of USD 400,000 is estimated for the development of this project. The cost breakdown of the project is detailed below.

<b>Total Costs</b>	\$	<b>400,000</b>
<b>Phase I: Assessment and Design</b>	\$	<b>80,000</b>
<b>Phase II: Awareness and Training</b>	\$	50,000
<b>Phase III: Pilot Implementation</b>	\$ 200,000	
<b>Phase IV: Program Scaling and Replication</b>	\$	70,000
<b>PV</b>	<b>\$</b>	<b>400,000</b>

Data in USD (United States Dollar)

### Facilities, Equipment, Technologies and Human Capital

#### Human Resources:

- General Project Coordinator.
- Phase Coordinators.
- Technical Specialists in environmental conservation, economics, community relations, etc.
- Administrative and support staff for logistical and administrative tasks.
- Facilitators for workshops and awareness activities.
- Field staff for monitoring and tracking actions.

#### Technological Resources:

- Computer equipment and software for data analysis and reporting.
- Geographic information systems (GIS) for mapping and spatial analysis.
- Online communication and collaboration tools to facilitate remote work and coordination between teams.
- Environmental monitoring equipment (sensors, weather stations, etc.) for the collection of environmental data.

#### Material and Equipment:

- Office supplies (paper, pens, etc.).
- Equipment for workshops and meetings (projectors, whiteboards, teaching material, etc.).
- Vehicles and field equipment for travel and monitoring activities.
- Equipment for installation of environmental infrastructure (such as nurseries for plant production in restoration projects).
- (Paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.

### Management and Operations Structure

- The following is proposed for the management and operation structure:

#### Steering Committee:

- Responsible for the general supervision of the project.
- Formed by representatives of relevant government institutions, non-governmental organizations, and possibly community representatives.
- Responsible for strategic decision making and resource allocation.

#### Project Coordination Team:

- General Coordinator: Responsible for the coordination and daily management of the project.
- Phase Coordinators: One for each phase of the project, responsible for guiding the specific activities of each stage.
- Technical Specialists: Experts in environmental conservation, economics, community relations, among others, to provide specialized technical advice in each phase of the project.
- Work Groups by Phase:
  - Assessment and Design Phase: Multidisciplinary group in charge of carrying out the detailed analysis, identifying priority areas and designing the conceptual and operational framework of the PES.
  - Awareness and Training Phase: Team dedicated to developing educational materials, organizing workshops and informational meetings, and facilitating community participation.
  - Pilot Implementation Phase: Team in charge of selecting pilot areas, establishing PES contracts, developing monitoring systems, and providing technical and financial support to beneficiaries.
  - Scaling and Replication Phase: Group responsible for evaluating results, establishing strategic partnerships and developing replication strategies.

**Implementation Timeline**

A duration of 2 years is expected for the development of this project, distributed as follows according to the aforementioned phases:

YEAR 1				YEAR 1			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase 1	Phase 1						
		Phase 2	Phase 2				
				Phase 3	Phase 3	Phase 3	Phase 3
						Phase 4	Phase 4

**Rules and Regulations to take into Account**

- Constitution of the Republic (2015).
- National Development Strategy (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Payment for Environmental Services Law (Law 44-18).
- Draft regulations for the application of Law 44-18.

**Project 1.6****Support for the Implementation of a NbS Portfolio****Project Presentation Sheet 6**

Project 1.6	Support for the Execution of a Portfolio of Nature-Based Solutions (NbS)				
<b>Technical Description</b>	<p>The following Nature-Based Solutions make up a portfolio with the possibility of being applied in prioritized micro-watersheds of the Yuna Watershed.</p> <table border="1"> <thead> <tr> <th>NbS</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><b>Restoration</b></td> <td>Ecosystem restoration is a set of planned and strategic actions designed to reverse or mitigate the negative impacts that have affected an ecosystem and return it to its original state or a healthier and more sustainable condition. This process seeks to restore biodiversity, functionality and ecosystem services that an ecosystem provides to human communities and the environment in general. Restoring ecosystems is essential to conserve biodiversity, improve resilience to climate change, and positively contribute to ecosystem services. It can also have economic and social benefits by providing jobs and environmental services to local communities. Reforestation activities in the watershed will be carried out through this NbS.</td> </tr> </tbody> </table>	NbS	Description	<b>Restoration</b>	Ecosystem restoration is a set of planned and strategic actions designed to reverse or mitigate the negative impacts that have affected an ecosystem and return it to its original state or a healthier and more sustainable condition. This process seeks to restore biodiversity, functionality and ecosystem services that an ecosystem provides to human communities and the environment in general. Restoring ecosystems is essential to conserve biodiversity, improve resilience to climate change, and positively contribute to ecosystem services. It can also have economic and social benefits by providing jobs and environmental services to local communities. Reforestation activities in the watershed will be carried out through this NbS.
NbS	Description				
<b>Restoration</b>	Ecosystem restoration is a set of planned and strategic actions designed to reverse or mitigate the negative impacts that have affected an ecosystem and return it to its original state or a healthier and more sustainable condition. This process seeks to restore biodiversity, functionality and ecosystem services that an ecosystem provides to human communities and the environment in general. Restoring ecosystems is essential to conserve biodiversity, improve resilience to climate change, and positively contribute to ecosystem services. It can also have economic and social benefits by providing jobs and environmental services to local communities. Reforestation activities in the watershed will be carried out through this NbS.				

SbN	Descripción
<b>Conservation</b>	<p>Conservation is a continuous action, focused on the preservation and protection of the natural environment in its original state or in healthy conditions to maintain its biodiversity, ecological integrity and ecosystem functions. This involves preventing degradation, habitat loss and species extinction within these ecosystems. Conservation can involve the creation of protected areas, the sustainable management of natural resources, and the implementation of conservation policies.</p> <p>The fundamental goal of conservation is the long-term protection of nature and the promotion of sustainable coexistence between human communities and natural environments. This involves the adoption of environmentally responsible management practices, environmental education and awareness, and collaboration between governments, non-governmental organizations and society at large to ensure the survival and health of these critical ecosystems.</p>
<b>Wetland</b>	<p>The constructed wetland acts as a natural filter, especially in solids retention, absorption of contaminants (organic matter, nitrogen and phosphorus), and degradation of pathogens. In each system, a primary treatment system should be considered to reduce sediment. A constructed wetland with horizontal subsurface flow is considered, which is supported by a layer of stones or gravel (thicker on the sides to prevent the pipe from clogging) so that the roots of the wetland plants can be supported. It has an inlet and outlet pipe. It is an ecological and sustainable system that requires less use of chemicals and has low operating costs and minimal maintenance.</p>
<b>Ditch</b>	<p>They help to redirect and take advantage of runoff water that comes from an area of higher altitude (some cases of success due to melted snow precipitation). These ditches function as micro reservoirs that hold back water and feed aquifers. They are characterized because their design follows contour lines and maintains the dimensions of depth, length and width. Its construction is possible if there are adjacent lands and a gradient above, in such a way that it is possible to take advantage of runoff and melted snow for places that have snow on the upper part. It is important to clarify that the design is subject to the contours of the terrain.</p>
<b>Agroforestry</b>	<p>Strategy to recover degraded landscapes and abandoned lands that can be reincorporated into agricultural production (Ramirez-Soto, A-F., Et al 2022). Agroforestry deliberately incorporates the planting of trees in agricultural crops and silvopastoral systems, allowing carbon sequestration in trees and soil (Meza, L. and Rodríguez, A., 2021). This NbS seeks human well-being through the provision of constant and healthy food (short, medium and long-term crops). Ideally, it should be developed together with an ecological restoration NbS. In this sense, Agroforestry systems use the force of nature to create abundant crops in each phase of the natural recovery process of vegetation. The sustenance of production and its social benefits can be strengthened with a robust green infrastructure that ensures water recharge and the permanence of biodiversity (Ramirez-Soto, A-F., Et al 2022).</p>
<b>Silvopastoral</b>	<p>This is an agricultural practice that combines livestock with tree and shrub vegetation, prioritizing native species (The Nature Conservancy, 2021). Through this, multiple environmental benefits are obtained, such as improvement in water quality and reduction of sediments and pathogens (UNESCO, 2018).</p> <p>It is carried out through adequate grazing management, management of distribution structures and land treatment to optimize results.</p>

SbN	Descripción
<b>Biofilter</b>	This is an arrangement of bush and grass elements approximately 10 meters from the edge of the river bed or stream where there is a transition to agricultural cultivation with a gabion composed of easily biodegradable organic carbon, for example, wood sawdust, straw, crushed garden waste (branches, leaves), leaf compost, oak pallet wood, tree bark, crop residues, (which must be readjusted from time to time) which accentuates the biochemical reduction of nitrates or nitrites to nitrogen gas with simultaneous oxidation of organic compounds.
<b>Lagoon</b>	They are artificial lagoons that have water permanently so they allow the proliferation of aquatic flora and fauna. Through retention, a procedure is carried out by which rainwater is retained for considerable periods, making the water continue with the hydrological cycle via infiltration, filtration, evapo transpiration, without the use of direct discharge. The constant water volume hides unsightly sediment banks and increases performance in the removal of nutrients, heavy metals, coliforms and organic matter. The fundamental characteristic that retention ponds have is their capacity to eliminate pollutants, either by sedimentation or by biodegradation processes carried out by the plants and microorganisms that live there.
<b>Mangrove Restoration</b>	<p>Mangroves are ecologically important coastal forests found in intertidal areas and provide vital habitats for various species of plants and animals. Drago forests, for their part, are subtropical ecosystems of trees resistant to coastal conditions and that are habitat for countless vulnerable continental species, which facilitate the regulation of the local climate, retain soil, control erosion and contribute to carbon sequestration.</p> <p>The associations between the most dominant mangrove species in the Bay towards the mouth of the Yuna and described by Sherman (1996) are: <i>Rhizophora mangle</i> (red mangrove), <i>Laguncularia racemosa</i> (white mangrove), <i>Avicennia germinans</i> (black mangrove), and <i>Conocarpus erectus</i> (button mangrove). The protection against flooding and erosive phenomena on the coasts provided by mangroves and <i>P. officinalis</i> or Drago forests, as well as their capacity to constitute habitats for local and migratory biodiversity, result in goods and services vital for the sustainability of Samaná. That is why its restoration and generation of new coverage is important to strengthening the marine-coastal landscape with nature-based solutions.</p>

### Specific Activities

Capacities related to the common factors of all NbSs:

Capacity Development at the Local Level: In the vast majority of cases, there must be a training space so that the local workforce has the information and direction necessary for the generation of these NbSs.

Use of Native Species Nurseries: In the different NbSs where the use of plants is required, it is important to have the support of local nurseries.

Monitoring: It is very important to demonstrate that NbSs meet an objective and see how this process is progressing. For this reason, there should always be a monitoring plan.

Involvement of Stakeholders at Different Levels: Each NbS is placed in a different context; it is not the same to do an agroforestry program in a high area or in the coastal zone. Therefore, stakeholders (or actors involved in the management of the NbS on site) are involved.

**Potential Areas**

From the entire watershed, 5 micro-watersheds with these characteristics have been prioritized:

Prioritized Micro- Watershed	Area (ha)	Area Intervened with NbS (ha)
Upper Tíreo Watershed	8.266	6.391
Upper Watershed, Sur de Bonao	2.612	1.931
Middle Watershed, Cenovi	3.444	2.029
Lower Watershed, Este de Cotuí	2.572	2.012
Lower Watershed, Coastal Zone	9.790	1.180
<b>TOTAL</b>	<b>26.666</b>	<b>13.542</b>

**Estimation of Implementation Costs**

A budget of USD 400,000 is estimated for the development of this project. The cost breakdown of the project is detailed below.

<b>Total Costs</b>	\$	<b>400,000</b>
<b>Phase I: Assessment and Design of Support</b>	\$	80,000
<b>Phase II: Strategy and Implementation</b>	\$	90,000
<b>Phase III: Training</b>	\$	130,000
<b>Phase IV: Monitoring and Evaluation</b>	\$	100,000
<b>PV</b>	\$	<b>400,000</b>

*Data in USD (United States Dollar)*

**Facilities, Equipment, Technologies and Human Capital**

**Monitoring Equipment:** In general, there must be a way to monitor at least the investment objectives: Decrease in sediments, decrease in nutrients (especially Nitrogen), and increase in base flow in times of drought.

**Human Capital:** The work to be carried out must be coordinated by a person who has experience in project management and additional experience in NbSs.

**Management and Operations Structure**

Since there are so many NbSs in different places, there should be a team that can provide guidance to each team in a way that integrates the learning from previous experiences within the same project. Using the adaptive management framework:

Each of the NbS in the different implementation locations must have a main investment objective and some co-benefits which can be reported later.

<b>Implementation Timeline</b>	A duration of 2 years is expected for the development of this project.
<b>Rules and Regulations to take into Account</b>	<ul style="list-style-type: none"> <li>• Constitution of the Republic (2015).</li> <li>• National Development Strategy (Law 1-12).</li> <li>• General Law on Environment and Natural Resources (Law 64-00).</li> <li>• Territorial Planning, Land Use and Human Settlements Law (Law 368-22).</li> <li>• Cooperative Associations (Law 127-64).</li> <li>• Forestry Law of the Dominican Republic (Law 57-18) G.O. No. 10924, 2018.</li> <li>• Water Sector Cabinet Decree of 2020 (Decree 498-20).</li> <li>• Regulation of Water for Human Consumption of 2005 (Decree No. 42-05).</li> </ul>

## COMPONENT 2. Restoration and Conservation of Ecosystems

### Project 2.1A

Implementation of a Portfolio of Nature-Based Solutions in Prioritized Micro-Watersheds of the Upper Watershed and Coastal Area of the Yuna

#### a) Micro-Watershed 1 – Upper Tireo Watershed

#### Project Presentation Sheet 7

Project 2.1a	Tireo Prioritized Micro-Watershed (Upper Watershed)
<b>Technical Description</b>	<p>The project focuses on the proposal of 7 nature-based solutions. The micro-watershed has a total of 8,266 hectares, and 1,875 hectares are proposed for the implementation of NbSs (around 20% of the surface).</p> <p>Most of the coverage where a change would occur is in the grasslands cover, in which ditch NbSs would be implemented to a greater extent, followed by restoration NbSs and, to a lesser extent, biofilter NbSs. On the other hand, in crop coverage it is mostly proposed to make restoration NbSs and a lower percentage in wetlands. Finally, the conservation NbSs are planned mostly in tree cover and to a lesser extent in shrubs. In the areas closest to the river bank where there is agriculture, restoration and biofilter interventions will be carried out. In agricultural areas, intervention with infiltration ditches, NbSs, is proposed, which was validated for this area in workshops with relevant actors.</p> <p>An analysis was carried out with two groups of services: There is influence on PTAP and two dams, and a reduction in the sediments and nutrients that reach these two infrastructures is expected.</p> <p>It should be noted that the active participation of local communities will be essential in all stages of the project.</p>

**Specific Activities**

**Feasibility:**

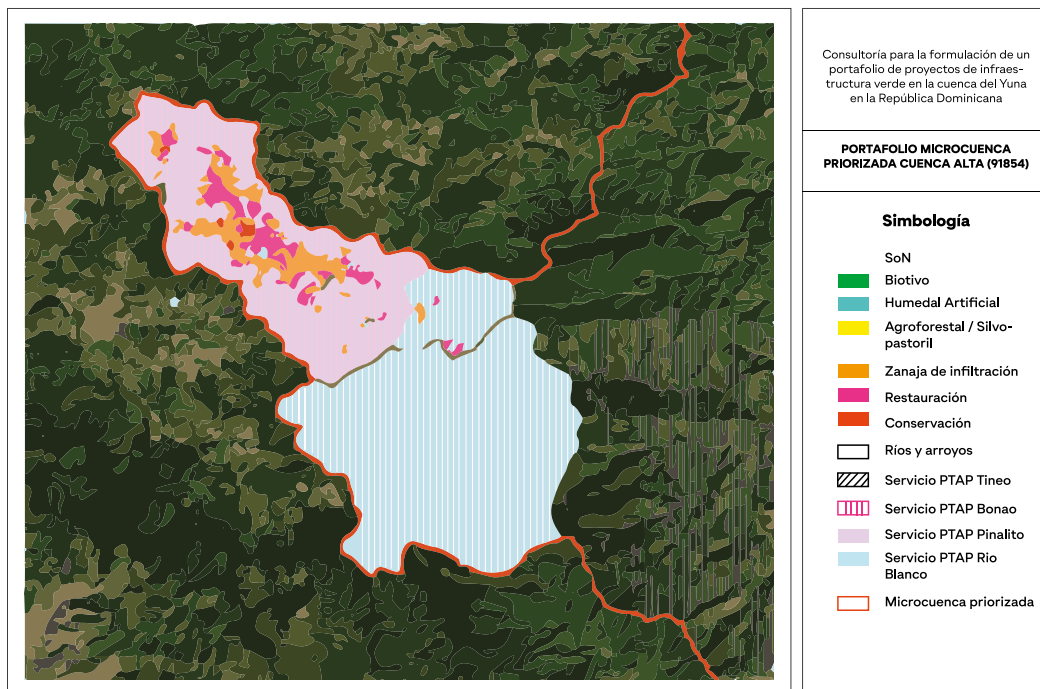
- A detailed study must be carried out to provide viability, due to different factors, to the areas where the NbSs are proposed, a property study must be taken into consideration and see if there are public lands where the implementation can begin.
- Agreements with owners so that the acquisition of land is not necessary, given that it is not a value that is included in the project costs.
- Selection of species for restoration.
- More exact location of the infiltration ditches, to be able to train the people who are going to carry out this NbSs.

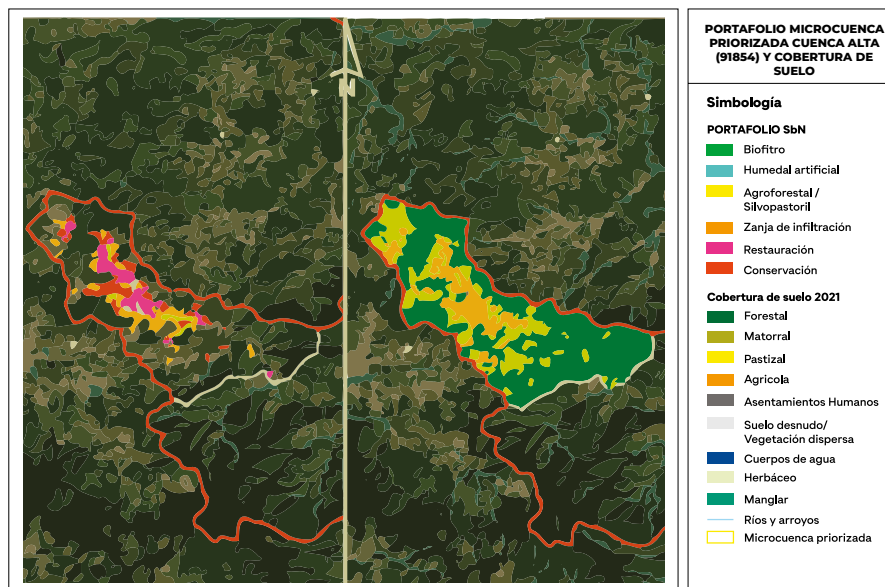
**Implementation:**

- You must have a seedling supplier (nursery) that is close to the area and transport them according to the planting plan you have.
- Infiltration ditches require local labor; these people can be trained quickly.

For the wetland: 1. Preparation of the land takes 1 to 2 months, depending on the area to be intervened (It is recommended to start in the season of little rain so that the land preparation work does not take more time). Approximately 3 months are estimated for construction. And when starting up, it must be taken into account that once built and planted, it can take up to 3 months for the plants to co-opt the area, so at first it may look a little desolate. The treatment of bacteria in the bio-film layers in the gravel will be optimal from month 3.

**Potential Areas**





### Estimation of Implementation Costs

CIF-NPC funds will co-finance a budget amount of USD 4,500,000 for the development of this project. The total cost breakdown of the project is detailed below.

TOTAL CAPEX: US \$ 21.123.579

TOTAL OPEX: US \$ 25.484.388

TOTAL CAPEX + OPEX: US \$ 46.607.967

Upper Watershed, Tiro Micro- Watershed 91854		
Restoration	Area Ha	675
	CAPEX	\$ 3.037.500
	OPEX	\$ 14.142.857
Conservation	Area Ha	150
	CAPEX	\$ 785.700
	OPEX	\$ 439.313
Wetland	Area Ha	25
	CAPEX	\$ 2.449.132
	OPEX	\$ 811.960
Ditch	Area Ha	750
	CAPEX	\$ 110.633
	OPEX	\$ 323.750
Agroforestry	Area Ha	125
	CAPEX	\$ 6.989.794
	OPEX	\$ 5.559.366
Silvopastoral	Area Ha	125
	CAPEX	\$ 4.767.188
	OPEX	\$ 3.750.000
Biofilter	Area Ha	25,00
	CAPEX	\$ 2.983.631
	OPEX	\$ 457.143

### Facilities, Equipment, Technologies and Human Capital

#### Infrastructure:

- The most complex NbS in terms of infrastructure is the wetland for pre-treatment of water before entering the PTAP. In each system, a primary treatment system should be considered to reduce sediments. A constructed wetland with horizontal subsurface flow is considered, which is supported by a layer of stones or gravel (thicker on the sides to prevent the pipe from clogging) so that the roots of the wetland plants can be supported. It has an inlet and outlet pipe. It is an ecological and sustainable system that requires less use of chemicals and has low operating costs and minimal maintenance.
- The biofilter has fewer complexities; however, a space of about 12 meters must be considered. It is an arrangement of shrubs and grass elements, approximately 10 meters from the edge of the river bed or stream where there is a transition to agricultural crops with a gabion made up of easily biodegradable organic carbon, for example, wood sawdust, straw, shredded garden waste (branches, leaves), leaf compost, oak pallet wood, tree bark, crop residues, (which must be readjusted from time to time) which accentuates the biochemical reduction of nitrates to nitrogen gas with simultaneous oxidation of organic compounds.

#### Equipment:

- For the training, there must be an ideal space for the theoretical part and a space where the different techniques for planting trees, opening ditches, etc., can be demonstrated.

#### Technologies:

- A monitoring system is required to see the efficiencies managed by the different NbSs, which is why some require measurement equipment.

#### Human Capital:

- It is important to have a NbS expert who has experience as a consultant in different demonstration sites, either on site or as a literature review, and who has written some NbS evaluation methodologies relating ecosystem services.

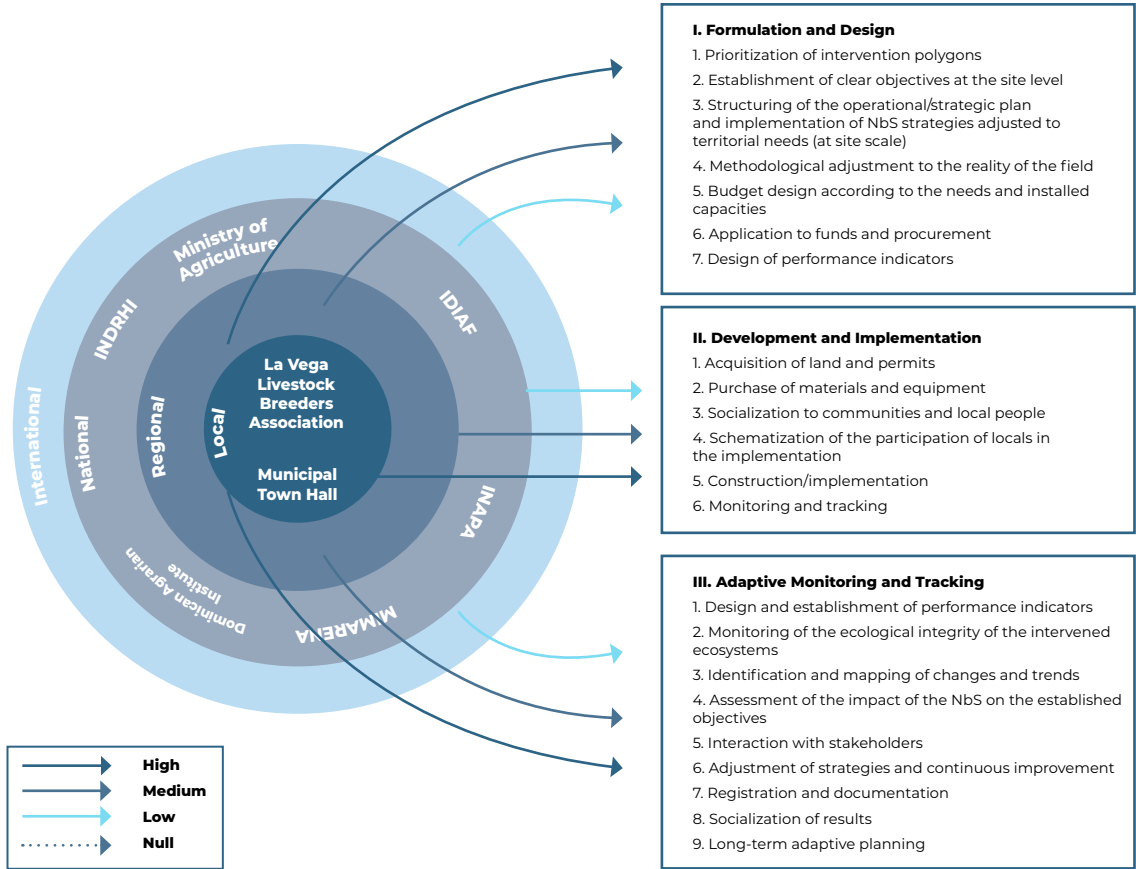
The workforce should be local.

### Management and Operations Structure

The involvement of interested parties is proposed based on three phases:

- I. Formulation and Design.
- II. Development and Implementation.
- III. Adaptive Monitoring and Tracking.

It seeks to actively involve civil society and the private sector, taking into account the importance of citizen participation and community dialogue in territorial intervention processes. It is also expected to identify opportunities to establish strategic partnerships and collaborations that can strengthen the implementation and sustainability of NbSs. Next, the involvement of the prioritized parties is proposed according to the different phases proposed.



**Implementation Timeline**

It is a project that has been planned for 40 years, in some NbSs a shorter life cycle is proposed, so reinvestment must be considered in some cases.

NbS	Lifecycle
Restoration, Conservation, Constructed Wetland, Infiltration Ditches and Biofilter	40 years
Agroforestry	10 years
Silvopastoral	20 years

**Rules and Regulations to take into Account**

- Constitution of the Republic (2015).
- National Development Strategy 2030 (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Protected Areas Sector Act of 2004 (Law 202-04).
- Cooperative Associations (Law 127-64).
- Forestry Law of the Dominican Republic (Law 57-18) G.O. No. 10924, 2018.
- Water Sector Cabinet Decree of 2020 (Decree 498-20).
- Decree No. 42-05, of 2005, establishes the Regulation of Water for Human Consumption
- Future National Maritime Strategy.

## Project 2.1B

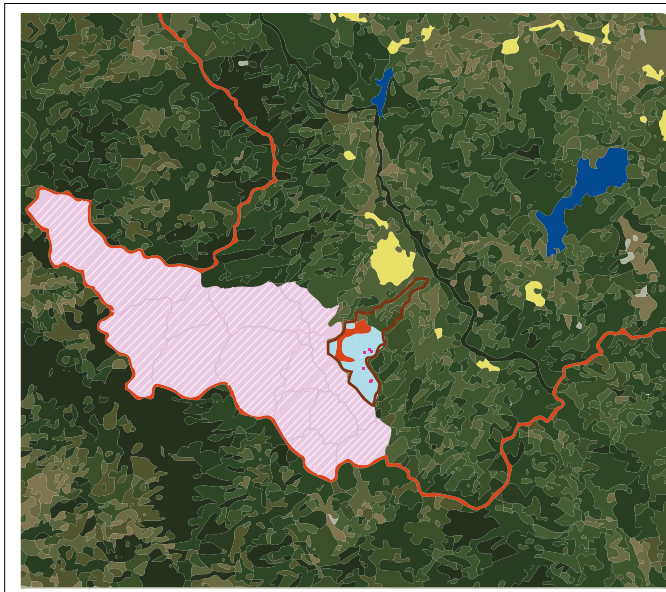
### Implementation of a Portfolio of Nature-Based Solutions in Prioritized Micro-Watersheds of the Upper Watershed and Coastal Area of the Yuna

#### b) Micro-Watershed 2 – Upper Watershed of Sur de Bonao

#### Project Presentation Sheet 8

Project 2.1b	Bonao Prioritized Micro-Watershed (Upper Watershed)
<b>Technical Description</b>	<p>The project focuses on the proposal of 7 nature-based solutions. The micro-watershed has a total of 8,612 hectares, and 682 hectares are proposed for the implementation of NbSs (around 26% of the surface).</p> <p>Most of the coverage where a change would occur is in the grasslands cover, in which ditch NbSs would be implemented to a greater extent, followed by restoration NbSs and, to a lesser extent, biofilter NbSs. On the other hand, in crop coverage it is mostly proposed to make restoration NbSs and a lower percentage in wetlands. Finally, the conservation NbSs are planned mostly in tree cover and to a lesser extent in shrubs.</p> <p>An analysis was carried out with two groups of services: There is influence on PTAP and two dams, and a reduction in the sediments and nutrients that reach these two infrastructures is expected.</p>
<b>Specific Activities</b>	<p><b>Feasibility:</b></p> <ul style="list-style-type: none"> <li>• A detailed study must be carried out to provide viability, due to different factors, to the areas where the NbSs are proposed, a property study must be taken into consideration and see if there are public lands where the implementation can begin.</li> <li>• Agreements with owners so that the acquisition of land is not necessary, given that it is not a value that is included in the project costs.</li> <li>• Selection of species for restoration.</li> <li>• Conservation zones must be understood in as much detail as possible to see if it is necessary to make a fence to prevent the entry of livestock and identify places where invasive and exotic species may exist.</li> </ul> <p><b>Implementation:</b></p> <ul style="list-style-type: none"> <li>• In this micro-watershed it has been decided to group the NbSs in the highest part, taking the PTAP as a reference point; very few hectares of wetlands are proposed given that the cleaning work expected for the water resource is less than in other places with higher pollution points upstream. Therefore, wetlands will be the last link in the chain before the water reaches the PTAP. In the wetland upstream area, 3 NbSs are proposed, mainly conservation, then restoration and, finally, ditches (especially in grassland areas). All of these NbSs are close to a river that has little intervention, for which these measures are proposed.</li> </ul>

Potential Areas



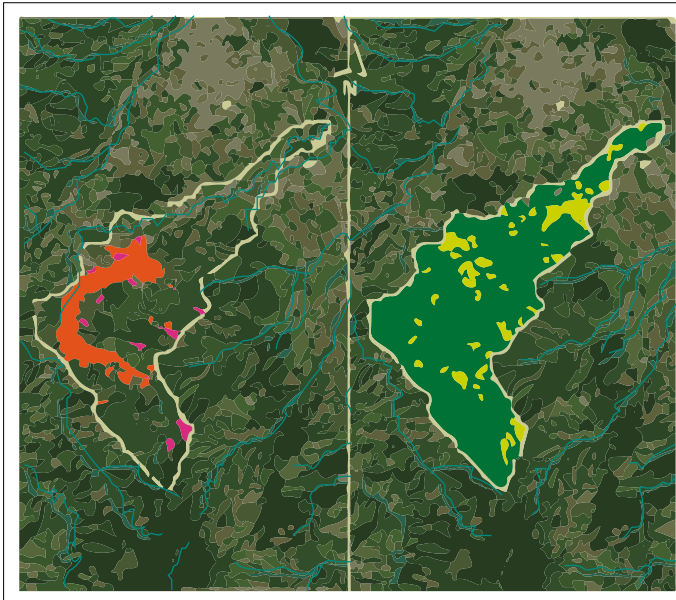
Consultoría para la formulación de un portafolio de proyectos de infraestructura verde en la cuenca del Yuna en la República Dominicana

PORTAFOLIO MICROCUENCA PRIORIZADA CUENCA ALTA (91935)

Simbología

PORTAFOLIO Sbn

- Biofitro
- Humedal artificial
- Agroforestal / Silvopastoril
- Zanja de infiltración
- Restauración
- Conservación
- Servicio Presa Hatillo
- Servicio PTAP Bonao
- Servicio PTAP Quemados
- Servicio PTAP Jume
- Lago y lagunas
- Presas
- Zona Urbana
- Microcuenca
- Microcuenca priorizada
- Zonificación de cuenca



PORTAFOLIO MICROCUENCA PRIORIZADA CUENCA ALTA (91935) Y COBERTURA DE SUELO

Simbología

PORTAFOLIO Sbn

- Biofitro
- Humedal artificial
- Agroforestal / Silvopastoril
- Zanja de infiltración
- Restauración
- Conservación

COBERTURA DE SUELO 2021

- Forestal
- Matorral
- Pastizal
- Agrícola
- Asentamientos Humanos
- Suelo desnudo / vegetación dispersa
- Cuerpos de agua
- Herbáceo
- Mangfar
- Ríos y arroyos
- Microcuenca
- Microcuenca priorizada

**Estimation of Implementation Costs**

CIF-NPC funds will co-finance a budget amount of USD 4,500,000 for the development of this project. The total cost breakdown of the project is detailed below. Total Capex: US \$ 3.331.577

Total Capex: US \$ 3.331.577

Total Opex: US \$ 4.689.847

TOTAL OPEX + CAPEX: US \$ 8.021.424

NbS		Upper Watershed, Sur de Bonao Micro-Watershed 91935
<b>Restoration</b>	Area Ha	160
	CAPEX	\$ 720.000
	OPEX	\$ 3.352.381
<b>Conservation</b>	Area Ha	365
	CAPEX	\$ 1.911.870
	OPEX	\$ 1.068.994
<b>Wetland</b>	Area Ha	4
	CAPEX	\$ 391.861
	OPEX	\$ 129.914
<b>Ditch</b>	Area Ha	150
	CAPEX	\$ 22.127
	OPEX	\$ 64.750
<b>Agroforestry</b>	Area Ha	0,5
	CAPEX	\$ 27.959
	OPEX	\$ 22.237
<b>Silvopastoral</b>	Area Ha	0,5
	CAPEX	\$ 19.069
	OPEX	\$ 15.000
<b>Biofilter</b>	Area Ha	2
	CAPEX	\$ 238.691
	OPEX	\$ 36.571

**Facilities, Equipment, Technologies and Human Capital****Infrastructure:**

- The most complex NbS in terms of infrastructure is the wetland for pre-treatment of water before entering the PTAP. In each system, a primary treatment system should be considered to reduce sediments. In this micro-watershed there is no need to overstate this primary treatment. A constructed wetland with horizontal subsurface flow is considered, which is supported by a layer of stones or gravel (thicker on the sides to prevent the pipe from clogging) so that the roots of the wetland plants can be supported. It has an inlet and outlet pipe. It is an ecological and sustainable system that requires less use of chemicals and has low operating costs and minimal maintenance.
- The biofilter has fewer complexities; however, a space of about 12 meters must be considered. It is an arrangement of shrubs and grass elements, approximately 10 meters from the edge of the river bed or stream where there is a transition to agricultural crops with a gabion made up of easily biodegradable organic carbon, for example, wood sawdust, straw, shredded garden waste (branches, leaves), leaf compost, oak pallet wood, tree bark, crop residues, (which must be readjusted from time to time) which accentuates the biochemical reduction of nitrates to nitrogen gas with simultaneous oxidation of organic compounds. In this micro-watershed it is planned for a very small area, for which it should be located in a place that has signs of diffuse pollution (mainly from agriculture).

**Equipment:**

- For training, especially intended to train in trenching and planting for reforestation; there must be an ideal space for the theoretical part and a space where the different techniques for planting trees and opening ditches can be practically shown.

**Technologies:**

- A monitoring system is required to see the efficiencies managed by the different NbSs, which is why some require measurement equipment.

**Human Capital:**

- It is important to have an NbS expert who has experience as a consultant in different demonstration sites, either on site or as a literature review, and who has written some NbS evaluation methodologies relating ecosystem services. La fuerza de trabajo debería ser local.

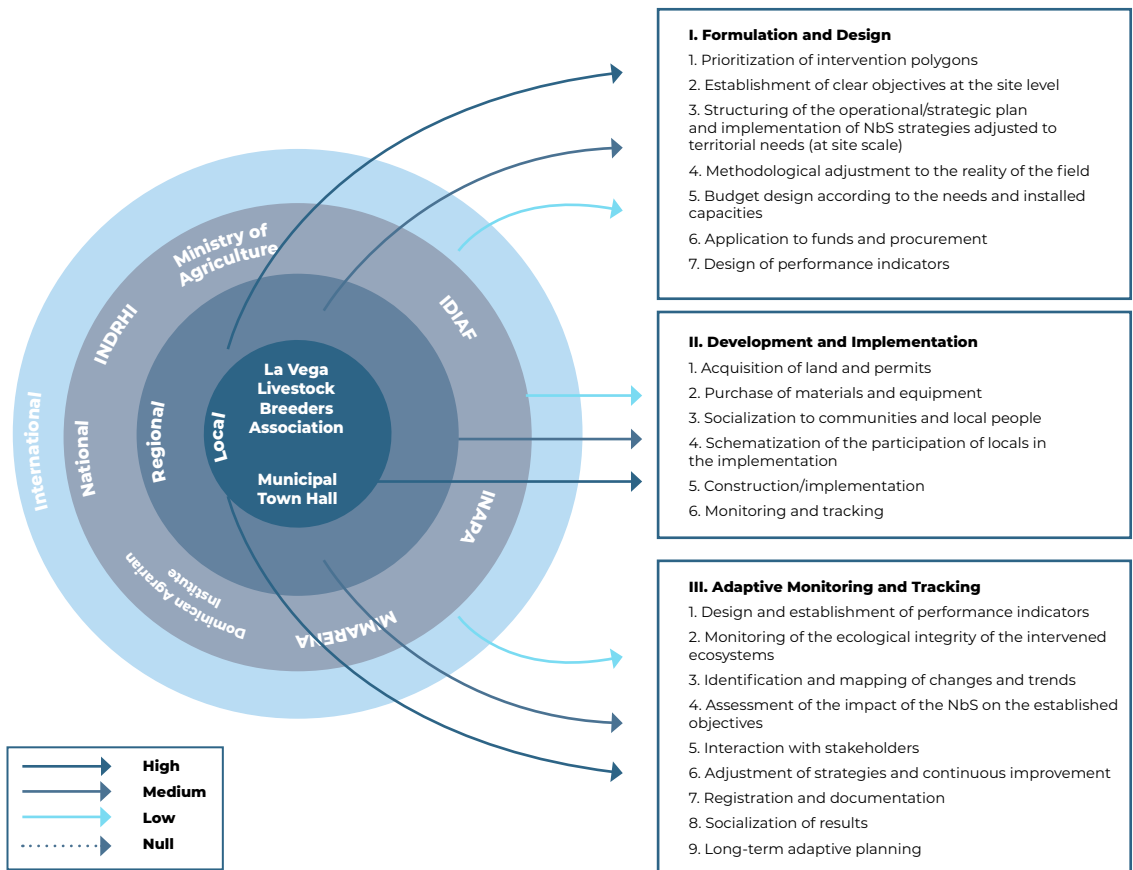
The workforce should be local.

**Management and Operations Structure**

The involvement of interested parties is proposed based on three phases:

- I. Formulation and Design.
- II. Development and Implementation.
- III. Adaptive Monitoring and Tracking.

As presented for the Upper Watershed, Tiero Micro-Watershed, the involvement of prioritized interested parties for the Bonao Micro-Watershed is proposed below in accordance with the different proposed phases.



<b>Implementation Timeline</b>	<p>It is a project that has been planned for 40 years, in some NbSs a shorter life cycle is proposed, so reinvestment must be considered in some cases.</p> <table border="1"> <thead> <tr> <th>NbS</th> <th>Lifecycle</th> </tr> </thead> <tbody> <tr> <td>Restoration, Conservation, Constructed Wetland, Infiltration Ditches and Biofilter</td> <td>40 years</td> </tr> <tr> <td>Agroforestry</td> <td>10 years</td> </tr> <tr> <td>Silvopastoral</td> <td>20 years</td> </tr> </tbody> </table>	NbS	Lifecycle	Restoration, Conservation, Constructed Wetland, Infiltration Ditches and Biofilter	40 years	Agroforestry	10 years	Silvopastoral	20 years
NbS	Lifecycle								
Restoration, Conservation, Constructed Wetland, Infiltration Ditches and Biofilter	40 years								
Agroforestry	10 years								
Silvopastoral	20 years								
<b>Rules and Regulations to take into Account</b>	<ul style="list-style-type: none"> <li>• Constitution of the Republic (2015).</li> <li>• National Development Strategy 2030 (Law 1-12).</li> <li>• General Law on Environment and Natural Resources (Law 64-00).</li> <li>• Territorial Planning, Land Use and Human Settlements Law (Law 368-22).</li> <li>• Cooperative Associations (Law 127-64).</li> <li>• Forestry Law of the Dominican Republic (Law 57-18) G.O. No. 10924, 2018.</li> <li>• Water Sector Cabinet Decree of 2020 (Decree 498-20).</li> <li>• Decree No. 42-05, of 2005, establishes the Regulation of Water for Human Consumption</li> </ul>								

## Project 2.1C

Implementation of a Portfolio of Nature-Based Solutions in Prioritized Micro-Watersheds of the Upper Watershed and Coastal Area of the Yuna

### c) Micro-Watershed 5 – Coastal Zone

#### Project Information Sheet 9

Project 2.1 C	Implementation of a Portfolio of NbSs in the Coastal Zone
<b>Technical Description</b>	<p>The project focuses on the proposal of 7 nature-based solutions. The micro-watershed has a total of 9,789 hectares, and 1,185 hectares are proposed for the implementation of NbSs (around 12% of the surface).</p> <p>A large part of the micro-watershed is located in the Los Haitises National Park, and a small portion corresponds to the protected area of the Bajo Yuna Mangroves. In this sense, 4.91% (480 ha) of the solutions located in this section are focused on conservation, prioritizing actions for the preservation of biodiversity, integrity and ecosystem function that the Los Haitises National Park provides for the watershed. The Yuna valley is home to dense mangroves and draglines, as well as extensive coastal wetlands. Specifically, the polygons designated for this strategy are in a natural corridor-type arrangement that connects the Bajo Yuna Mangrove Natural Park with the Haitises protected area.</p> <p>Polygons for restoration were located in degraded areas close to mangrove and Drago plant covers. Historically, the areas surrounding the Barracote and Yuna rivers have been destined for the development of agricultural activities, therefore, within the agricultural mosaic present at the bifurcation point of both rivers, 125 hectares with potential for the implementation of agroforestry practices were identified.</p> <p>Considering that this micro-watershed perceives and ultimately constitutes a buffer for sediments and water from upstream and agricultural areas, the location of NbSs capable of managing peaks of runoff water to reduce flooding in river systems, receive water from surrounding drainage channels, intercept and infiltrate surface water (aquifer recharge). This is how 20 hectares and 50 hectares of the solutions are prioritized in the portfolio for the implementation of retention lagoons and infiltration ditches, respectively.</p>

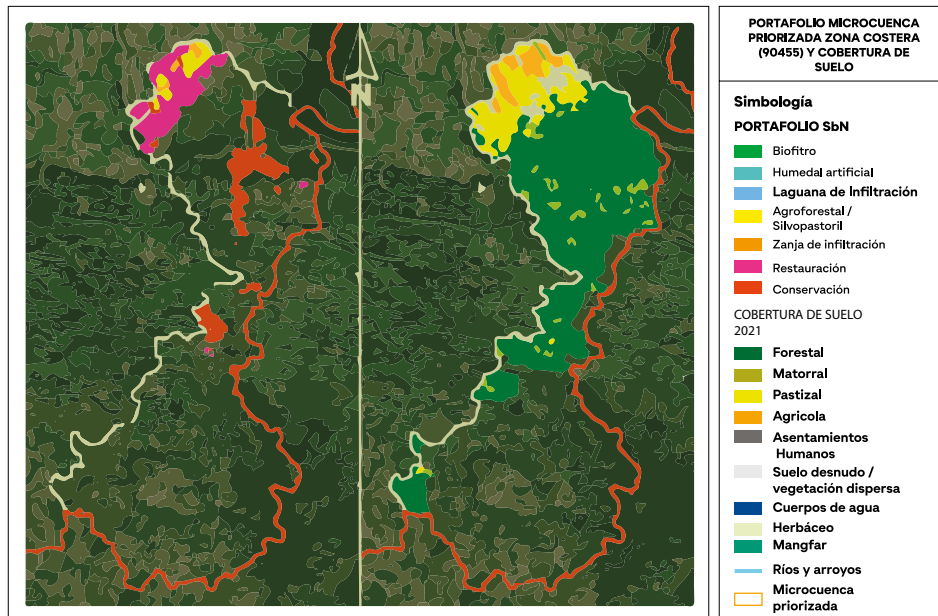
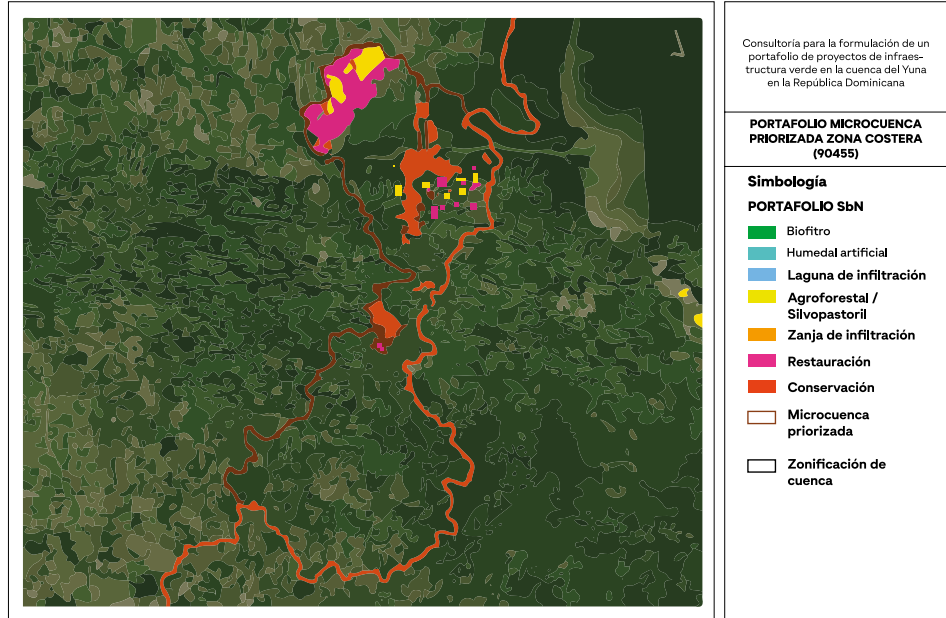
**Specific Activities****Feasibility:**

- In regards to the analysis of land use (2021), it was observed that there are agricultural areas that must be intervened, especially riverside vegetation, which reflects that there are still challenges to better define interventions in agricultural areas, elements that will be assessed in greater detail in a next phase.
- The proposed Mangrove and Drago plant restoration should be considered as an activity where some of the elements of the existing ecosystem can be used.

**Implementation:**

- The implementation of ecosystem-based solutions for the conservation of the marine-coastal watershed associated with the Yuna and Barracote River in the Dominican Republic may require a comprehensive and collaborative approach, which considers:
- Detailed Ecosystem Analysis: Performs detailed studies of the watershed at the site scale, identifying key species, fragile ecosystems, and areas of greatest environmental risk.
- Community Participation: Involve local communities, fishermen, farmers and leaders in decision-making and actions. Their traditional knowledge can be invaluable.
- Continuous Monitoring: Establish long-term monitoring programs to assess ecosystem health, including water quality, marine and terrestrial biodiversity, as well as river dynamics.
- Habitat Restoration: Implement strategies to restore degraded ecosystems, such as reforestation of riparian areas, creation of green corridors and conservation of mangroves and Drago plants.
- Sustainable Resource Management: Promote sustainable agricultural and fishing practices to reduce pollution, overfishing and deforestation.
- Environmental Education: Develop educational programs to increase awareness about the importance of conserving these ecosystems and promoting the adoption of environmentally-friendly practices.
- Interinstitutional Collaboration: Foster partnerships between government entities, non-governmental organizations, academic institutions and companies to maximize resources and efforts.
- Legislation and Enforcement: Support the creation and enforcement of policies and regulations that protect the coastal marine landscape, along with effective compliance and monitoring measures.
- Adaptation to Climate Change: Consider adaptation measures to mitigate the effects of climate change in the watershed and promote the resilience of marine-coastal ecosystems.
- Technological Innovation: Employ innovative technologies, such as remote monitoring systems or geospatial mapping tools, to improve efficiency in resource management and conservation.

Potential Areas



### Estimation of Implementation Costs

CIF-NPC funds will co-finance a budget amount of USD 4,500,000 for the development of this project. The total cost breakdown of the project is detailed below.

Total CAPEX: US\$ 13,303,333

Total OPEX: US\$ 8,545,745

TOTAL OPEX + CAPEX: US\$ 21,849,078

NbS	Lower Watershed, Coastal Zone Micro-Watershed 90455
Conservation	Area Ha CAPEX OPEX
Ditch	Area Ha CAPEX OPEX
Agroforestry	Area Ha CAPEX OPEX
Silvopastoral	Area Ha CAPEX OPEX
Biofilter	Area Ha CAPEX OPEX
Lagoon	Area Ha CAPEX OPEX
Mangrove Restoration	Area Ha CAPEX OPEX

### Facilities, Equipment, Technologies and Human Capital

#### Infrastructure:

- In some cases, there must be an adequate form of access, given that it is an area that is far from the roads. Manual installation of the seedlings can be considered, for this people must have previously determined paths.

#### Equipment:

- For training, especially aimed at training in the development of conservation and planting activities for reforestation, there must be an ideal space for the theoretical part and a space where the different techniques for planting trees can be practically shown.

#### Technologies:

- A monitoring system is required to see the efficiencies managed by the different NbSs, which is why some require measurement equipment.

#### Human capital:

- It is important to have an NbS expert who has experience as a consultant in different demonstration sites, either on site or as a literature review, and who has written some NbS evaluation methodologies relating ecosystem services.

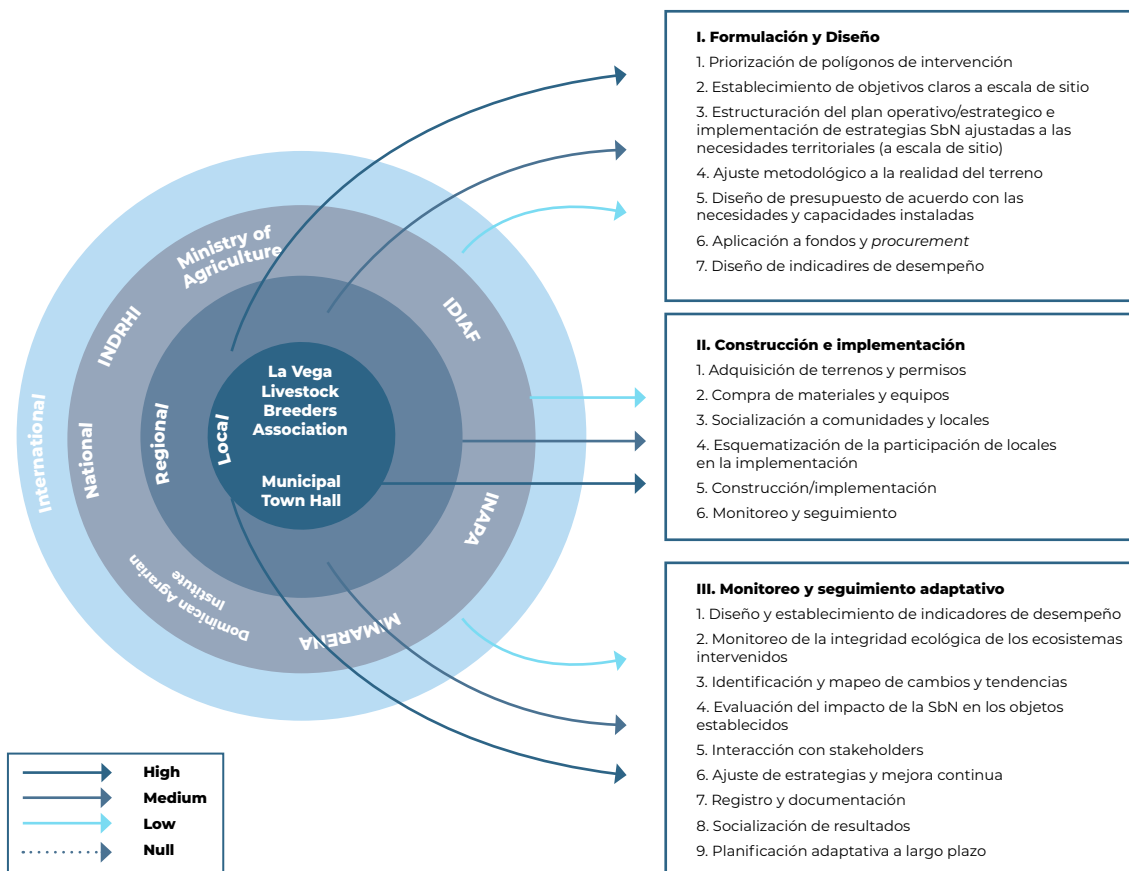
The workforce should be local.

**Management and Operations Structure**

The involvement of interested parties is proposed based on three phases:

- I. Formulation and Design.
- II. Development and Implementation.
- III. Adaptive Monitoring and Tracking.

It seeks to actively involve civil society and the international sector, taking into account the importance of the area for carbon capture projects (the mangrove has 10 times the potential for carbon capture compared to other ecosystems). Next, the involvement of the prioritized parties is proposed according to the different phases proposed.



**Implementation Timeline**

The NbS that has the greatest complexity, given that it is not done anywhere else in the watershed, is the Mangrove and Drago Restoration:

1. Initial Evaluation and Site Selection.
2. Project Planning.
3. Obtaining Seeds or Seedlings.
4. Elaboration and Construction of in situ and ex situ Nurseries.
5. Site Preparation.
6. Sowing and/or Planting (e.g., Direct Sowing, Dispersion Modules).
7. Monitoring and Maintenance.

### Rules and Regulations to take into Account

- Constitution of the Republic (2015).
- National Development Strategy 2030 (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Marine and Coastal Resources Law of the Dominican Republic.
- Protected Areas Sector Act of 2004 (Law 202-04) that grants the category of Bajo Yuna Mangrove National Park to conserve the mangrove forest.
- Territorial Planning, Land Use and Human Settlements Law (Law 368-22).
- Water Sector Cabinet Decree of 2020 (Decree 498-20).
- Creation of the Dominican Fisheries and Aquaculture Council (COPESCA) (Law 307-04).
- Cooperative Associations (Law 127-64).
- Ban on the Capture and Commercialization of Five Species of Crabs (Decree 6-18).
- Fishing Exclusion Zones in the Bay of Samaná (Resolution No. 0025-2017).
- Protection of Coastal Ecosystems (Decree 112-95).
- Decree No. 42-05, of 2005, establishes the Regulation of Water for Human Consumption.

## Project 2.2

### Co-financing of a Payment Mechanism for Environmental Services for the Watershed.

#### Project Information Sheet 10

Project 2.2	Financing of Conservation and Restoration Projects in the Yuna River Watershed under Payment and Compensation Mechanisms for Environmental and Ecosystem Services
<b>Technical Description</b>	<p>The main objective of the Project Financing of Conservation and Restoration Projects in the Yuna River Watershed under Payment and Compensation Mechanisms for Environmental and Ecosystem Services, is to support initiatives that allow scaling experiences in these areas.</p> <p>The following proposals and/or experiences count as context:</p> <ul style="list-style-type: none"> <li>• DR-T1298 and DR-T1299 operations (from 2024 to 2028) will implement a voluntary market for Nature-Based Credits (NbCs), supported by area units that have been improved by restoration and/or conservation activities. These actions are backed by a contract, with specific performance indicators, and their environmental gains will be verified by a third party as a requirement to be able to issue the NbCs for each property. Through a platform or “Marketplace,” companies and individuals interested in compensating for their impact on the environment acquire tokenized NbCs. The income generated is directed to a trust managed by a specialized entity, which distributes it among the local rural community and landowners, and to a fund to supervise other areas in conservation and initiate future projects.</li> <li>• El Zorzal Protection Project: It focuses on the conversion of grasslands into forest, the productive improvement of cocoa production and an organic cocoa brand with sales to artisanal chocolate producers in Europe, the United States and Canada. The project achieves the sale of the first carbon credits with the voluntary Plan Vivo standard, under the concept of fair price in the sale of cocoa from the El Zorzal Private Reserve.</li> </ul>

- Project for the Payment for Water Environmental Services of the Yaque del Norte Watershed (PSACYNA, for its acronym in Spanish). It is implemented as a pilot project through the signing of an agreement between the Ministry of the Environment, the Dominican Corporation of State Electrical Companies (CDEEE, for its acronym in Spanish) and the Water Supply and Sewerage Corporation of Santiago (CORASAN). The object is to contribute to the conservation of the bodies of water in the Yaque del Norte Watershed and contribute to the sustainability of the water resource in quality and quantity, reforestation work is carried out by hiring community brigades and direct economic payments for water environmental services.

To develop the conservation and restoration projects, this project will use as a basis the guiding protocol (result of the aforementioned operations) that includes: (i) The selection of the land, through the calculation of costs related to conservation and/or restoration; (ii) The identification and monitoring of key indicators; (iii) The system for monitoring, tracking and maintaining conservation data that provides sufficient information for decision-making, among other aspects. Adherence to the protocol is the basis for complying with the principles of traceability, additionality and transparency that conservation projects require.

At least 2 strategic phases are planned for the implementation of the conservation and restoration projects that are developed within the framework of this project (subject to modification as the progress and results of operation DR-T1298 and DR-T1299 are observed):

1. Feasibility Analysis and Structuring of Conservation Projects, in accordance with the Guiding Protocol.
2. Development and Monitoring of Conservation and/or Restoration Activities.

### Specific Activities

Specific activities to achieve the project objectives will be defined as the final phases and components are reviewed, which are still subject to review and modification. In general terms, it is foreseen to carry out:

1. Feasibility Analysis and Structuring of Conservation Projects, in accordance with the Guiding Protocol.
  - A. Site Assessment:
    - Analysis of the potential of the area for conservation or restoration.
    - Identification of threats to biodiversity and ecosystem services.
    - Definition of the project objectives and the activities to be carried out.
  - B. Project Design:
    - Development of a detailed work plan, including activities, schedule and budget.
    - Selection of project measurement and monitoring methodologies.
    - Estimation of the amount of nature credits (biodiversity, carbon, etc.) to generate.
  - C. Legal and Financial Analysis:
    - Ensure compliance with environmental laws and regulations.
    - Define the financial structure of the project, including costs, investments and benefits.
    - Identify potential sources of financing, including the sale of NbCs.
  - D. Consultation with Interested Parties:
    - Include local communities, landowners and other relevant stakeholders in the project design process.
    - Obtain the consent and support of interested parties for the development of the project.
2. Development and Monitoring of Conservation and/or Regeneration Activities:
  - A. Implementation of Activities:
    - Carrying out the conservation and/or regeneration activities planned in the project.
    - Monitoring of best practices and environmental standards.

- Training of staff involved in the execution of the project.
- B. Biodiversity Monitoring:
  - Measurement of the biodiversity indicators selected for the project.
  - Compilation of data on the flora, fauna and other components of the ecosystem.
  - Evaluation of the project's impact on biodiversity.
- C. Carbon monitoring:
  - Measurement of carbon emissions avoided or sequestered by the project.
  - Monitoring of international protocols and standards for carbon measurement.
  - Verification of carbon emissions by an independent entity.
- D. Adaptation and Improvement of the Project:
  - Analysis of monitoring results to make adjustments to project activities.
  - Implementation of corrective measures to improve the impact of the project.
  - Update of the project work plan and budget.

**Potential Areas**

This activity is applicable throughout the territory of the Yuna River Watershed.

**Estimation of Implementation Costs**

A budget of USD 2,000,000 is estimated for the development of this project. The cost breakdown of the project is detailed below.

<b>Total Costs</b>	<b>\$ 2,000,000</b>
<b>Phase I: Feasibility Analysis and Structuring of Conservation Projects, in accordance with the Guiding Protocol.</b>	\$400,000
<b>Phase II: Development and Monitoring of Conservation and/or Regeneration Activities.</b>	\$1,400,000
<b>Management</b>	\$200,000
<b>PV</b>	<b>\$ 2,000,000</b>

*Data in USD (United States Dollar)*

**Facilities, Equipment, Technologies and Human Capital**

**Human Resources:**

- General Project Coordinator.
- Technical specialists in environmental conservation, economics, community relations, etc.
- Administrative and support staff for logistical and administrative tasks.
- Facilitators for workshops and awareness activities.
- Field staff for monitoring and tracking actions.

**Technological Resources:**

- Computer equipment and software for data analysis and reporting.
- Geographic information systems (GIS) for mapping and spatial analysis.
- Online communication and collaboration tools to facilitate remote work and coordination between teams.
- Environmental monitoring equipment (sensors, weather stations, etc.) for the collection of environmental data.

**Material and Equipment:**

- Office supplies (paper, pens, etc.).
- Equipment for workshops and meetings (projectors, blackboards, teaching materials, sheets of paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.
- Vehicles and field equipment for travel and monitoring activities.
- Equipment for installation of environmental infrastructure (such as nurseries for plant production in restoration projects).

**Management and Operations Structure**

For the management and operation structure, the following is proposed:

**Steering Committee:**

Responsible for the general supervision of the project.

Composed of representatives of relevant government institutions, non-governmental organizations and, possibly, community representatives.

Responsible for making strategic decisions and allocating resources.

**Project Coordination Team:**

General Coordinator: Responsible for the coordination and daily management of the project.

Technical Specialists: Experts in environmental conservation, economics, community relations, among others, to provide specialized technical advice in each phase of the project.

**Implementation Timeline**

A duration of 2 years is expected for the development of this project, distributed as follows according to the phases described:

Year 1-3			Year 4-6		
1	2	3	4	5	6
Phase 1	Phase 1				
	Phase 2	Phase 2	Phase 2	Phase 2	
	Phase 3			Phase 3	Phase 3

Note: Please note that in year 2-6 some credits may be sold for activities already carried out (mainly management milestones achieved). However, as they are long-term projects of 10-20 years, most of the credits will be marketed from year 10.

**Rules And Regulations To Take Into Account**

- Constitution of the Republic (2015).
- National Development Strategy 2030 (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Law 44-18 that establishes payments for environmental services
- Draft regulations for application of law 44-18.

## COMPONENT 3. Nature-Positive Economic Diversification

### Project 3.1A

Development of Ecotourism Projects

#### a) Development of an Ecotourism Program in the Loma Quita Espuela Scientific Reserve and El Zorzal Private Reserve

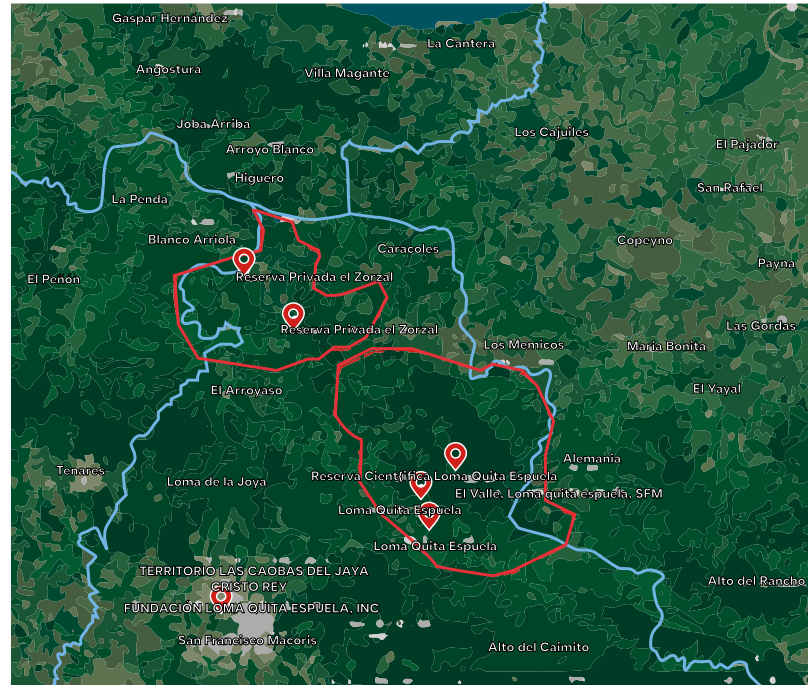
#### Project Presentation Sheet 11

Project 3.1a	Development of an Ecotourism Program in the Loma Quita Espuela Scientific Reserve and El Zorzal Private Reserve
<b>Technical Description</b>	<ul style="list-style-type: none"> <li>• The initiative of the Loma Quita Espuela Scientific Reserve consists of developing an ecotourism program through guided interpretive excursions through rivers and natural pools, and nature interpretation and bird watching trails. Also, the development of a rural lodging program, including gastronomy. Likewise, the development of a scientific tourism program –visit to the Indian Cave– that hosts an important population of bats, plants and ecological restoration and conservation agreements with farmers who own neighboring land for conversion of land use with biotechnologies and sustainable productive systems (including technical training).</li> <li>• The Loma Quita Espuela Scientific Reserve was created by Decree No. 82 of 1992 and is under the trust of the Loma Quita Espuela Foundation (FLQE, for its acronym in Spanish).</li> <li>• The Loma Quita Espuela Scientific Reserve is located on the eastern slope of the Northern Mountain Range and includes the sectors of the Loma Quita Espuela that gives its name to the protected area (985 meters above sea level), Loma Vieja (700 meters above sea level), and Loma La Canela (540 meters above sea level). The reserve covers about 72.5 km<sup>2</sup> of the interior region of the country and stands out for being the cradle of the birth of more than sixty rivers and for having the highest peak of the Northern Mountain Range, from which the reserve takes its name, the Loma Quita Espuela summit, 985 meters high.</li> <li>• The Sendero de las Nubes trail takes the visitor to the top of Loma Quita Espuela, and, although it is a tough route, once up, the views offered by the top of the Cibao Valley are incredible. The other trail is that of Montecito Don Sorón, within a leafy forest and there are possibilities to bathe in the crystalline waters of the nascent rivers and in the natural spas formed there.</li> <li>• The El Zorzal Private Reserve initiative consists of developing an ecotourism program through guided interpretive excursions through rivers and natural pools, and nature interpretation and bird watching trails, a tour of the James Bond trail and the agroecological trail of cocoa, macadamia and honey. Also, the visit to Zorzal Cacao (post-harvest management of cocoa), planting and ecological restoration activities. In addition, conservation agreements with farmers who own neighboring lands for land use conversion with biotechnologies and sustainable production systems (including technical training).</li> <li>• The El Zorzal Private Reserve is a pioneering program in the Dominican Republic and has an area of 7,000 tareas (land measurement unit). This reserve, located in El Guineal, is part of a biological corridor that connects with the Loma Quita Espuela Scientific Reserve 10 linear kilometers from El Zorzal.</li> </ul>

<b>Market Segment</b>	<ul style="list-style-type: none"> <li>• National and international visitors who appreciate nature.</li> <li>• Bird watchers.</li> <li>• Families who enjoy cultural activities in nature.</li> </ul>
<b>Specific Activities</b>	<p><b>Previous Studies</b></p> <p>A1. RCLQE/RPEZ Ecotourism Development Plan, including market study.</p> <p>A2. Study of tourist load capacity and public use regulations.</p> <p>A3. Design of a Master Plan and General Budget for basic infrastructure.</p> <p><b>Construction of Infrastructure/Tourist Plant</b></p> <p>B1. Visitor Center at the RCLQE entrance (toilets, conference room, shop, cafeteria, offices).</p> <p>B2. Sendero Las Nubes RCLQE Trail: Observation tower, bird feeding station, pollinator hotel, signage, improvement of access to spas.</p> <p>B3. James Bond Trail improvement (RPEZ).</p> <p>B4. Improve agroecological path (RPEZ).</p> <p>B5. Creation of connectivity path between RPEZ and RCLQE.</p> <p>B6. Improvement of Rancho Don Lulú RCLQE (rural-type lodging).</p> <p>B7. Construction of new rooms (RPEZ).</p> <p>B8. Asphalt of the entrance road to Zorzal (RPEZ).</p> <p>B9. Kitchen construction (RPEZ).</p> <p>B10. Construction and expansion of bathrooms (RPEZ).</p> <p>B11. Creation and design of a museum on post-harvest handling (RPEZ).</p> <p>B12. Signage and interpretive content of the reserve and trails (RPEZ).</p> <p>B13. Improvement of energy and water services infrastructure (RPEZ).</p> <p><b>Equipment</b></p> <p>C1. Fire control equipment, communication systems, transportation equipment (1 truck and 2 motorcycles), camera traps (RCLQE).</p> <p><b>Training and Agreements</b></p> <p>D1. Training workshops for local community, tourist guides and park rangers (RCLQE/RPEZ).</p> <p>D2. Signatures of conservation and training agreements.</p> <p><b>Marketing</b></p> <p>E1. RCLQE destination promotion plan and agreements with Tour Operators.</p> <p>E2. Website creation, among others (RCLQE/RPEZ).</p> <p>Financing</p> <p>F1. Soft financing seed fund project for ecolodges operated by local community RCLQE/RPEZ.</p>

### Potential Areas

It is estimated that this initiative will be developed in the protected area Loma Quita Espuela Scientific Reserve and the El Zorzal Private Reserve that are part of the Yuna Watershed, specifically in the public access area, Sendero Las Nubes and the Rancho Don Lulú area.



### Estimation of Implementation Costs

A GLOBAL budget of USD 1,400,000.00 (includes an estimate of unforeseen events) is estimated for the development of this project. The cost breakdown of the project in US dollars is detailed below.

	Previous Studies	Construcción	Equipment	Training	Marketing	Financing	Total
<b>Total Investment Costs</b>	-	\$ 595,000.00	\$ 75,000.00	\$ 15,000.00	\$ 10,000.00	\$ 500,000.00	\$ 1,195,000.00
Phase III: Implementation	-	595,000.00	75,000.00	15,000.00	10,000.00	500,000.00	1,195,000.00
<b>Total Operating Costs</b>	\$ 40,000.00	\$ 68,000.00	\$ 9,000.00	\$ 32,000.00	\$ 18,000.00	\$ 38,000.00	\$ 205,000.00
Phase I: Planning and Management	\$ 5,000.00	\$ 10,000.00	-	\$ 5,000.00	\$ 3,000.00	\$ 4,000.00	\$ 27,000.00
Phase II: Project Analysis and Design	\$ 5,000.00	\$ 10,000.00	-	\$ 5,000.00	\$ 3,000.00	\$ 4,000.00	\$ 27,000.00
Phase III: Project Implementation	-	\$ 14,000.00	\$ 2,000.00	\$ 15,000.00	\$ 5,000.00	\$ 10,000.00	\$ 46,000.00
Incidentals	\$ 5,000.00	\$ 4,000.00	4,000.00	\$ 4,000.00	\$ 4,000.00	\$ 4,000.00	\$ 25,000.00
<b>PV</b>	\$ 5,000.00	\$ 663,000.00	84,000.00	\$ 47,000.00	\$ 28,000.00	\$ 538,000.00	\$ 1,400,000.00

Data in USD (United States Dollar)

<p><b>Facilities, Equipment, Technologies and Human capital</b></p>	<p><b>Human Capital:</b></p> <ul style="list-style-type: none"> <li>• One (1) Excursion Coordinator.</li> <li>• Members of the Ecotourism Development Council of the Sánchez Ramírez province.</li> <li>• Group of nature guides.</li> <li>• Group of local community members who prepare food, drinks and crafts.</li> <li>• Group of local community members who wish to offer lodging services.</li> </ul> <p><b>Technologies:</b></p> <ul style="list-style-type: none"> <li>• Research, field visits, data collection.</li> <li>• Use of geographic information systems and other technologies.</li> <li>• Induction and technical training.</li> <li>• Tracking and monitoring.</li> </ul> <p><b>Material and Equipment:</b></p> <ul style="list-style-type: none"> <li>• During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground).</li> <li>• During the Participatory and Training Process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.</li> <li>• During the Implementation Process: The construction of infrastructure and tourist plant is contemplated, such as a visitor center, interpretation trails, rooms, dining room, bathrooms, among others).</li> </ul>
<p><b>Management and Operations Structure</b></p>	<p>The objective of the project is the development of the ecotourism program in the Loma Quita Espuela Scientific Reserve and the El Zorzal Private Reserve. The management of the project will be in charge of the General Directorate (led by the National Executive, the Ministry of Environment and Natural Resources and the Ministry of Tourism), as well as the Municipal City Council with the support of the Work Group (in which the participation of key entities such as Fundación Loma Quita Espuela, Inc., Dominican Environmental Consortium, among others, is advised), and the technical assistance contracted for the execution of the project. Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 3 technical consultants and local technical support.</p> <p>Regarding the participation strategy, institutional involvement as mobilizing entities will be necessary, and the guidance of the technical assistance contracted for the promotion of the participatory sessions that allow generating the commitment and linkage of the interest groups with the development of the ecotourism program in the Loma Quita Espuela Scientific Reserve and the El Zorzal Private Reserve.</p>
<p><b>Implementation Timeline</b></p>	<p>A duration of 2 years is expected for the development of the project. However, depending on the development of the activities, an extension of six (6) additional months could be considered. It is expected that the projects can continue independently after the completion of the action plan proposed here. Likewise, technical and logistical support by the contracted technical assistance is deemed necessary throughout the 2-year duration of the projects.</p> <p>The following table shows the implementation schedule of the activities previously outlined in this project presentation sheet. The schedule follows the numbering of the activities established in said section from the general activity (A, B...) and the corresponding specific activities (A2; B1...).</p>

YEAR 1				YEAR 2			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A1	A3						
A2		B1	B6	B7	B11		
		B2	B8	B13			
		B3	B9				
		B4	B10				
		B5	B12				
				C1			
			D1	D1	D1	D1	
			E1	D2			
				E2		E1	
				F1	F1	F1	F1

### Rules and Regulations to take into Account

- General Law on Environment and Natural Resources (Law 64-00).
- Protected Areas Sector Act of 2004 (Law 202-04).
- National Development Strategy 2030 (Law 1-12).
- Law for the Development of MSMEs (Law 488-08).
- General Law on Tourism (Law 541-02).
- Regulation 2115 on Classification and Standards for Hotel Establishments. July 16, 1984.
- Regulation 2116 on Classification and Standards for Restaurants. July 16, 1984.
- Regulations for Classification and Standards of Travel Agencies (Decree 815-03). August 20, 2003.
- Regulations for the Classification and Standards of Gift Shops (Decree 813-03). August 20, 2003.
- Requirement for authorizations of concessions for ecotourism operations in protected areas.

### Requirements and Permissions

- Authorization of concessions for ecotourism operations in protected areas issued by the Ministry of Environment and Natural Resources.
- Operations license issued by the Ministry of Tourism according to the type of activity to be developed.
- Public Health Permit for food and beverage establishments.

## Proyecto 3.1B

### Development of Ecotourism Projects

#### b) Saltos de Jima Waterfalls

### Project Presentation Sheet 12

Project 3.1b	Development of an Ecotourism Program in the Saltos de Jima Waterfalls Natural Monument
<b>Technical Description</b>	<p>The initiative consists of developing an ecotourism program in the Saltos de Jima Waterfalls Natural Monument, through guided interpretive excursions through the natural pools and nature interpretation trails.</p> <p>The Saltos de Jima Waterfalls Natural Monument is located in the Monseñor Noel province. It was declared natural monument in August 2009 under Decree 571-09. It has an area of 18.67 km<sup>2</sup> and is made up of 12 waterfalls of the Jima River and 10 pools suitable for bathing, known as the Pozas de la Reina (Pools of the Queen). The river rises in the Las Neblinas Scientific Reserve and flows into the Camú River to feed the flow of the Rincón Dam.</p> <p>The Saltos de Jima Waterfalls Natural Monument was created with the purpose of preserving the middle course of the river that bears the same name, where several waterfalls are formed and a very unique sample of the rainforest is preserved, being one of the places with the highest levels of rainfall in all the national territory. Therefore, it maintains multiple associated biological values that help to the development of scientific research, recreation and the practice of ecotourism, among other things.</p> <p>The Saltos de Jima Waterfalls located in Bonaó, present suitable conditions to develop an ecological route. On the main road there is a guard house. The hike is of medium difficulty, 3 to 4km long, along the mountainous trails and reaches the first and second waterfalls. There are also 30 more waterfalls that can only be seen by climbing the rock. There are viewpoints to enjoy the landscape and the puddle called the Fountain of Youth.</p> <p>The aspects that must be taken into account for its implementation are the following:</p> <ol style="list-style-type: none"> <li>1. Technical Survey of the Protected Area.</li> <li>2. Identification of the Most Suitable Areas to Develop Activities.</li> <li>3. Elaboration of Technical Studies.</li> <li>4. Design of Necessary Programs.</li> <li>5. Definition of Opportunities for Nature-Based Solutions (NbSs) that are Compatible with the Development of Ecotourism Activities.</li> <li>6. Risk Assessment and Contingency Plans.</li> </ol>
<b>Market Segment</b>	<ul style="list-style-type: none"> <li>• National and international visitors who appreciate nature.</li> <li>• Bird watchers.</li> </ul>
<b>Specific Activities</b>	<p><b>A. Previous Studies</b></p> <ol style="list-style-type: none"> <li>A1. MNSJ Ecotourism Development Plan, including market study.</li> <li>A2. Study of tourist load capacity and public use regulations.</li> <li>A3. Design of a Master Plan and General Budget for basic infrastructure.</li> </ol> <p><b>B. Infrastructure Construction</b></p> <ol style="list-style-type: none"> <li>B1. Visitor Center at the entrance (toilets, conference room, shop, cafeteria, offices).</li> <li>B2. Trail signage.</li> <li>B3. Improve access to spas.</li> </ol>

### C. Training

C1. Training workshops for local community, tourist guides and park rangers.

### D. Marketing

D1. MNSJ destination promotion plan and agreements with Tour Operators.

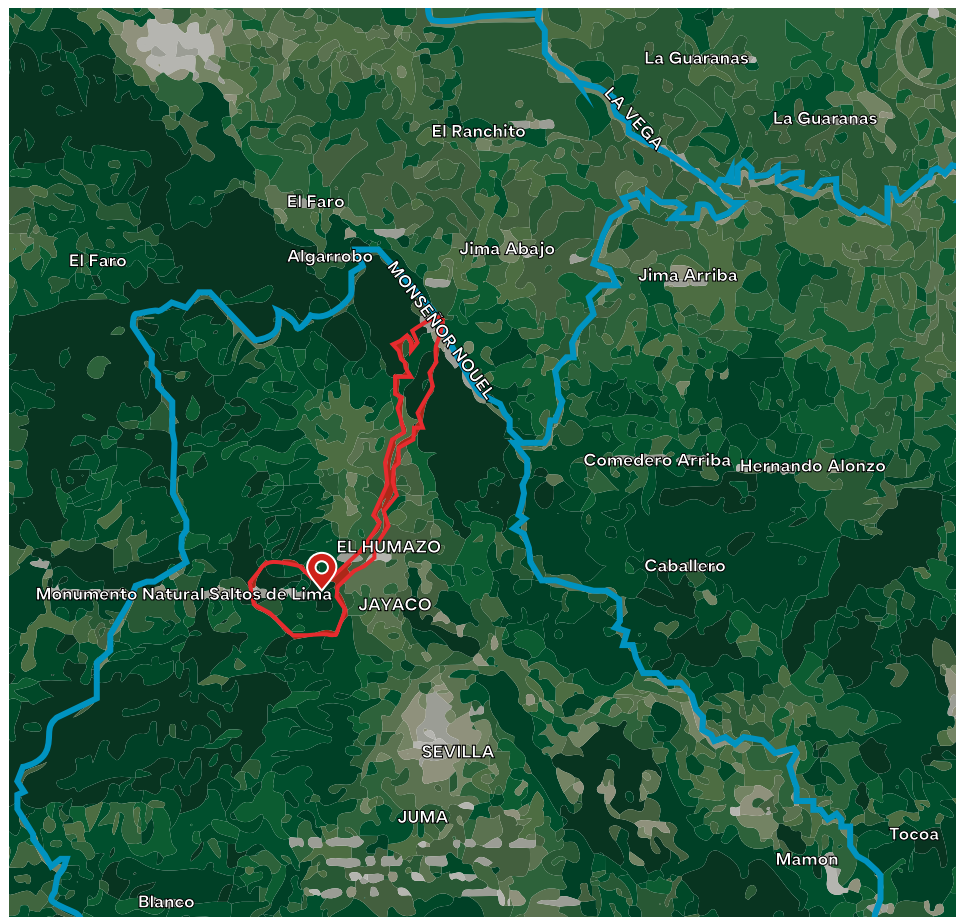
D2. Website creation, among others.

### E. Financing

E1. Soft financing seed fund for eco-lodging operated by local communities.

### Potential Areas

It is estimated that this initiative will be developed in the protected area that is part of the Yuna Watershed, specifically in the public access area and in the area of influence of the waterfalls and natural pools.



### Estimation of Implementation Costs

A GLOBAL budget of USD 750,000.00 (includes an estimate of unforeseen events) is estimated for the development of this project. The cost breakdown of the project in US dollars is detailed below.

	Previous Studies	Construction	Training	Marketing	Funding	Total
<b>Total Investment Costs</b>	-	\$ 148,000.00	\$ 18,700.00	\$ 10,500.00	\$ 450,000.00	\$ 627,700.00
Phase III: Implementation	-	\$ 148,000.00	\$ 18,700.00	\$ 10,500.00	\$ 450,000.00	\$ 627,700.00
<b>Total Operating Costs</b>	\$ 40,000.00	\$ 16,500.00	\$ 11,300.00	\$ 4,500.00	\$ 50,000.00	\$ 122,300.00
Phase I: Planning and Management	\$ 5,000.00	\$ 5,500.00	\$ 2,000.00	\$ 500.00	\$ 12,200.00	\$ 25,000.00
Phase II: Project Analysis and Design	\$ 32,200.00	\$ 4,500.00	\$ 1,500.00	\$ 500.00	\$ 20,000.00	\$ 58,700.00
Phase III: Project Implementation	-	\$ 3,700.00	\$ 5,000.00	\$ 700.00	\$ 15,000.00	\$ 24,400.00
Incidentals	\$ 2,800.00	\$ 2,800.00	\$ 2,800.00	\$ 2,800.00	\$ 2,800.00	\$ 14,000.00
<b>PV</b>	\$ 40,000.00	\$ 165,000.00	\$ 30,000.00	\$ 15,000.00	\$ 500,000.00	\$ 750,000.00

Data in USD (United States Dollar)

### Facilities, Equipment, Technologies and Human Capital

#### Human Capital

- One (1) Excursion Coordinator.
- Group of nature guides members of the Jima Waterfall Guides Association.
- Members of the Ecotourism Development Council of the Monseñor Nouel province-CODEPRO.
- Group of local community members who prepare food, drinks and crafts.
- Group of local community members who wish to offer lodging services.

#### Technologies

- Research, field visits, data collection.
- Use of geographic information systems and other technologies.
- Induction and technical training.
- Tracking and monitoring.

#### Material and Equipment

- During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground).
- During the Participatory and Training Process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.

### Management and Operations Structure

The objective of the project is the development of the ecotourism program in the Saltos de Jima Waterfalls Natural Monument. The management of the project will be in charge of the General Directorate (led by the National Executive, the Ministry of Environment and Natural Resources and the Ministry of Tourism), as well as the Municipal City Council with the support of the Work Group (in which the participation of key entities such as the Jima Jumping Guides Association, the Ecotourism Development Council of the Monseñor Nouel province-CODEPRO, among others, is advised), and the technical assistance contracted for the execution of the project. Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 3 technical consultants and local technical support.

Regarding the participation strategy, institutional involvement as mobilizing entities will be necessary, and the guidance of the technical assistance contracted for the promotion of the participatory sessions that allow generating the commitment and linkage of the interest groups with the development of the ecotourism program in the Saltos de Jima Natural Monument.

### Implementation Timeline

A duration of 1.5 years is expected for the development of the project. However, depending on the development of the activities, an extension of six (6) additional months could be considered. It is expected that the projects can continue independently after the completion of the action plan proposed here. Likewise, technical and logistical support by the contracted technical assistance is deemed necessary throughout the 3-year duration of the projects.

The following table shows the implementation schedule of the activities previously outlined in this project presentation sheet. The schedule follows the numbering of the activities established in said section from the general activity (A, B...) and the corresponding specific activities (A2; B1...).

YEAR 1				YEAR 2	
Q1	Q2	Q3	Q4	Q1	Q2
A1					
A2	A3	B1			
		B2			
		B3			
			C1	C1	
			D1	D1	D1
				D2	
				E2	
				F1	F1

### Rules and Regulations to take into Account

- General Law on Environment and Natural Resources (Law 64-00).
- Protected Areas Sector Act (Law 202-04).
- National Development Strategy 2030 (Law 1-12).
- Law for the Development of MSMEs (Law 488-08).
- General Law on Tourism (Law 541-02).
- Regulation 2115 on Classification and Standards for Hotel Establishments. July 16, 1984.
- Regulation 2116 on Classification and Standards for Restaurants. July 16, 1984.
- Regulations for Classification and Standards of Travel Agencies (Decree 815-03). August 20, 2003.
- Regulations for the Classification and Standards of Gift Shops (Decree 813-03). August 20, 2003.
- Requirement for authorizations of concessions for ecotourism operations in protected areas

### Requirements and Permissions

- Authorization of concessions for ecotourism operations in protected areas issued by the Ministry of Environment and Natural Resources.
- Operations license issued by the Ministry of Tourism according to the type of activity to be developed.
- Public Health Permit for food and beverage establishments.

## Project 3.1C

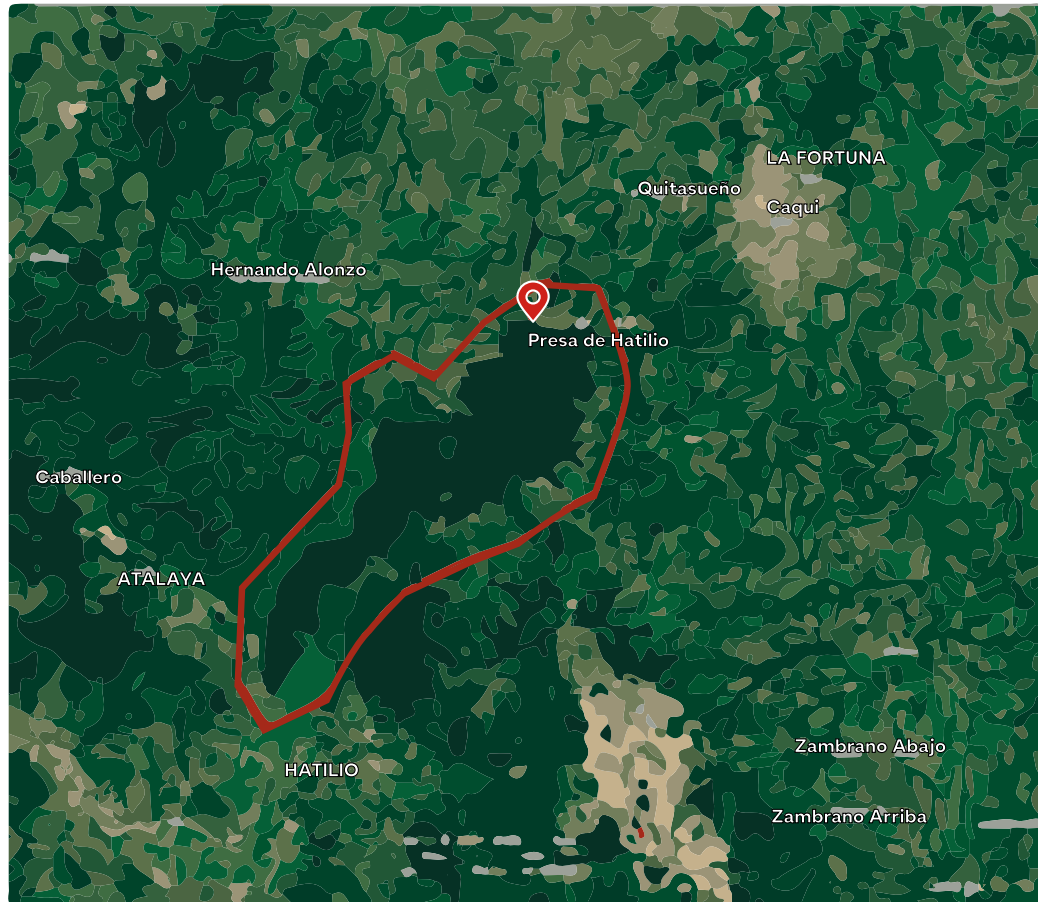
### Development of Ecotourism Projects

#### c) Hatillo Dam

## Project Presentation Sheet 13

Project 3.1c	Development of an Ecotourism Program in the Hatillo Dam
<b>Technical Description</b>	<p>The initiative consists of developing an ecotourism program at the Hatillo Dam through guided interpretive excursions through the dam and nature interpretation trails. Also, the promotion of recreational fishing activity and the development of a rural lodging program and kiosks selling local products in the surrounding areas.</p> <p>The Hatillo Dam is located southwest of Cotuí, in the community of Hatillo (18°59'3"N 70°13'47"W), in the Sánchez Ramírez province and consists of an imposing hydraulic dam supplied by the Yuna River. Its main objective is to guarantee the irrigation of the Cotuí irrigation area.</p> <p>Its construction began in 1977 and was completed in 1984. The Hatillo Dam Reservoir has a water volume capacity of 710 million cubic meters, a surface area of 22 km<sup>2</sup> and a maximum length of 15 km, which makes it the largest freshwater lake in the entire Caribbean. This lake is also a great source of income for all fishermen in the area, since it is home to numerous species of fish such as the baku, catfish and toadfish.</p>

	<p>The aspects that must be taken into account for its implementation are the following:</p> <ol style="list-style-type: none"> <li>1. Technical Survey of the Protected Area.</li> <li>2. Identification of the Most Suitable Areas to Develop Activities.</li> <li>3. Elaboration of Technical Studies.</li> <li>4. Design of Necessary Programs.</li> <li>5. Identification of Opportunities for Nature-Based Solutions (NbSs) that are Compatible with the Development of Ecotourism Activities.</li> <li>6. Risk Assessment and Contingency Plans.</li> </ol>
<b>Market Segment</b>	<ul style="list-style-type: none"> <li>• National and international visitors who appreciate nature</li> <li>• People who enjoy mild adventure activities.</li> <li>• Families who enjoy activities in nature.</li> </ul>
<b>Specific Activities</b>	<p><b>A. Previous Studies</b></p> <ol style="list-style-type: none"> <li>A1. Ecotourism Development Plan for Hatillo Dam, including market study.</li> <li>A2. Study of tourist load capacity and public use regulations.</li> <li>A3. Design of a Master Plan and General Budget for basic infrastructure.</li> </ol> <p><b>B. Infrastructure Construction</b></p> <ol style="list-style-type: none"> <li>B1. Visitor Center (toilets, conference room, shop, cafeteria, offices), 200 m2</li> <li>B2. Dock</li> <li>B3. Improvement and signage of trails,</li> <li>B4. Kiosks selling local products and renting kayaks.</li> </ol> <p><b>C. Equipment</b></p> <ol style="list-style-type: none"> <li>C1. Purchase of one (1) catamaran for tourists and maintenance of the existing one.</li> <li>C2. Purchase of kayaks and paddle boards (at least 5).</li> </ol> <p><b>D. Training</b></p> <ol style="list-style-type: none"> <li>D1. Local community training workshops, hotel training, tourist guides and park rangers.</li> </ol> <p><b>E. Marketing</b></p> <ol style="list-style-type: none"> <li>E1. Promotion plan for the Hatillo Dam destination and agreements with Tour Operators.</li> <li>E2. Website creation, among others.</li> </ol> <p><b>F. Financing</b></p> <ol style="list-style-type: none"> <li>F1. Soft financing seed fund for eco-lodging operated by local communities.</li> </ol>
<b>Potential Areas</b>	<p>It is estimated that this initiative will be developed in the Hatillo Dam, which is part of the Yuna Watershed, specifically in the public access area and in the area of influence of the surrounding local community.</p>



Fuente: Imagen Google Earth: Polígono Presa de Hatillo.

**Estimation of Implementation Costs**

A GLOBAL budget of USD 1,500,000.00 (includes an estimate of unforeseen events) is estimated for the development of this project. The cost breakdown of the project in US dollars is detailed below.

	Previous Studies	Construction	Equipment	Training	Marketing	Funding	Total
<b>Total Investment Costs</b>	-	\$ 343,000.00	\$ 507,000.00	\$ 10,000.00	\$ 7,000.00	\$ 4560,000.00	\$ 1,327,000.00
Phase III: Implementation	-	\$ 343,000.00	\$ 507,000.00	\$ 10,000.00	\$ 7,000.00	\$ 4560,000.00	\$ 1,327,000.00
<b>Total Operating Costs</b>	\$ 40,000.00	\$ 62,000.00	\$ 7,000.00	\$ 14,000.00	\$ 5,400.00	\$ 43,000.00	\$ 172,000.00
Phase I: Planning and Management	\$ 5,000.00	\$ 10,000.00	-	\$ 3,000.00	\$ 1,000.00	\$ 10,000.00	\$ 29,000.00
Phase II: Project Analysis and Design	\$ 32,400.00	\$ 29,400.00	\$ 2,000.00	\$ 3,000.00	\$ 1,000.00	\$ 20,000.00	\$ 87,400.00
Phase III: Project Implementation	-	\$ 20,000.00	\$ 2,000.00	\$ 5,400.00	\$ 400.00	\$ 10,000.00	\$ 37,800.00
Incidentals	\$ 3,000.00	\$ 3,000.00	3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 18,000.00
<b>PV</b>	<b>\$ 40,000.00</b>	<b>\$ 409,400.00</b>	<b>514,400.00</b>	<b>\$ 24,400.00</b>	<b>\$ 12,400.00</b>	<b>\$ 499,400.00</b>	<b>\$ 1,500,000.00</b>

Data in USD (United States Dollar)

### Facilities, Equipment, Technologies and Human Capital

#### Human Capital:

- One (1) Excursion Coordinator.
- Members of the Ecotourism Development Council of the Sánchez Ramírez province.
- Group of nature guides.
- Group of local community members who prepare food, drinks and crafts.
- Group of local community members who wish to offer lodging services.

#### Technologies:

- Research, field visits, data collection.
- Use of geographic information systems and other technologies.
- Induction and technical training.
- Tracking and monitoring.

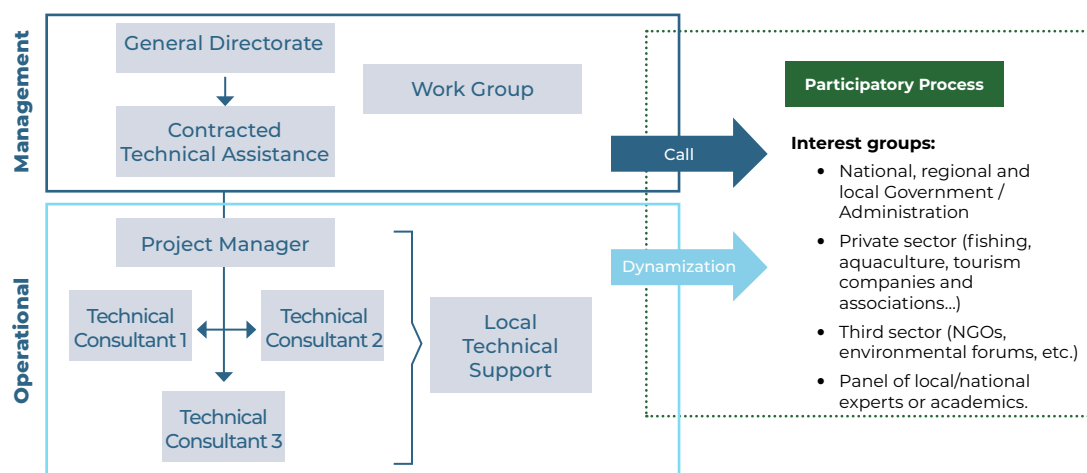
#### Material and Equipment:

- During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground).
- During the Participatory and Training Process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.

**Management and Operations Structure**

The objective of the project is the development of the ecotourism program in the Hatillo Dam. The management of the project will be in charge of the General Directorate (led by the National Executive, the Ministry of Environment and Natural Resources and the Ministry of Tourism), as well as the Municipal City Council with the support of the Work Group (the participation of key entities such as the Ecotourism Development Council of the Sánchez Ramírez province, among others, is advised), and the technical assistance contracted for the execution of the project. Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 3 technical consultants and local technical support.

Regarding the participation strategy, institutional involvement as mobilizing entities will be necessary, and the guidance of the technical assistance contracted for the promotion of the participatory sessions that allow generating the commitment and linkage of the interest groups with the development of the ecotourism program at the Hatillo Dam.



**Implementation Timeline**

Se prevé una duración de 1.5 años para el desarrollo del proyecto. Sin embargo, dependiendo de desarrollo de las actividades pudiera contemplarse una prórroga de seis (6) meses adicionales. Se espera que los proyectos puedan tener continuidad de manera independiente tras la finalización del plan de acción aquí propuesto. Asimismo, se estima necesario el acompañamiento técnico y logístico por parte de la asistencia técnica contratada a lo largo de los 3 años de duración de los proyectos.

La siguiente tabla refleja el cronograma de implantación de las actividades reseñadas previamente en esta ficha. El cronograma sigue la numeración de las actividades establecidas en dicho apartado desde la actividad general (A, B...) y las actividades específicas correspondientes (A2; B1...).

YEAR 1				YEAR 2	
T1	T2	T3	T4	T1	T2
A1	A3				
A2		B1	B4		
		B2			
		B3			
			C1	C1	
			C2		
			D1	D1	
			E1	E1	
			E2		
				F1	F1

### Rules and Regulations to take into Account

#### Normative and Regulatory Framework

- General Law on Environment and Natural Resources (Law 64-00).
- Protected Areas Sector Act (Law 202-04).
- National Development Strategy 2030 (Law 1-12).
- Law for the Development of MSMEs (Law 488-08).
- General Law on Tourism (Law 541-02).
- Regulation 2115 on Classification and Standards for Hotel Establishments. July 16, 1984.
- Regulation 2116 on Classification and Standards for Restaurants. July 16, 1984.
- Regulations for Classification and Standards of Travel Agencies (Decree 815-03). August 20, 2003.
- Regulations for the Classification and Standards of Gift Shops (Decree 813-03). August 20, 2003.
- Requirement for authorizations of concessions for ecotourism operations in protected areas.

#### Requirements and Permissions

- Authorization of concessions for ecotourism operations in protected areas issued by the Ministry of Environment and Natural Resources.
- Operations license issued by the Ministry of Tourism according to the type of activity to be developed.
- Public Health Permit for food and beverage establishments.

## Project 3.1D

### Development of Ecotourism Projects

#### d) Rock Art in Aniana Vargas

### Project Presentation Sheet 14

Project 3.1D	Taíno Guácaras Route in the Aniana Vargas National Park
<b>Technical Description</b>	<p>The initiative consists of developing an ecotourism program in the Aniana Vargas National Park under the concept of cultural tourism and the development of adventure activities such as a zip line.</p> <p>The Aniana Vargas National Park is located in the province of Sanchez Ramírez, with an area of 130 km<sup>2</sup>. It was declared in October 2009, through Decree 571-09. Its name honors a distinguished fighter for social causes, libertarian and natural resources of the Dominican Republic.</p> <p>The Aniana Vargas National Park is considered one of the areas with the highest concentration of rock art sites in the Caribbean region, 711 paintings and 435 petroglyphs have been reported, distributed in the 21 guácaras located in Sierra Prieta, Comedero, Caballero and Hernando Alonso, Sánchez Ramírez province.</p> <p>The succession of guácaras represents the greatest attraction of the park considered by renowned archaeologists as the largest exhibition of rock art carved in the caves in pictographs and petroglyphs, which reveal the history of our ancestors and aborigines. Its physiology is constituted by small valleys between mogotes, covered with typical vegetation of the area, with a high biodiversity concentration of fauna and flora.</p>

The protected area includes five main zones that show a particular biodiversity, including important rock art sites: Sierra Prieta: Corresponds to the hill called Loma La Guácaras; Comedro Arriba: Corresponds to the hills located in Comedero Arriba in front of Sierra Prieta; Hernando Alonzo: Corresponds to the hills located in Comedero Arriba in front of Sierra Prieta; Hernando Alonzo: Corresponds to the Cojobal hill and the one that follows it in a westerly direction up to the height of Hernando Alonzo; Caballero: Corresponds to the hills located from Caballero, including El Diviso hill, El Rancho hill, Blanca hill and Los Brazos hill, bordering to the west with the Hatillo Dam; Hatillo: Corresponds to the water mirror of the Hatillo Dam and the entire perimeter of the reservoir.

The aspects to be taken into account for its implementation are the following:

1. Technical Survey of the Protected Area.
2. Identification of the Most Suitable Areas to Develop Activities.
3. Elaboration of Technical Studies.
4. Design of Necessary Programs.
5. Identification of Opportunities for Nature-Based Solutions (NbSs) that are Compatible with the Development of Ecotourism Activities.
6. Risk Assessment and Contingency Plans.

#### Market Segment

- National and international visitors who appreciate nature.
- People who enjoy easy adventure activities.
- Families who enjoy cultural activities in nature.

#### Specific Activities

##### A. Previous Studies

- A1. Preparation of an updated anthropological report on the guácaras, their meaning and heritage.
- A2. Study of Tourist Load Capacity and Public Use Regulations.
- A3. Design of the route of the Taino Guácaras.
- A4. Preparation of prevention, mitigation and response committee.

##### B. Construction of Infrastructure

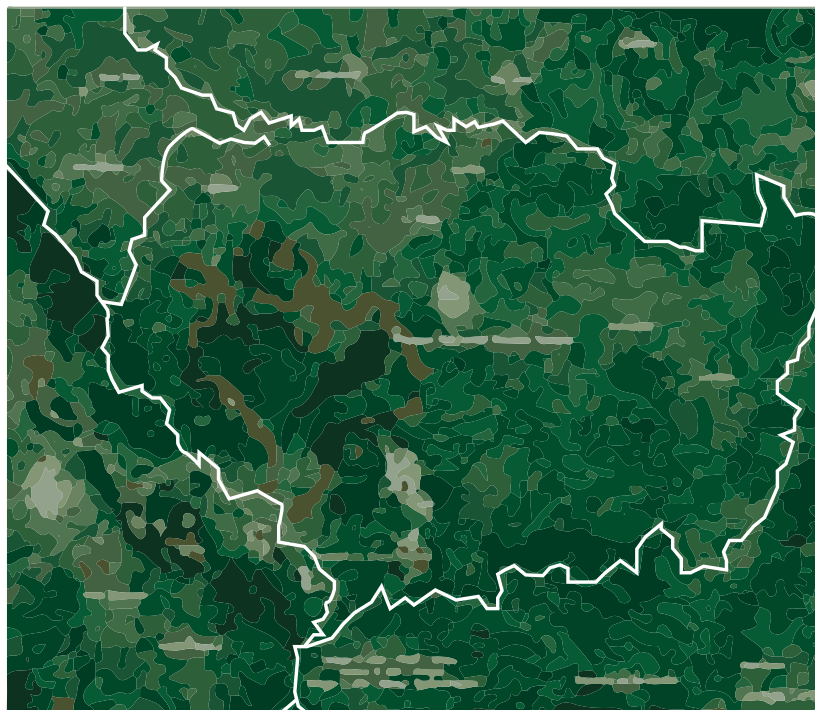
- B1. Design, development and placement of signage for the physical space (on trails - signs, maps, informational signs, history).
- B2. Design, elaboration and placement of informative signage to expose the biodiversity of flora and fauna.
- B3. Small welcome hall, restrooms and a ceremonial plaza to reactivate these sacred original spaces.
- B4. Design, elaboration and placement of a sculpture to honor the myth of the ciguapa.
- B5. Construction of the zip-line infrastructure.
- B6. Placement of trash cans for recycling.

##### C. Training

- C1. Training workshops for anthropological guides (knowledge of Taino culture, caves, history).
- D. Marketing
  - D1. Brand identity design and promotion strategy.
  - D2. Website design and visual identity (logo, graphic line, etc.).
  - D3. Creation of a biodiversity catalog of the protected area.
  - D4. Agreements with Tour Operators.

**Potential Areas**

This initiative is expected to take place in the protected area of Aniana Vargas National Park, which is part of the Yuna Watershed, specifically in the public access area.



Fuente: Imagen Google Earth: Polígono Presa de Hatillo.

**Estimation of Implementation Costs**

A GLOBAL budget of USD 500,000.00 (includes an estimate of unforeseen events) is estimated for the development of this project. The breakdown of project costs in US dollars is detailed below.

	Previous Studies	Construction	Training	Marketing	Total
<b>Total Investment Costs</b>	-	\$ 326,000.00	\$ 15,500.00	\$ 41,300.00	\$ 382,800.00
Phase III: Implementation	-	\$ 326,000.00	\$ 15,500.00	\$ 41,300.00	\$ 382,800.00
<b>Total Operating Costs</b>	\$ 45,000.00	\$ 55,000.00	\$ 11,500.00	\$ 5,700.00	\$ 117,000.00
Phase I: Planning and Management	\$ 5,000.00	\$ 10,000.00	\$ 2,000.00	\$ 1,000.00	\$ 18,000.00
Phase II: Project Analysis and Design	\$ 37,000.00	\$ 12,000.00	\$ 3,000.00	\$ 1,000.00	\$ 53,000.00
Phase III: Project Implementation	-	\$ 30,000.00	\$ 3,500.00	\$ 700.00	\$ 34,200.00
Incidentals	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 12,000.00
<b>PV</b>	\$ 45,000.00	\$ 3,000.00	\$ 27,000.00	\$ 47,000.00	\$ 12,000.00

Data in USD (United States Dollar)

<b>Facilities, Equipment, Technologies and Human Capital</b>	<p><b>Human Capital:</b></p> <ul style="list-style-type: none"> <li>• One (1) Excursion Coordinator.</li> <li>• Members of the Ecotourism Development Council of the Sánchez Ramírez province.</li> <li>• Group of nature guides.</li> <li>• Group of local community members who prepare food, drinks and crafts.</li> <li>• Group of local community members who wish to offer lodging services.</li> </ul> <p><b>Technologies:</b></p> <ul style="list-style-type: none"> <li>• Research, field visits, data collection.</li> <li>• Use of geographic information systems and other technologies.</li> <li>• Induction and technical training.</li> <li>• Tracking and monitoring.</li> </ul> <p><b>Material and Equipment:</b></p> <ul style="list-style-type: none"> <li>• During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, accommodation, meals and technical support on the ground).</li> <li>• During the Participatory and Training Process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.</li> </ul>
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<b>Management and Operations Structure</b>	<p>The objective of the project is the development of the ecotourism program in the Aniana Vargas National Park. The management of the project will be in charge of the General Directorate (led by the National Executive, the Ministry of Environment and Natural Resources, the Ministry of Tourism and the Ministry of Culture), as well as the Municipal Council with the support of the Work Group (in which the participation of key entities such as the Ecotourism Development Council of the Sánchez Ramírez province, among others, is advised), and the technical assistance contracted for the execution of the project. Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 3 technical consultants and local technical support.</p> <p>Regarding the participation strategy, institutional involvement as mobilizing entities will be necessary, and the direction of the technical assistance contracted for the promotion of the participatory sessions that allow generating the commitment and linkage of the interest groups with the development of the ecotourism program in the Aniana Vargas National Park.</p>
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<b>Implementation Timeline</b>	<p>A duration of 1 year is expected for the development of the project. However, depending on the development of the activities, an extension of six (6) additional months could be considered. It is expected that the projects can continue independently after the completion of the action plan proposed. Likewise, technical and logistical support by the contracted technical assistance is deemed necessary throughout the 3-year duration of the projects.</p> <p>The following table shows the implementation schedule of the activities previously outlined in this project presentation sheet. The schedule follows the numbering of the activities established in said section from the general activity (A, B...) and the corresponding specific activities (A2; B1...).</p> <table border="1" style="margin-left: auto; margin-right: auto; text-align: center;"> <thead> <tr> <th colspan="4">YEAR 1</th> </tr> <tr> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>A2</td> <td>A4</td> <td></td> </tr> <tr> <td></td> <td>A3</td> <td>B3</td> <td>B6</td> </tr> <tr> <td></td> <td>B1</td> <td>B4</td> <td></td> </tr> <tr> <td></td> <td>B2</td> <td>B5</td> <td></td> </tr> <tr> <td></td> <td></td> <td>C1</td> <td>C1</td> </tr> <tr> <td></td> <td>D1</td> <td>D3</td> <td></td> </tr> <tr> <td></td> <td>D2</td> <td>D4</td> <td></td> </tr> </tbody> </table>	YEAR 1				Q1	Q2	Q3	Q4	A1	A2	A4			A3	B3	B6		B1	B4			B2	B5				C1	C1		D1	D3			D2	D4	
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		C1	C1																																		
	D1	D3																																			
	D2	D4																																			

### Rules and Regulations to take into Account

#### Normative and Regulatory Framework

- General Law on Environment and Natural Resources (Law 64-00).
- Protected Areas Sector Act (Law 202-04).
- National Development Strategy 2030 (Law 1-12).
- Law for the Development of MSMEs (Law 488-08).
- General Law on Tourism (Law 541-02).
- Regulations for Classification and Standards of Travel Agencies (Decree 815-03). August 20, 2003.
- Requirement for authorizations of concessions for ecotourism operations in protected areas.

#### Requirements and Permissions

- Authorization of concessions for ecotourism operations in protected areas issued by the Ministry of Environment and Natural Resources.
- Operations license issued by the Ministry of Tourism according to the type of activity to be developed.

## Project 3.5E

### Development of Ecotourism Projects

#### e) Mangrove Trail

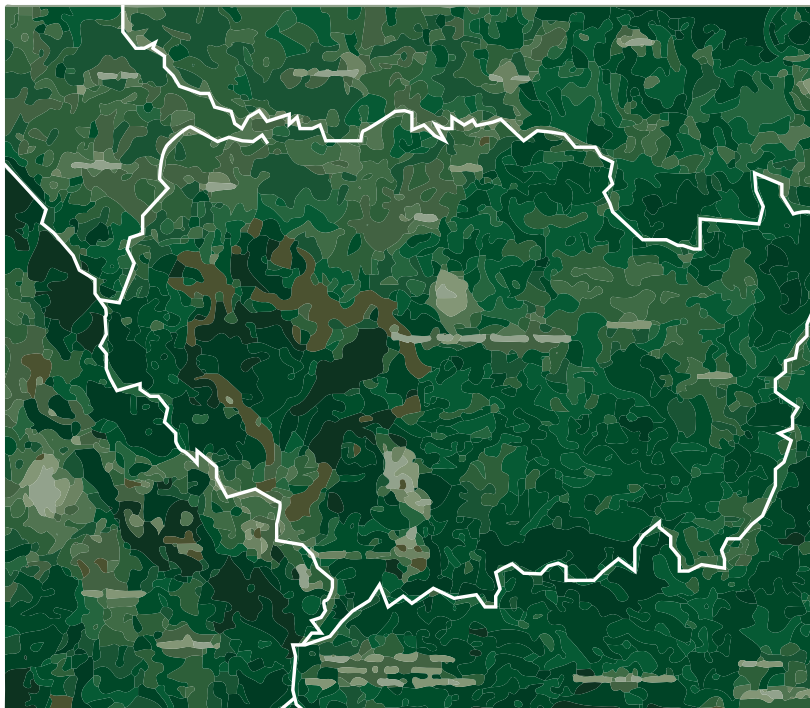
### Project Presentation Sheet 15

Project 3.5E	Development of an Ecotourism Program in the Bajo Yuna Mangrove National Park
<b>Technical Description</b>	<p>The initiative of the Bajo Yuna Mangrove National Park consists of developing an ecotourism program based on an ecological trail in the mangrove along the El Cangrejo-Sánchez route and a kayak route between Caño Colorado - La Ceja in the coastal area of the Bajo Yuna Mangrove National Park. Bajo Yuna, as well as the creation of the conservation forest to promote reforestation and the conservation of riparian forests and coastal wetlands.</p> <p>The Bajo Yuna Mangrove National Park was first declared a Biological Reserve under the name of Idelissa Bonelli de Calventi, through Presidential Decree 233 of 1986. Subsequently, it was incorporated into the National System of Protected Areas in the General Law on Environment and Natural Resources (Law 64-00), but it was cut by more than half its surface, its management category was modified and its name was changed. It currently appears in the Protected Areas Sector Act (Law 202-04) within Category II: National Parks.</p> <p>The Bajo Yuna Mangrove National Park is located in the Samaná province and extends along about 15 km of coast in a north-south direction, covering an area of 110 km<sup>2</sup>. The Bajo Yuna mangroves are a Ramsar site, recognized by the United Nations.</p> <p>The National Park encompasses an area of wetlands and mangroves that is located at the bottom of the Samaná Bay. In the protected area, in addition to the mangroves, there is an extensive swamp in the northwestern area of the park. The Yuna River and the Barracote River flow into the protected area. Visits are mainly done by sea.</p>

	<p>The aspects that must be taken into account for its implementation are the following:</p> <ol style="list-style-type: none"> <li>1. Technical Survey of the Protected Area.</li> <li>2. Identification of the Most Suitable Areas to Develop Activities.</li> <li>3. Elaboration of Technical Studies.</li> <li>4. Design of Necessary Programs.</li> <li>5. Definition of Opportunities for Nature-Based Solutions (NbSs) that are Compatible with the Development of Ecotourism Activities.</li> <li>6. Risk Assessment and Contingency Plans.</li> </ol>
<b>Market Segment</b>	<ul style="list-style-type: none"> <li>• National and international visitors who appreciate nature.</li> <li>• People who enjoy easy adventure activities.</li> </ul>
<b>Specific Activities</b>	<p><b>A. Previous Studies</b></p> <ul style="list-style-type: none"> <li>• A1. Ecotourism development plan for the Bajo Yuna Mangrove National Park, including market study.</li> <li>• A2. Study of tourist load capacity and public use regulations.</li> <li>• A3. Design of a Master Plan and General Budget for basic infrastructure.</li> </ul> <p><b>B. Infrastructure Construction</b></p> <ul style="list-style-type: none"> <li>• B1. Adaptation of access roads and parking areas. (road)</li> <li>• B2. Design and construction of the suspension bridge.</li> <li>• B3. Creation of a Forest Nursery – Mangrove and Drago plants.</li> <li>• B4. Park ranger guardhouse.</li> <li>• B5. Construction of elevated boardwalk (230 meters) inside the mangrove.</li> <li>• B6. Bird watching turret.</li> <li>• B7. Landing dock.</li> <li>• B8. Suspension bridge over canal to cross from the nursery to the trail area.</li> <li>• B9. Small visitor center with bathrooms and cafeteria (60 m2).</li> <li>• B10. Trail signage.</li> </ul> <p><b>C. Conservation Activities</b></p> <ul style="list-style-type: none"> <li>• C1. Reforestation activities of the riparian forest.</li> <li>• C2. Restoration by planting and maintenance of tree volume.</li> <li>• C3. Acquisition of land in the buffer zone of the Protected Area / Upper river or stream watershed / River or stream bank, as a protection mechanism for sources of water that sustains life.</li> </ul> <p><b>D. Training</b></p> <ul style="list-style-type: none"> <li>• D1. Training workshops for local community, tourist guides and park rangers.</li> </ul> <p><b>E. Marketing</b></p> <ul style="list-style-type: none"> <li>• E1. Promotion plan for the Bajo Yuna Mangrove National Park destination and agreements with Tour Operators.</li> </ul>

### Potential Areas

It is estimated that this initiative will be developed in the coastal zone of the Bajo Yuna Mangroves National Park protected area, specifically in the El Cangrejo-Sánchez and Caño Colorado - La Ceja route, which are part of the Yuna Watershed.



Fuente: Imagen Google Earth: Polígono Presa de Hatillo.

### Estimation of Implementation Costs

A GLOBAL budget of USD 1,000,000.00 (includes an estimate of unforeseen events) is estimated for the development of this project. The cost breakdown of the project in US dollars is detailed below.

	Previous Studies	Construction	Conservation Actions	Training	Marketing	Total
<b>Total Investment Costs</b>	-	\$ 480,000.00	\$ 295,000.00	\$ 12,000.00	\$ 13,000.00	\$ 800,000.00
Phase III: Implementation	-	\$ 480,000.00	\$ 295,000.00	\$ 12,000.00	\$ 13,000.00	\$ 800,000.00
<b>Total Operating Costs</b>	\$ 40,000.00	\$ 55,000.00	\$ 55,000.00	\$ 38,000.00	\$ 12,000.00	\$ 200,000.00
Phase I: Planning and Management	\$ 10,000.00	\$ 5,000.00	\$ 5,000.00	\$ 2,000.00	\$ 1,000.00	\$ 23,000.00
Phase II: Project Analysis and Design	\$ 25,000.00	\$ 35,000.00	\$ 25,000.00	\$ 3,000.00	\$ 3,000.00	\$ 91,000.00
Phase III: Project Implementation	-	\$ 10,000.00	\$ 20,000.00	\$ 28,000.00	\$ 3,000.00	\$ 61,000.00
Incidentals	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 25,000.00
<b>PV</b>	\$ 40,000.00	\$ 535,000.00	\$ 350,000.00	\$ 50,000.00	\$ 25,000.00	\$ 1,000,000.00

Data in USD (United States Dollar)

<b>Facilities, Equipment, Technologies and Human Capital</b>	<p><b>Capital Humano:</b></p> <p><b>Human Capital:</b></p> <ul style="list-style-type: none"> <li>• One (1) Excursion Coordinator.</li> <li>• Members of the Center for the Conservation and Ecological Development of the Bay of Samaná and its Surroundings (CEBSE).</li> <li>• Group of nature guides.</li> <li>• Group of local community members.</li> </ul> <p><b>Technologies:</b></p> <ul style="list-style-type: none"> <li>• Research, field visits, data collection.</li> <li>• Use of geographic information systems and other technologies.</li> <li>• Induction and technical training.</li> <li>• Tracking and monitoring.</li> </ul> <p><b>Material and Equipment:</b></p> <ul style="list-style-type: none"> <li>• During the Assessment Phase: Per diem for the hired consultants (vehicles/boats for travel, lodging, meals and technical support on the ground).</li> <li>• During the Participatory and Training Process: Meeting rooms, office supplies (paper, pens, photocopies, etc.), food for attendees (snack and meals), computers, image projector, among others.</li> </ul>
<b>Management and Operations Structure</b>	<p>The objective of the project is the development of the ecotourism program in the Bajo Yuna Mangrove National Park. The management of the project will be in charge of the General Directorate (led by the National Executive, the Ministry of Environment and Natural Resources and the Ministry of Tourism), as well as the Municipal City Council with the support of the Work Group (the participation of key entities such as the Center for the Conservation and Ecological Development of the Bay of Samaná and its Surroundings (CEBSE), the Fishermen's Cooperative of the area, among others, is advised), and the technical assistance contracted for the execution of the project. Said technical assistance will be in charge of the operations of the project to be executed by the Project Manager, 3 technical consultants and local technical support.</p> <p>Regarding the participation strategy, institutional involvement as mobilizing entities will be necessary, and the guidance of the technical assistance contracted for the promotion of the participatory sessions that allow generating the commitment and linkage of the interest groups with the development of the ecotourism program in the Bajo Yuna Mangrove National Park.</p>
<b>Implementation Timeline</b>	<p>A duration of 1.5 years is expected for the development of the project. However, depending on the development of the activities, an extension of six (6) additional months could be considered. It is expected that the projects can continue independently after the completion of the action plan proposed. Likewise, technical and logistical support by the contracted technical assistance is deemed necessary throughout the 3-year duration of the projects.</p> <p>The following table shows the implementation schedule of the activities previously outlined in this project presentation sheet. The schedule follows the numbering of the activities established in said section from the general activity (A, B...) and the corresponding specific activities (A2; B1...).</p>

YEAR 1				YEAR 2	
Q1	Q2	Q3	Q4	Q1	Q2
A1	A3				
A2		B2	B1	B5	
		B3	B4	B6	
			B7	B8	
			B9	C1	
			B10		
			C1	C1	
			C2	C2	
			D1	D1	
				E1	E1

**Rules and Regulations to take into Account**

**Normative and Regulatory Framework**

- General Law on Environment and Natural Resources (Law 64-00).
- Protected Areas Sector Act (Law 202-04).
- National Development Strategy 2030 (Law 1-12).
- Law for the Development of MSMEs (Law 488-08).
- General Law on Tourism (Law 541-02).
- Regulations for Classification and Standards of Travel Agencies (Decree 815-03). August 20, 2003.
- Requirement for authorizations of concessions for ecotourism operations in protected areas.

**Requirements and Permissions**

- Authorization of concessions for ecotourism operations in protected areas issued by the Ministry of Environment and Natural Resources.
- Operations license issued by the Ministry of Tourism according to the type of activity to be developed.

## Project 3.2A

### Development of Prioritized Projects for the Development of the Blue Economy in the Lower Yuna Watershed

#### a) Support for the Development of Aquaculture

#### Project Presentation Sheet 16

Project 3.2A	Design of Alternatives for the Fishing Sector: Support for the Development of Aquaculture
<p><b>Technical Description</b></p>	<p>The excessive fishing pressure exerted in the Yuna-Barracote estuary has not only reduced the available marine resources, but has also limited their capacity for renewal, therefore generating an impact on the local economy that makes it necessary to identify alternatives for diversification. This project aims to promote the use of existing aquaculture equipment in the municipality of Sánchez to maximize its economic performance.</p> <p>It is estimated that there are around 64 ponds in the municipality of Sánchez, several of them financed with funds from the Rural Solutions Program of the National Institute of Hydraulic Resources. Since 2005, 22 of these ponds (2,500 m<sup>2</sup>) are used for aquaculture purposes by the La Fe Fishermen's Association for the cultivation of freshwater shrimp and tilapia. Currently, most of the ponds are not in operation, and the performance of those that are active is low due to not having adequate conditions for aquaculture development.</p> <p>The project consists of the adaptation of 20 ponds from the overall existing pool in the municipality of Sánchez, in order to guarantee minimum sanitary conditions that allow the breeding of shrimp and other fish species for commercialization. Before developing the project, it will be essential to carry out a prior feasibility study that includes an environmental assessment of the location of the ponds (identifying key aspects such as the current quality of the water, impact of the municipal landfill located in the vicinity of the ponds, and necessary mechanisms to guarantee the quality of the water during the operation of the ponds).</p> <p>Based on the prior feasibility study, the project must include the following activities: Provision of basic infrastructure (installation of water supply and drainage systems, construction of water level control systems in ponds, installation of a restaurant-house and parking to accommodate tourist visits); provision of equipment for the ponds (acquisition of water pumps, installation of water filtration and treatment systems, purchase of equipment for monitoring and measuring water parameters, kitchen, tables and chairs for visitors), and for the storage of products (collection center and cold rooms for the storage of frozen fish); protection (security measures to prevent the entry of unwanted organisms); initial stocking and training in sustainable and good aquaculture and management practices.</p>
<p><b>Specific Activities</b></p>	<p><b>1. Project Planning and Management: Processing of financing, contracting of technical assistance, coordination of the Work Plan, development of a participatory strategy, and constitution of the Work Group.</b></p> <p><b>2. Project Analysis and Design</b></p> <ol style="list-style-type: none"> <li>a. Feasibility analysis.</li> <li>b. Definition of the project (species to be grown, locations, infrastructure and equipment, marketing strategy, management model, training...).</li> <li>c. Project review and validation.</li> </ol> <p><b>3. Project Implementation</b></p> <ol style="list-style-type: none"> <li>a. Obtain permits and authorizations.</li> <li>b. Provision of infrastructure, equipment and resources.</li> <li>c. Training actions.</li> <li>d. Operation, marketing and distribution.</li> <li>e. Continuous assessment and improvement (accompaniment).</li> </ol>

<b>Potential Areas</b>	<p>This action consists of the evaluation and adaptation of the ponds currently located on the outskirts of the municipality of Sánchez, in the Los Mangos area (Arroyo Remedio, Carretera de Los Rieles). According to data from the Management Plan of the Bajo Yuna Mangroves National Park, a total of 64 aquaculture ponds are located in the area, built mostly with financing from the INDHRI (National Institute of Hydraulic Resources), and whose total surface area covers 480,000 m<sup>2</sup>.</p>																
<b>Estimation of Implementation Costs</b>	<p>A GLOBAL budget of USD 4,200,000 is estimated for the development of this project. The cost breakdown of the project is detailed below.</p> <table border="1"> <thead> <tr> <th></th> <th style="text-align: right;"><b>Aquaculture</b></th> </tr> </thead> <tbody> <tr> <td><b>Total Investment Costs</b></td> <td style="text-align: right;"><b>\$ 4,000,000</b></td> </tr> <tr> <td>Phase III: Implementation</td> <td style="text-align: right;"><b>\$ 4,000,000</b></td> </tr> <tr> <td><b>Total Operating Costs</b></td> <td style="text-align: right;"><b>\$ 200,000</b></td> </tr> <tr> <td>Phase I: Planning and Management</td> <td style="text-align: right;"><b>\$ 40,000</b></td> </tr> <tr> <td>Phase II: Project Analysis and Design</td> <td style="text-align: right;"><b>\$ 100,000</b></td> </tr> <tr> <td>Phase III: Project Implementation</td> <td style="text-align: right;"><b>\$ 60,000</b></td> </tr> <tr> <td><b>PV</b></td> <td style="text-align: right;"><b>\$ 4,200,000</b></td> </tr> </tbody> </table> <p><i>Data in USD (United States Dollar)</i></p>		<b>Aquaculture</b>	<b>Total Investment Costs</b>	<b>\$ 4,000,000</b>	Phase III: Implementation	<b>\$ 4,000,000</b>	<b>Total Operating Costs</b>	<b>\$ 200,000</b>	Phase I: Planning and Management	<b>\$ 40,000</b>	Phase II: Project Analysis and Design	<b>\$ 100,000</b>	Phase III: Project Implementation	<b>\$ 60,000</b>	<b>PV</b>	<b>\$ 4,200,000</b>
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<b>PV</b>	<b>\$ 4,200,000</b>																
<b>Facilities, Equipment, Technologies and Human Capital</b>	<p><b>Baseline Studies, Plans and Protocols</b></p> <ul style="list-style-type: none"> <li>• Social, economic and environmental feasibility study.</li> <li>• Protocols that establish the operational bases of the project.</li> <li>• Marketing strategy for cultivated species.</li> </ul> <p><b>Human Resources</b></p> <ul style="list-style-type: none"> <li>• Contracted technical assistance for the design and execution of the work that allows the implementation of the project.</li> <li>• Work force dedicated to the implementation and operation of the project. It is estimated that at least between 10 and 12 workers will be involved.</li> <li>• Training program for public-private entities linked to the project, as well as for the local fishing community, in order to guarantee the efficient and sustainable operation of the project.</li> </ul> <p><b>Materials, Equipment and Technologies</b></p> <ul style="list-style-type: none"> <li>• Materials: Initial stocking of selected species, fish food, bags for product packaging.</li> <li>• Equipment and technologies: Pond adaptation (water supply and discharge systems, aeration and filtration, automatic food dispensers, monitoring equipment, power generators, handling and capture equipment, fences and pond protection, recirculation systems, etc.); collection center (processing tables, collection vats, scales, buckets, cold storage room); booth/premises for catering (main structure of the premises, kitchen and kitchen equipment, furniture and catering materials); parking for at least 1 minibus.</li> </ul>																

### Management and Operations Structure

The objective of the project is the design, execution and start-up of the reactivation of the Sánchez aquaculture ponds.

At the LEVEL OF PROJECT DESIGN, and execution of the associated work, it is recommended that technical assistance be hired to lead this process. The project will be in charge of the General Directorate (led by the national Government, and the Ministry of Environment and Natural Resources), with the support of a Work Group (in which the participation of key entities such as CODOPESCA, Government of Samaná, the Provincial Secretariat of the Environment, the Sánchez City Council, among others, is recommended), and with the technical-operational leadership of the assistance contracted for the execution of the project.

Regarding the AQUACULTURAL PONDS MANAGEMENT MODEL, technical assistance must carry out an analysis of the most appropriate model within the framework of the project. Without a doubt, it will be necessary to consider the management of actions from a business vision, focused on continuous improvement and competitiveness. Preliminarily, a public-private management model that involves the local fishing community is potentially proposed.

The management scheme that Sánchez' aquaculture ponds have had to date has shown certain deficiencies, both from a technical point of view and from an economic perspective. For the project to work, there must be a business plan and management with a business vision. There must be a manager who manages the fish production business and who also has technical knowledge to guarantee the continuous and sustainable improvement of the ponds. The Fishermen's Association does not currently have these capabilities.

The business management model, with a properly trained administration, has worked in cases such as SALTOS DE LA DAMAJAGUA (Puerto Plata), where the resource is managed by hiring a management team. In the case of the Sánchez' aquaculture ponds, this entity may be a Board of Trustees formed by:

- A representative of CODOPESCA.
- A representative of CEBSE.
- A representative of the Ministry of the Environment.
- Two representatives from the private sector (for example, purchasing fish shops).

It is not recommended that the managing entity be made up solely of representatives of the private sector, but rather that there is a balance between the public sector, private sector and non-governmental entities (for example, CEBSE - as a neutral and environmentalist NGO –will provide a counterweight in that supervisory board). For its part, the Fishermen's Association will be a beneficiary/user of the facilities, but must follow the technical and administrative guidelines of the managing entity.

The potential and benefits of establishing a single board in charge of managing both projects (aquaculture ponds and mariculture farms) should be assessed, allowing for the creation of synergies and more effective management of the initiatives. This board would have an aquaculture department and a mariculture department, the only difference between both departments being the representatives of the private sector that are part of it. The public entities (CODOPESCA, MARENA) and non-governmental entities (CEBSE) would be the same for both projects.

Finally, it is recommended that the managing entity be partially financed by the State and partially by aquaculture production itself, to ensure that the neutral nature of the manager is not distorted.

### Implementation Timeline

A duration of 3 years is expected for the development of this project. It is expected that the initiative can continue independently after the completion of the action plan proposed. Likewise, technical and logistical support by the contracted technical assistance is deemed necessary throughout the 3-year duration of the project.

The following table shows the implementation schedule of the activities previously outlined in this project presentation sheet by year and quarter. The activities are:

A1. Project Planning and Management: Financing processing, hiring of technical assistance, coordination of the Work Plan, development of a participatory strategy and constitution of the Work Group.

A2. Project Analysis and Design

A2(a). Feasibility analysis.

A2(b). Definition of the project (species to be grown, locations, infrastructure and equipment, marketing

strategy, management model, training...).

A2(c). Project review and validation.

A3. Project Implementation

A3(a). Obtain permits and authorizations.

A3(b). Provision of infrastructure, equipment and resources.

A3(c). Training actions.

A3(d). Operation, marketing and distribution.

A3(e). Continuous assessment and improvement (accompaniment).

YEAR 1				YEAR 2				YEAR 3			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A1	A1										
	A2(a)	A2(a)	A2(b)	A2(b)	A2(b)						
					A2(c)	A3(a)	A3(b)	A3(b)	A3(d)	A3(d)	A3(d)
						A3(b)	A3(c)	A3(c)	A3(e)	A3(e)	A3(e)
					A3(a)	A3(c)					

**Rules and Regulations to take into Account**

**Normative and Regulatory Framework**

- Constitution of the Republic (2015).
- National Development Strategy 2030 (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Marine and Coastal Resources Law of the Dominican Republic.
- Creation of the Dominican Fisheries and Aquaculture Council (Law 307-04).
- Cooperative Associations (Law 127-64).
- Ban on the Capture and Commercialization of Five Species of Crabs (Decree 6-18).
- Protection of Coastal Ecosystems (Decree 112-95).

**Requirements and Permissions**

- Fishing and Aquaculture Permit granted by CODOPESCA.
- Environmental permit issued by the Ministry of the Environment.
- Registration and license of the entity once the management model is defined.

- Other permits: Operating license from the Ministry of Tourism in the case of the restaurant-booth to be installed in the ponds; sanitary permits from the Ministry of Public Health that ensure that the facilities to be developed comply with sanitary standards for food production and avoid risks to public health; among others.
- It will be essential to contact the relevant authorities (especially CODOPESCA) during the feasibility analysis and design phase of the project to ensure compliance with the requirements and regulations in force in the territory at the time of execution.

## Project 3.2B

### Development of Prioritized Projects for the Development of the Blue Economy in the Lower Yuna Watershed

#### b) Support for a Mariculture Pilot Project

#### Project Presentation Sheet 17

Project 3.2B	A.2.2. Design of Alternatives for the Fishing Sector: Support for a Mariculture Pilot Project
<b>Technical Description</b>	<p>The Bajo Yuna River and its mouth in Samaná Bay have seen in recent years a significant reduction in the availability of fishing resources, limiting the economic performance of fishing in the territory and turning it into a self-consumption or subsistence activity. Among the factors that have motivated this situation, the following stand out: Excessive fishing pressure on the river mouth; the practice of unsustainable fishing gear (use of trawl nets such as seine nets or blenders, which generate large volumes of discards and destroy the seabed, affecting the natural habitat of species populations), non-compliance with legal regulations for regulation of fishing activity and the clogging of the Yuna-Barracote river mouths caused by the accumulation of sediments from the upper and middle watersheds of the Yuna River, among others.</p> <p>In short, the excessive fishing pressure exerted in the estuary has reduced the available marine resources and their capacity for renewal, generating an impact on the local economy, therefore making it necessary to identify alternatives for diversification.</p> <p>To this end, this project consists of betting on mariculture in the territory through the design and implementation of two marine farms. The action, which will be carried out in a pilot format, will consist of the construction of two marine farms for the controlled cultivation of species of fishing interest. A prior feasibility study will be carried out that includes an environmental assessment of the potential impacts of these facilities on local ecosystems, and the identification of control and mitigation measures.</p> <p>In addition to the previous study, the following activities will be carried out: Identification of potential species to be cultivated considering market demand; design of the infrastructure necessary for cultivation (sea cages, anchoring systems, floating platforms), and collection of products (processing tables and systems, cold chambers for storing frozen fish, etc.; design of the business plan and management model; implementation, monitoring and control of the impacts of the project in the territory in order to include corrective measures that are considered appropriate.</p>
<b>Specific Activities</b>	<ol style="list-style-type: none"> <li><b>1. Project Planning and Management: Processing of financing, contracting of technical assistance, coordination of the Work Plan, development of a participatory strategy and constitution of the Work Group.</b></li> <li><b>2. Project Analysis and Design</b> <ol style="list-style-type: none"> <li>a. Feasibility analysis.</li> <li>b. Definition of the project (species to be grown, locations, infrastructure and equipment, marketing strategy, management model, training...)</li> </ol> </li> </ol>

<b>Potential Areas</b>	<p>The farms must be located outside the Yuna-Barracote estuary (in which sediments and organisms from the upper and middle watershed accumulate) and at a minimum distance of 5 km from the estuary towards the interior of Samaná Bay.</p> <p>It is important to take into consideration the presence of marine space protection figures in the area of potential project location. Taking into account that the competent authority in the management of protected areas is the Ministry of Environment and Natural Resources, it will be necessary for the Vice Ministry of Coastal and Marine Resources, in collaboration with the National Authority for Maritime Affairs (ANAMAR, for its acronym in Spanish) and the Dominican Council of Fisheries and Aquaculture (CODOPESCA) define the criteria for the issuance of licenses for the location and exploitation of these marine farms.</p>																
<b>Estimation of Implementation Costs</b>	<p>A GLOBAL budget of USD 2,150,000 is estimated for the development of this project. The cost breakdown of the project is detailed below.</p> <table border="1"> <thead> <tr> <th></th> <th style="text-align: right;"><b>Acuicultura</b></th> </tr> </thead> <tbody> <tr> <td><b>Total Investment Costs</b></td> <td style="text-align: right;"><b>\$ 4,000,000</b></td> </tr> <tr> <td>Phase III: Implementation</td> <td style="text-align: right;"><b>\$ 4,000,000</b></td> </tr> <tr> <td><b>Total Operating Costs</b></td> <td style="text-align: right;"><b>\$ 200,000</b></td> </tr> <tr> <td>Phase I: Planning and Management</td> <td style="text-align: right;"><b>\$ 40,000</b></td> </tr> <tr> <td>Phase II: Project Analysis and Design</td> <td style="text-align: right;"><b>\$ 100,000</b></td> </tr> <tr> <td>Phase III: Project Implementation</td> <td style="text-align: right;"><b>\$ 60,000</b></td> </tr> <tr> <td><b>PV</b></td> <td style="text-align: right;"><b>\$ 4,200,000</b></td> </tr> </tbody> </table> <p><i>Data in USD (United States Dollar)</i></p>		<b>Acuicultura</b>	<b>Total Investment Costs</b>	<b>\$ 4,000,000</b>	Phase III: Implementation	<b>\$ 4,000,000</b>	<b>Total Operating Costs</b>	<b>\$ 200,000</b>	Phase I: Planning and Management	<b>\$ 40,000</b>	Phase II: Project Analysis and Design	<b>\$ 100,000</b>	Phase III: Project Implementation	<b>\$ 60,000</b>	<b>PV</b>	<b>\$ 4,200,000</b>
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<b>PV</b>	<b>\$ 4,200,000</b>																
<b>Facilities, Equipment, Technologies and Human Capital</b>	<p><b>Baseline Studies, Plans and Protocols</b></p> <ul style="list-style-type: none"> <li>• Social, economic and environmental feasibility study.</li> <li>• Protocols that establish the operational bases of the project.</li> <li>• Marketing strategy for cultivated species.</li> </ul> <p><b>Human Resources</b></p> <ul style="list-style-type: none"> <li>• Contracted technical assistance for the design and execution of the work that allow the implementation of the project.</li> <li>• Work force dedicated to the implementation and operation of the project. It is estimated that it is necessary to hire between 8 and 10 workers.</li> <li>• Training program for public-private entities linked to the project, as well as for the local fishing community, in order to guarantee the efficient and sustainable operation of the project.</li> </ul> <p><b>Materials, Equipment and Technologies</b></p> <p>Materials: Initial stocking of selected species, fish food, bags for product packaging.</p> <p>Equipment and technologies: Marine farms (4 marine cages, anchoring and floating systems, sensors and environmental monitoring systems and cultured species, automatic feeding equipment, waste management and handling systems, safety devices, etc.); collection center (processing tables, collection vats, scales, buckets, cold storage room); boats.</p>																

### Management and Operations Structure

The objective of the project is the design, execution and start-up of the installation of two marine farms for the cultivation of species of fishing interest in the Bay of Samaná.

AT THE LEVEL OF PROJECT DESIGN, and execution of the associated work, it is recommended that technical assistance be hired to lead this process. The project will be in charge of the General Directorate (led by the national Government, and the Ministry of Environment and Natural Resources), with the support of a Work Group (in which the participation of key entities such as CODOPESCA and the Government of Samaná, the Provincial Secretariat of the Environment, Sánchez City Council, among others is recommended), and with the technical-operational leadership of the assistance contracted for the execution of the project.

Regarding the MANAGEMENT MODEL OF THE MARICULTURE PILOT PROJECT, technical assistance must carry out an analysis of the most appropriate model within the framework of the project. Without a doubt, it will be necessary to consider the management of actions from a business vision, focused on continuous improvement and competitiveness. Preliminarily, a cooperative management model that involves the local fishing community is potentially proposed.

The management scheme of the mariculture project in Sánchez must tend towards effectiveness, both from a technical point of view and from an economic perspective. For the project to work, there must be a business plan and management with a business vision. There must be a manager who manages the mariculture business and who also has technical knowledge to guarantee the continuous and sustainable improvement of the farms. For this reason, management is proposed under the figure of a Board of Trustees formed by:

- A representative of CODOPESCA.
- A representative of the Ministry of the Environment.
- A representative of CEBSE.
- Two representatives of the private sector.

It is not recommended that the managing entity be made up solely of representatives of the private sector, but rather that there be a balance between the public sector, private sector and non-governmental entities (for example, CEBSE –as a neutral and environmentalist NGO– will provide a counterweight in that supervisory board). For their part, representatives of the private sector (associations, cooperatives, etc.) will use the facilities through a concession subject to public competition. These private representatives must follow the technical and administrative guidelines of the managing entity.

The potential and benefits of establishing a single board in charge of managing both projects (aquaculture ponds and mariculture farms) should be assessed, allowing for the creation of synergies and more effective management of the initiatives. This board would have an aquaculture department and a mariculture department, the only difference between both departments being the representatives of the private sector that are part of it. The public entities (CODOPESCA, MARENA) and non-governmental entities (CEBSE) would be the same for both projects.

### Implementation Timeline

A duration of 3 years is expected for the development of this project. It is expected that the initiative can continue independently after the completion of the action plan proposed. Likewise, technical and logistical support by the contracted technical assistance is deemed necessary throughout the 3-year duration of the project.

The following table shows the implementation schedule of the activities previously outlined in this project presentation sheet. The schedule follows the following numbering:

A1. Project Planning and Management: Financing processing, hiring of technical assistance, coordination of the Work Plan, development of a participatory strategy and constitution of the Work Group.

A2. Project Analysis and Design

A2(a). Feasibility analysis.

A2(b). Definition of the project (species to be grown, locations, infrastructure and equipment, marketing strategy, management model, training...).

A2(c). Project review and validation.

### A3. Project Implementation

A3(a). Obtain permits and authorizations.

A3(b). Provision of infrastructure, equipment and resources.

A3(c). Training actions.

A3(d). Operation, marketing and distribution.

A3(e). Continuous assessment and improvement (accompaniment).

YEAR 1				YEAR 2				YEAR 3			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A1	A1										
	A2(a)	A2(a)	A2(b)	A2(b)	A2(b)						
					A2(c)						
					A3(a)	A3(a)	A3(b)	A3(b)	A3(d)	A3(d)	A3(d)
						A3(b)	A3(c)	A3(c)	A3(e)	A3(e)	A3(e)
						A3(c)					

### Rules And Regulations To Take Into Account

#### Normative and Regulatory Framework

- Constitution of the Republic (2015).
- National Development Strategy 2030 (Law 1-12).
- General Law on Environment and Natural Resources (Law 64-00).
- Marine and Coastal Resources Law of the Dominican Republic.
- Creation of the Dominican Fisheries and Aquaculture Council (Law 307-04).
- Cooperative Associations (Law 127-64).
- Ban on the Capture and Commercialization of Five Species of Crabs (Decree 6-18).
- Fishing Exclusion Zones in the Bay of Samaná (Resolution No. 0025-2017).
- Protection of Coastal Ecosystems (Decree 112-95).

#### Requirements and Permissions

- Fishing and Aquaculture Permit granted by CODOPESCA.
- Environmental permit issued by the Ministry of Environment.
- Registration and license of the entity once the management model is defined.
- Other permits: Sanitary permits from the Ministry of Public Health that ensure that the facilities to be developed comply with sanitary standards for food production and avoid risks to public health; among others.

It will be essential to contact the relevant authorities (especially CODOPESCA) during the feasibility analysis and design phase of the project to ensure compliance with the requirements and regulations in force in the territory at the time of execution.

## ANNEX F. DEDICATED GRANT MECHANISM FOR CIF-NPC DOMINICAN REPUBLIC

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### Alignment between the DGM and the CIF-NPC Investment Plan for the Yuna Watershed

The DGM complements the CIF-NPC Investment Plan in strategic areas related to strengthening the resilience of local communities, promoting climate change adaptation and supporting mitigation measures.

In order to promote significant impact, the DGM could choose to focus on projects throughout the watershed in an effort to promote the “From Ridge to Reef” concept, or it could choose to focus on localized issues in specific areas of the watershed and according to its zoning, such as:

- **For the Upper Watershed:** Pay special attention to community-based participation for the conservation processes of Protected Areas, especially national parks and scientific reserves associated with the upper watershed and whose object of conservation is the protection of soil and forest cover.
- **For the Middle Watershed:** Prioritize the territories dedicated to rice production, the technical processes applied and the actors involved in these processes, such as the Irrigation Boards and small producers with whom practices for improving sustainability and productivity can be applied.
- **For the Lower Watershed:** Pay special attention to coastal-marine ecosystems, especially mangrove and Drago plant ecosystems, the environmental importance of these ecosystems and the vulnerability of fishing communities and the potential for sustainable economic development linked to them.

The DGM will support projects proposed and managed in a participatory manner by the communities themselves, considering their traditional and cultural knowledge, as well as their specific needs and priorities related to the sustainable management of natural resources and the protection of their territories.

### Organizational Process of the DGM Dominican Republic

In order to learn about the current state of the Yuna Watershed, identify the main challenges and support the development of this IP, assessment studies were carried out on 7 thematic areas, on which information was also collected on the communities involved, as well as their vulnerability and impact on the territory. Among the findings and as supporting information to lay the foundations for a successful DGM, the following can be highlighted:

- Analysis of threats, exposure and vulnerability to Climate Change in the Yuna Watershed. It based mainly on existing information on threats, exposure and vulnerability of the Yuna Watershed to climate change. It confirms the vulnerability and risk in the watershed to extreme events such as floods and droughts.
- Development potential of Sustainable Tourism. It studied the supply and demand of ecotourism activities in the upper, middle and lower zone (including the coast) of the Yuna Watershed, and whether there

is development potential for these or new initiatives. Identifies community and organized groups with ecotourism initiatives that will be supported by the Investment Plan.

- Assessment of Protected Areas and compatible activities. It quantified the occupation problem that exists in protected areas associated with the Yuna Watershed, the changes in land use to uses not compatible with the assigned protection figure and the pre-feasibility of possible solutions to these problems. Identifies groups that are illegally occupying land in protected areas with activities that are not compatible with the conservation objectives of the occupied areas.
- Assessment of the Payments for Environmental Services Law and its application potential. It identified opportunities for the application of PES in the Yuna Watershed through the execution of projects and opportunities for the development of a voluntary market for payment for environmental services (biodiversity and/or carbon credits). Specifically, in the area of PES and through a survey, it identified the organizations considered most reliable in the watershed, as well as the relevance of organized women's groups as articulators and managers of development and sustainability initiatives in the watershed.
- Formulation of a Portfolio of Nature-Based Solutions. It provided NbS options that can be applied in prioritized subwatersheds of the Yuna. Identifies the relevance of communities as actors that must be linked in the socialization and execution of the implemented NbSs.
- Preparation of a Menu of Agricultural Technologies for producers in the watershed. It validated the differentiated social, environmental and economic feasibility

for farmers in the upper, middle and lower watershed of the Yuna River and their capacities and opportunities to incorporate good agricultural practices.

- Development Potential of the Blue Economy. Identify a portfolio of proposals that responds to the development potential of the blue economy in Bajo Yuna and its coastal zone, which contribute to sustainable development, climate and community resilience of the study area and, especially, to the restoration of ecosystem services. It establishes that the fishing populations in the lower area of the watershed are the main focus of work to pilot mechanisms for the development of the blue economy in the mouth area of the Yuna, both to improve the sustainability of this livelihood and to seek diversification of economic activities in this area.

Among the representative organizations of certain groups of actors worth highlighting, we can mention:

- Federation of Peasants towards Progress (FCHP, for its acronym in Spanish) (upper watershed): The organization works on the comprehensive development of the communities of Alto Yuna in four strategic lines: (1) The local organization of the communities; (2) The management and demand of basic services; (3) Increasing the economic income of families through the improvement and diversification of production, as well as the marketing of crops; and (4) Raising awareness about respect for the environment, territorial planning, care for water, especially the Yuna River, and the defense of these resources against any external threat. The FCHP works in collaboration with local organizations and communities to improve the use of natural resources, implementing projects such as agroforestry plantations, community tourism projects, and reforestation and restoration work in strategic areas of the

upper watershed. This initiative involves about 600 families in the upper part of the watershed, promoting sustainable practices and reforestation projects that have government incentives, but are maintained mainly by the effort and interest of the community's inhabitants. The FCHP also operates a nursery that provides native plants for reforestation and agriculture for family farms.

- Irrigation Boards (middle watershed): They are non-profit organizations, whose responsibility is the operation and maintenance of the tertiary and secondary canals of the middle watershed of the Yuna, which is mainly dedicated to the production of rice. Although they currently have limitations in their management capacities, which will be strengthened through this IP and complementary funds, they must ensure the proper management of the use of water for irrigation in the watershed. These boards are made up of farmers and agricultural landowners who depend on irrigation for their crops. Its main function is to distribute water equitably among users, ensuring that each farmer receives their corresponding quota and that water use is efficient and sustainable. Additionally, Irrigation Boards may be involved in the construction and maintenance of irrigation infrastructure, the implementation of water conservation practices, and the representation of farmers' interests before relevant authorities. These organizations are fundamental for the integrated management of water resources in the Yuna Watershed, contributing to sustainable agricultural development and the well-being of rural communities in the region.
- Center for the Conservation and Ecological Development of the Bay of Samaná and its Surroundings (CEBSE) (lower watershed): The Center for the Conservation and Ecological Development of the Bay of Samaná and its Surroundings (CEBSE Inc.), is a Dominican, non-profit organization, legally incorporated through Presidential Decree 79 of February 28, 1991. Its work area is located in the extreme northeast of the Dominican Republic, covering the peninsula and the Bay of Samaná, Los Haitises National Park and the coastal plains of Sabana de la Mar and Miches, covering the Provinces of Samaná, Hato Mayor, El Seibó and the Bajo Yuna area. Specifically, in Bajo Yuna's river mouth and coastal area, they carry out mangrove reforestation initiatives in the Bajo Yuna Mangrove National Park together with the Ministry of the Environment to carry out repopulation of mangrove and Drago plants in critical areas where the mangrove ecosystem has been lost as consequence of the advance of agricultural use of the land in the lower watershed.

The inputs collected will allow us to have a clear idea of the most relevant community aspects in the watershed, which will allow us to start a sustainable DGM process that promotes results aligned with the IP. Likewise, this data will serve as a basis for establishing the operating guidelines of the DGM in the Dominican Republic, together with the documents on operational guidelines of the framework for the DGM within the framework of the NPC, once they are available.

## ANNEX G: RISK ANALYSIS (TABLE)

The following table provides details on the content of Chapter VII: Implementation Potential with Risk Analysis

Risk Analysis			
Typology	Description	Mitigation	Residual risk
Financial	a. Lack of financial resources to sustain project activity after the participation of the CIF-NPC. This would condition the continuity of the prioritized projects, reducing the socio-economic impact on the territory and the possibilities of diversification.	<ul style="list-style-type: none"> <li>☑ Inclusion of economic parameters in the feasibility analysis of the projects.</li> <li>☑ Identification of potential sources of future financing, additional to CIF-NPC funds.</li> </ul>	Medium
	b. That there are increases in costs where there is a very high difference versus the estimated costs.	<ul style="list-style-type: none"> <li>☑ Establishing a plan B in case of cost increases may mean doing less with the same amount of money.</li> </ul>	Low
	c. Due to the appearance of a large-scale extreme event (e.g. Pandemic), resources should be diverted to other areas and not to NbSs.	<ul style="list-style-type: none"> <li>☑ Establish an investment transfer protocol.</li> </ul>	Low
Operational	<p><b>a. GENERAL:</b></p> <ul style="list-style-type: none"> <li>• Failures in the organizational structure and poor development of the internal processes of each project, due to:               <ul style="list-style-type: none"> <li>» Poorly defined roles and responsibilities.</li> <li>» Little or limited connection on the part of the agents linked to the project, especially on the part of the national and regional government areas. This translates into a lack of commitment or ownership for the correct execution of the project and, possibly, lack of continuity.</li> <li>» Limited availability of human resources with qualifications and capabilities for the implementation of the projects.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>☑ Definition of a potential organizational structure for the implementation of the project: Definition of necessary profiles, roles and responsibilities; holding meetings that encourage participation and appropriation of the project in all its phases (design, execution and monitoring of activities) by the relevant linked agents.</li> <li>☑ Ensure technical monitoring during implementation.</li> <li>☑ It is important to socialize the project with the greatest number of actors and to understand that it is a process with some pilots.</li> <li>☑ A tracking and monitoring system must be taken into consideration to be able to measure the greatest number of benefits of the implementations.</li> </ul>	Medium

Risk Analysis			
Typology	Description	Mitigation	Residual risk
	<p><b>a. NbSs</b></p> <ul style="list-style-type: none"> <li>☑ For implementation monitoring to be successful, technical monitoring is needed; there may be cases where such monitoring is not taken into consideration, putting the successful development of the implementation at risk.</li> <li>☑ There may be interest in some places that were not prioritized, but that can then be expanded.</li> <li>☑ Failure to implement adequate monitoring and evaluation systems can generate a lack of follow-up in the project.</li> </ul>	<ul style="list-style-type: none"> <li>☑ Ensure technical monitoring during implementation.</li> <li>☑ It is important to socialize the project with the greatest number of actors and to understand that it is a process with some pilots.</li> <li>☑ A tracking and monitoring system must be taken into consideration to be able to measure the greatest number of benefits of the implementations.</li> </ul>	<b>Medium</b>
	<p><b>c. TOURISM:</b></p> <ul style="list-style-type: none"> <li>☑ Lack of maintenance of tourist facilities due to the absence of a clear definition of powers and responsibilities.</li> <li>☑ Inadequate management of the flow of cruise passengers to enjoy ecotourism experiences in Bajo Yuna and its river mouth, either due to excess (saturation of reception capacity) or defect (low flow of visitors due to lack of knowledge of the tourist offer).</li> </ul>	<ul style="list-style-type: none"> <li>☑ Clear definition of roles and competencies for the operation of the tourist facilities installed in the protected area. It is advisable to address this aspect within the Co-Management Council of the Bajo Yuna Mangroves Natural Park, which brings together the main actors linked to ecotourism in the natural space.</li> <li>☑ Establishment of coordinated work spaces between the ecotourism project and the tourist authorities of Samaná (Secretary of Tourism of the Government of Samaná) in order to make forecasts of cruise passenger visits and correctly manage the flow of visitors to Bajo Yuna.</li> </ul>	<b>Medium</b>
	<p><b>d. FISHING AND AQUACULTURE:</b></p> <ul style="list-style-type: none"> <li>☑ Conflict of interest or disagreement between the fishing community in relation to the entity (public, private or community) that will manage the aquaculture projects.</li> <li>☑ Lack of funds and resources for the implementation of the Fishing Plan or to assume the operating costs of the identified projects.</li> </ul>	<ul style="list-style-type: none"> <li>☑ participatory definition of a concession model for the exploitation of aquaculture projects that involves the local community and favors the greatest possible socio-economic and diversification impact.</li> <li>☑ Identification of potential future funding sources for the implementation of plans and operation of activities beyond the CIF-NPC.</li> </ul>	<b>Medium</b>

Risk Analysis			
Typology	Description	Mitigation	Residual risk
	<p><b>e. WASTE MANAGEMENT</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Little participation in defined environmental awareness actions.</li> <li><input checked="" type="checkbox"/> Limited provision of municipal equipment and resources (financial, human, technological, etc.) for the implementation of the Waste Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Definition of a strategy for participatory work with the community benefiting from the activities. Search for support with public, private, and non-governmental entities with mobilization capacity (Parley, CEBSE, local churches, etc.).</li> <li><input checked="" type="checkbox"/> Identification of potential future funding sources for the implementation of plans and operation of activities beyond the CIF-NPC.</li> </ul>	<b>Medium</b>
<b>Legal / Regulatory</b>	a. Delays or denial of permits for the execution of prioritized activities.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Active involvement of the agents in charge of granting permits in the development of the project. Holding work meetings to coordinate the requirements and procedures necessary for granting permits.</li> </ul>	<b>Low</b>
	b. Future updates to the regulatory framework that generate incompatibilities with the development of the defined activities.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Consideration of the current regulatory framework and future regulatory perspectives (through technical reports and studies, expert opinions, etc.) for the definition of activities, taking into consideration the most viable measures.</li> <li><input checked="" type="checkbox"/> Identification of current and draft regulations linked to the projects as part of the pre-feasibility analysis.</li> </ul>	<b>Low</b>
	c. Conflicts between the development of activities and the measures contemplated in the Management Plan of nearby protected areas (for example, presence of ponds or public landfill in the buffer zone of the Bajo Yuna Mangrove National Park).	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Clear definition of roles and competencies for the operation of the tourist facilities installed in the protected area. It is advisable to address this aspect within the group that brings together the main actors linked to ecotourism in the natural space.</li> <li><input checked="" type="checkbox"/> Active involvement of the Co-Management Council of the Bajo Yuna Mangrove National Park. Holding work meetings to review compatibilities and authorizable activities in the protected space.</li> </ul>	<b>Low</b>

Risk Analysis			
Typology	Description	Mitigation	Residual risk
Environmental	a. Changing ecosystem conditions caused by activities in the upstream watershed can generate unforeseen impacts in the downstream watershed.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Evaluation, monitoring and follow-up of the impacts in the lower watershed of the projects developed in the upper and middle watershed of the Yuna River.</li> </ul>	<b>Medium</b>
	b. Alteration of ecosystems by introducing changes in water and/or nutrient flows and in the carrying capacity of spaces, affecting the natural patterns of local ecosystems or interventions.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inclusion of environmental parameters in the feasibility analysis of the projects.</li> <li><input checked="" type="checkbox"/> Continuous assessment through studies and technical reports of the environmental impact of the projects developed for the adoption of corrective measures if necessary.</li> <li><input checked="" type="checkbox"/> Survey the baseline for follow-up.</li> </ul>	<b>Low</b>
	c. Extreme weather events (storms, torrential rains...) can affect the effectiveness of recovery measures.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Inclusion of climate mitigation measures for the definition and development of projects. Preparation of a climate risk management study for the projects to be developed that includes: Climate analysis, risk and impact identification, definition of adaptation measures.</li> <li><input checked="" type="checkbox"/> Meeting with the entities that are related to risk and disaster management to understand the risk.</li> </ul>	<b>Medium</b>
Social	a. Community resistance and that of actors with decisions over the territory to the implementation of the projects and the impacts they are expected to generate, especially if the long-term benefits are not understood.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Definition of a strategy for participatory work with the community benefiting from the activities. Search for support with public, private, and non-governmental entities with mobilization capacity.</li> </ul>	<b>Low</b>
	b. Conflict of interest or lack of involvement of the different parties that make up the governance from the beginning of the project.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Creation of open spaces for participation and validation of the activities to be implemented in all their phases (design and implementation).</li> </ul>	<b>Low</b>
	c. Resistance to behavioral changes necessary for the development of projects, especially related to the adoption of more sustainable practices due to fixed habits.	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Incorporate collective construction spaces.</li> <li><input checked="" type="checkbox"/> Inclusion of gender criteria for the exploitation of the equipment and activities to be carried out.</li> <li><input checked="" type="checkbox"/> Raising awareness and support for the hiring of women in equipment management companies.</li> </ul>	<b>Medium</b>

Risk Analysis			
Typology	Description	Mitigation	Residual risk
	d. Reinforcement of the gender gap or barriers to social inclusion in the face of the development of sectors traditionally linked to the male gender.	<input checked="" type="checkbox"/> Definition of minimum social and gender criteria for participation in workshops and work groups for the definition of the contemplated activities (for example, fishing plans, waste, etc.).	<b>Low</b>
<b>Political</b>	a. Changes in the interests and priorities of national and local politics that condition the continuity of the project (elections, new political positions, etc.).	<input checked="" type="checkbox"/> Holding of coordination and appropriation meetings of the project in all its phases (design, execution and monitoring of activities) by the relevant linked agents.	<b>Low</b>
<b>Políticos</b>	b. The usefulness of NbSs is underestimated due to a change in political actors and therefore their interests / generating binding	<input checked="" type="checkbox"/> Generate binding agreements.	<b>Low</b>

## ANNEX H: Integrated Results Framework

### Integrated Results Framework

The Dominican Republic IP responds to CIF's integrated approach to results measurement, as presented within the NPC Integrated Results Framework (IRF) in this Annex. CIF's integrated approach combines essential monitoring and accountability functions with a holistic multi-level and multi-dimensional approach, including a complex systems orientation, and emergent learning opportunities. Within this integrated approach, measurement of program and project impacts are captured via the multiple dimensions of monitoring, evaluation, learning, gender, and other key crosscutting approaches, coalesced within the objective of delivering a nuanced and complete understanding of the program's

progression, and thematic specificities, in delivering a complex and multifaceted program goal.

The left-side columns of the NPC IRF, tracking the key performance indicators of program and project performance, are captured within the Dominican Republic IRF, wherein the program's performance is tracked via targeted, core indicators defined within the NPC IRF, in response to the NPC Theory of Change and its constituent objectives. The right-side columns of the NPC IRF, focused on evaluation of learning approaches (encompassing transformational change signals across dimensions, co-benefits/development impact evaluations, gender and social inclusion analytics, and other targeted evaluations and learning activities) are captured via CIF, country, and MDB-driven evaluations and studies responsive to the program's evidence needs and priorities, as outlined below. In sum,

the approaches allow for a duality between systemized tracking and responsive research and evaluation, designed to complement each other, and leverage mixed methods approaches utilizing different tools, methods, and forms of evidence, but strategically combining them when applicable.

The Dominican Republic IP is therefore also structured to outline the program's results chain—from program-level activities, outputs, outcomes, and impacts (based on the anticipated investment pipeline and the related activities to be funded within the program, the overall program design, and the theory of change) and incorporates elements related to (i) evaluation and learning, (ii) transformational change, (iii) gender and social inclusion, (iv) just transition, (v) SDGs, and (vi) development impacts/co-benefits in addition to the fundamental program results and corresponding indicators.

## Monitoring and Reporting

**Landscape-wide Analysis.** The IP's Integrated Results Framework serves as a fundamental instrument that grounds the country program's high-level goal statement on measurable national indicators and targets, and thereafter links the program's theoretical objectives with the measurable outcome-level results anticipated via its constituent project pipeline. As the IP is developed collaboratively among the Government, implementing MDB partners, and other stakeholders, the process of defining project objectives, and aggregating the related results via the IRF, constitutes a consistent and landscape-wide approach on the coherence of and between interventions, and on accountability between proposed goal statements and pragmatic results estimations.

**Anticipated program impacts.** The Dominican Republic IP currently expects to deliver on 5 of the 9 core objectives of the NPC Investment

Program, and the country's IRF therefore tracks core indicators as relate to each of these outcomes, with the expected target values collating the fractional outcomes expected from each of the 2 individual projects within the program pipeline. Each target value delineates the share of results anticipated from each discrete project, allowing for a differentiated analysis of the varying levels of impacts, vis-à-vis investment volumes and targeted approaches. As such, the IRF will be responsive to any changing dynamics within individual projects, and under- or over-achievement of program level results will allow for learning and adaptation based on challenging or opportune investment environments.

**Protocols for tracking.** The monitoring and reporting of results will be a collaborative process among all stakeholders. Country focal points and implementing agencies, with support from the CIF Secretariat Monitoring and Reporting (M&R) team, will lead on tracking the country IP impact indicators set out at IP approval. Implementing MDBs will monitor, and report annually to the CIF Secretariat, all outcome-level core indicators relevant to each approved project, in accordance with the methodologies, reporting requirements and timelines set out within the NPC IRF, and within the NPC M&R Toolkit. As such, MDBs will be responsible for incorporating these outcome-level indicators into the monitoring and reporting frameworks and mechanisms for each implemented project, alongside any optional outcome indicators and at least one co-indicator per project, also in accordance with the NPC IRF and NPC M&R Toolkit. Country IP M&R workshops, anticipated at inception, midterm, and IP-conclusions along with any, as needed, interim country M&R workshops, will allow for multi-stakeholder cross-sectoral consensus on indicator progress, targets, methodologies, and related gaps, lessons, or enhancements, in accordance with the guidance set out by the CIF Secretariat for the NPC investment program.

Proposed approaches for tracking and evaluating transformational change, just transition, and inclusivity aspects of IP. The IP and associated activities present an important opportunity for learning through an evaluative lens on key themes and goals related to transformational change and just transition. As per the right-hand side of the IRF, in addition to the MDBs own evaluation processes through their independent evaluation offices or other efforts, the MDB and country counterparts will participate in evaluation activities of the CIF. This includes independent program level mid and end-term evaluations and evaluations on key themes, such as transformational change and just transition. Evaluative insights could also relate to diagnostic, design, implementation, economic value, and synthesis evaluations of programs and projects. Any evaluation effort will not replicate existing country evaluation systems but will aim to reflect them as part of the overall approach, drawing data from all existing, credible sources.

Any evaluation on transformational change will use the dimensions of transformational change as identified through the transformational change learning partnership (TCLP) and documented in the program design documents and evaluation guidance provided. Similarly, any evaluation of just transition will consider the CIF just transition framework and its associated dimensions. The guidance and questions provided in the NPC design document related to just transition, transformational change and gender will be used to structure both formative and summative evaluative processes. Key questions to consider include:

- Who is involved and empowered during transition processes? (Procedural Justice)
- Who benefits and who loses in transition processes? (Distributional Justice)
- What is needed, what is planned and are they aligned? (Relevance)
- What systems need to be changed and how? (Systemic Change)
- What is the relationship between urgency and complexity and how is this being managed? (Speed)
- What scaling is required/ was achieved? (Scale)
- What capacity is being built to achieve sustainable development pathways? (Adaptive Sustainability)

A variety of evaluation methodologies may be deployed with a particular emphasis on enhancing participation in evaluation and learning processes as well as ensuring the rapid use of information for learning and course correction where required.

**NATURE, PEOPLE, AND CLIMATE INVESTMENTS PROGRAM INTEGRATED RESULTS FRAMEWORK**

**NPC IMPACT**

**Improved use and management of land and other natural resources for low-carbon and climate-resilient livelihoods and businesses**

**NPC Program Theory of Change:** Investments based on an integrated system-wide approach can reconcile competing uses of land and other natural resources to unlock the potential of nature for climate action. This would lead to improved health of land and other ecosystems, reduced greenhouse gas emissions, and enhanced sustainability and climate resilience of livelihoods and businesses, thereby mobilizing additional public and private funding.

**Dominican Republic IP Theory of Change:** The implementation of nature-based solutions will promote comprehensive, resilient, and low-carbon management in the Yuna watershed.

RESULT STATEMENT	MONITORING APPROACH					EVALUATION AND LEARNING APPROACH
	INDICATORS	BASE-LINE	MEANS OF VERIFICATION	TARGET (DATE)	NOTES	KEY AREAS

**DOMINICAN REPUBLIC IP-LEVEL IMPACTS**

Improved use and management of land and other natural resources for low-carbon and climate-resilient livelihoods and businesses	NPC Impact Proxies:	1. 32,321.98 (tons)	National statistics and MRV systems; macro-level indicators; World Bank (or other MDB) country data	1. Sedimentation in the lower watershed (tons):  20,686 (year 5 of implementation)	Program-level impacts focus on alignment with NDCs and related climate policy mechanisms; national, territorial, and sectoral development priorities; and available statistics at the land diagnostic, Investment Plan, and/or country level.  This aspect of monitoring and reporting is country-driven and will be tailored to the needs, demands, and interests of each CIF recipient country.	<p><b>Signals of transformational change:</b> Signals of transformational change at the program level might focus on more narrowly bounded aspects of land, food, and socio-ecological systems transformation than in the section above (i.e., CIF-level impact). They might cover lower levels of systems transformation – such as the establishment of new agricultural economies, emergence of sustainable revenue sources like timber and tourism, or the prevention of floods – and be more closely tied to individual NPC Investments Plans, land diagnostics, and/or project-level impacts. Specific definitions and methodologies are to be determined.</p> <p><b>Effective establishment of an integrated, multi-sectoral, participatory mechanism for climate-responsive land use planning and management at the landscape level:</b> One core objective of the NPC program is to reconcile competing uses of land and other natural resources, which inherently requires reconciling the competing needs/interests of multiple state and non-state actors.</p>
	National / territorial poverty rates (%)	2. 0 (MT CO2 eq)		2. Soil carbon balance (MT CO2 eq):  130,892 (year 5 of implementation)		
	National / territorial prevalence of moderate and severe food insecurity (%)	3. 24,732 (Kg/year of nutrients exported)		3. Water quality (Kg/year of nutrients exported):  15,828 (year 5 of implementation)		
	National / territorial agricultural land (%)					
	National / territorial rates of deforestation (ha per year)					
	National/ territorial rates of land degradation (ha per year)					
	National / territorial rates of coastal erosion					
Soil carbon balance (GtC)						<p><b>MDBs will not be responsible for program-level impact reporting. All core indicators are situated at the CIF program outcome levels.</b></p>

	<p>Other land health and environmental degradation metrics as applicable to IPs</p> <p>Other social and economic metrics as applicable to IPs</p> <p>Other private sector development metrics as applicable to IPs</p>				<p>To the extent feasible, socio-economic metrics, such as poverty rates and food security, should be further delineated by female-headed households and by other vulnerable/disadvantaged groups.</p>	<p>Some evaluation and learning activities might seek to measure how well the program has addressed key institutional barriers to effective climate-responsive land use planning and management within and across stakeholder groups (i.e., national government, sub-national government, corporates, rural producers, financial institutions, local communities, Indigenous Peoples, civil society organizations, technical backstopping organizations). This would involve assessing both degrees of participation/involvement in decision-making processes (i.e., procedural justice) and changes in relative benefits/vulnerabilities among groups (i.e., <i>distributional impacts</i>).</p> <p><b>Further gender-responsive analyses of land/ecological systems transformation<sup>1</sup></b> might have a specific focus on the improvement of women's land tenure security, for example, or on addressing gender discrimination and inequality in land use/natural resource planning and management, such as in national policies and legal frameworks. These analyses should take stock of advances made toward recognizing and securing the collective land rights of Indigenous Peoples, local communities, and Afro-descendent Peoples (where applicable).</p>
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RESULT STATEMENT	MONITORING APPROACH					EVALUATION AND LEARNING APPROACH
	INDICATORS	BASE-LINE	MEANS OF VERIFICATION	TARGET (DATE)	NOTES	KEY AREAS
<b>DOMINICAN REPUBLIC IP-LEVEL OUTCOMES</b>						
A. Improved management of natural resources	<p><b>NPC CORE 1 (= CIF 1). Mitigation:</b> GHG emissions reduced or avoided or enhancement of carbon stocks</p> <p>(mt CO<sub>2</sub> eq) – direct/indirect</p> <p>= (Increase in carbon reserves, Chapter VIII of the IP)</p>	0 (with reference scenario established)	Mid-term and lifetime estimates by projects	130,892 mt CO <sub>2</sub> eq (year 5 of implementation)	This indicator feeds into <b>CIF Impact 1 (Mitigation)</b> and should be reported as direct vs. indirect reductions (per MDB-approved methodologies) with evidence provided at mid-term and completion.	
A. Improved management of natural resources	<p><b>NPC CORE 2. Land Area:</b> Area of land or other physical environments covered by climate-responsive natural resource management practices (ha) – mitigation/adaptation</p> <p>=(Land area covered by Nature-Based Solutions, chapter VIII of the IP)</p>	0	MDB project results data	1347 ha (year 5 of implementation)	<p>Annual monitoring. This indicator measures the total land area covered by a qualifying adaptation or mitigation intervention at the landscape level, such as reforestation and ecosystem restoration (mitigation), or climate-smart agriculture (adaptation). Land area reported under adaptation should feed directly into <b>CIF Impact 2 (Adaptation)</b>.</p> <p>Disaggregation: Mitigation vs. adaptation</p> <p>Direct vs. indirect<sup>2</sup></p>	

<p>B. Increased adoption of sustainable supply chains</p>	<p>OPTIONAL: Value of ecosystems services generated or protected in response to climate change (USD)</p>	<p>N/A</p>	<p>N/A</p>		<p>N/A</p>	<p>Changes in policies, plans, and institutional capabilities may also be incorporated in <b>analyses of signals of transformational change</b>, which contribute toward the fundamental systems change described above. For example, specific policy analysis might help support the overall understanding of coherence across international and national policies (i.e., relevance) and linkages between national policy and institutional capacity (i.e., scale).</p>
	<p>NPC CORE 3. Sustainable Supply Chains: Number of firms, enterprises, associations, or community groups that have adopted a sustainable supply or value chain approach (#)</p>					
	<p>OPTIONAL: Number of climate-responsive market linkages improved or expanded</p>	<p>N/A</p>	<p>N/A</p>		<p>N/A</p>	
<p>C. Strengthened enabling environment for sustainable uses of land and other natural resources</p>	<p><b>NPC CORE 4. Policies:</b> Number of policies, regulations, codes, or standards related to climate-responsive land or natural resource management that have been amended or adopted (#)</p> <p>= (Policies: Number of specific plans and/or strategies developed and/or updated for the Yuna Watershed, chapter VIII of the IP)</p>	<p>0</p>	<p>MDB project results/ country data</p>	<p>Management Plans: 8 Sectoral Development Strategies: 2 Action Plans or Similar Instruments: 1 Management Plans, Strategies, and Action Plans with Gender and Diversity Perspective: 8  (year 5 of implementation)</p>	<p>Policies, regulations, codes, and standards might be related to:</p> <ul style="list-style-type: none"> <li>-Environment and ecosystems</li> <li>-Private enterprise</li> <li>-Financial markets, institutions, and products</li> <li>-Livelihoods</li> <li>- Land tenure (gender-responsive)</li> <li>-Coastal zone management</li> <li>-Gender equality</li> <li>-Empowerment of Indigenous People, local communities, and religious/ ethnic minority groups</li> <li>-Just rural transitions<sup>3</sup></li> </ul>	

	OPTIONAL: Number of people from targeted institutions and communities trained in climate-responsive measures (women and men)	N/A	N/A	N/A	N/A	
D. Increased access to capital and budgeting for sustainable uses of land and other natural resources	OPTIONAL: Number of sub-national budgeting processes supported that have integrated climate / land-use considerations (#)	N/A	N/A	N/A	N/A	
	OPTIONAL: Value of climate-responsive subsidy reforms implemented (USD)	N/A	N/A	N/A	N/A	
E. Mobilized public and private capital	<b>NPC CORE 5 (= CIF 4).</b> Co-Finance: Volume of co-finance leveraged (USD) – mitigation/adaptation  = (Volume of leveraged co-financing for mitigation/adaptation in the watershed, chapter VIII of the IP)	0	MDB project financial data	TBD "by Board Approval"	Total of non-CIF resources leveraged in NPC projects. Reporting on this indicator feeds directly into <b>CIF Impact 4 (Co-Finance)</b> .  Disaggregation: Source of co-financing (MDB, Government, Private Sector, Bilateral, and Other)  Mitigation vs. adaptation	

<p>F. Rural communities and Indigenous Peoples' sources of livelihoods improved</p>	<p><b>NPC CORE 6. Livelihoods:</b> Number of people receiving livelihood benefits</p> <p>= (Number of individuals benefiting from livelihoods, chapter VIII of the IP)</p>	<p>0</p>	<p>MDB project results data/ surveys</p>	<p>1,500 (year 5 of implementation)</p>	<p>This indicator measures the number of direct project beneficiaries supported with monetary and/or non-monetary benefits from NPC projects, which straddle the social dimensions of climate change and economic gains. Reporting should feed into <b>CIF Impact 3 (Beneficiaries), and where relevant, CIF Impact 2 (Adaptation).</b></p> <p>While there might be some overlap with NPC CORE 7, this indicator measures the number of beneficiaries rather than the number of jobs.</p> <p>Livelihood benefits might include:</p> <ul style="list-style-type: none"> <li>-New or improved sources of income</li> <li>-Improved food access, availability, utility, stability, or security</li> <li>-Improved water access, availability, or security</li> <li>-Strengthened climate resilience of current livelihoods</li> <li>-Entrepreneurship</li> <li>-Access to finance</li> <li>-Education</li> <li>-Health</li> <li>-Other relevant benefits</li> </ul> <p>Disaggregation: By type of benefit (mandatory)</p> <p>By gender (mandatory)</p> <p>By Indigenous People and Local Communities</p> <p>By vulnerable groups (defined per IP/project)</p>	
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	<p><b>NPC CORE 7. Jobs:</b> Number of jobs created – direct and indirect</p> <p>= (Jobs created – direct and indirect, chapter VIII of the IP)</p>	0	MDB project results data/ modeling	110 direct jobs women/ men, 315 indirect jobs women/ Men  (year 5 of implementation)	<p>Direct jobs created should be reported by projects. While there might be some overlap with <b>NPC CORE 6</b>, this indicator measures the number of jobs rather than the number of beneficiaries.</p> <p>Disaggregation: Direct vs. indirect</p> <p>By gender (mandatory) and vulnerable groups</p> <p>By type of job</p>	<p><b>Quality and distribution of jobs:</b> Through both just transition and gender-responsive approaches, further evaluative and learning-oriented analyses may center on the types of jobs created (and lost), and which sub-populations are gaining (and losing) employment opportunities. For example, this might include generating evidence on decent jobs created and plans for addressing jobs lost through skills development and economic diversification activities. Alternatively, it might include analyses of women’s access to medium- and high-skilled green jobs, STEM-education and vocational training, and school-to-work transitions.</p> <p>Modeling: Indirect job creation, such as induced employment along the supply chain, may be estimated using modeling techniques alongside projects’ reporting of direct job creation.</p>
	<p>OPTIONAL: Increase in annual mean household income/ consumption</p> <p>OPTIONAL: Reduction in moderate or severe food insecurity</p>	N/A	N/A	N/A	N/A	
G. Business case for private sector investments demonstrated	<p><b>NPC CORE 8. Private Sector Investments:</b> Number (#) and value (\$) of CIF-supported private sector investments in sustainable land or natural resource management – mitigation/ adaptation</p>	N/A	N/A	N/A	N/A	

H. Fostered innovation	<b>NPC CORE 9 (= CCV 1).</b> Innovation: Number of innovative businesses, entrepreneurs, technologies, and other ventures demonstrating a strengthened climate-responsive business model	N/A	N/A	N/A	N/A	
	<b>OPTIONAL (=CCV 2):</b> Number of innovative products, services, technologies, and processes that have entered a new market context	N/A	N/A	N/A	N/A	
RESULT STATEMENT	MONITORING APPROACH					EVALUATION AND LEARNING APPROACH
	INDICATORS	BASE-LINE	MEANS OF VERIFICATION	TARGET (DATE)	NOTES	KEY AREAS
DOMINICAN REPUBLIC IP-LEVEL CO-BENEFITS						
Social and Economic Development Co-Benefits	<b>CO-BENEFIT 1. Green Growth:</b> Economic growth of targeted sectors or industries within the landscape or ecosystem  = (Income growth generated from the valorization of protected areas, chapter VIII of the IP)	0	Sub-national statistics, IPs, MDB project estimates	3% (year 5 of implementation)	<b>MDBs will need to report on at least one co-benefit indicator per NPC project and can select among a range of options or propose another co-benefit.</b>  This co-benefit would be reported with consideration of the IP/landscape or ecosystem level and a well-articulated link between project-level investments and their contribution toward the area of economic growth. MDBs may propose their own indicators according to local and project context.	<b>Green growth<sup>7</sup></b> is a multi-faceted results area dependent on a variety of local and country-specific characteristics. However, some NPC projects might make a tangible contribution to this area, such as projects that directly support value chain development, climate technology and innovation, or climate-responsive industry. Specific co-benefit indicators in this area should feed into evaluative and learning-based analyses of transformational change at the landscape level.

	CO-BENEFIT 2. Just Transition: Social Inclusion and Distributional Impacts	N/A	N/A	N/A	N/A	
	CO-BENEFIT 3. Governance, Policy, and Planning: Effective governance mechanisms with coherence across sectors	N/A	N/A	N/A	N/A	
	CO-BENEFIT 4. Land Tenure, Rights, and Access	N/A	N/A	N/A	N/A	
	CO-BENEFIT 5. Biodiversity	N/A	N/A	N/A	N/A	
	OTHER CO-BENEFITS	N/A	N/A	N/A	N/A	
RESULT STATEMENT	MONITORING APPROACH					EVALUATION AND LEARNING APPROACH
	INDICATORS	BASE-LINE	MEANS OF VERIFICATION	TARGET (DATE)	NOTES	KEY AREAS
DOMINICAN REPUBLIC IP-LEVEL OUTPUTS						
<b>Phase 3 Outputs. Investment Implementation and Monitoring:</b>  (A) Integrated sustainable land and natural resource investments implemented  (B) Enhanced access/availability of climate solutions  (C) New climate finance instruments piloted	OPTIONAL: Number and type of solutions deployed in agriculture and food systems	N/A	N/A	N/A	N/A	
	OPTIONAL: Number and type of solutions deployed in forests and other ecosystems	N/A	N/A	N/A	N/A	
	OPTIONAL: Number and type of solutions deployed in coastal systems	N/A	N/A	N/A	N/A	

(D) Indigenous People, women, and local communities provided direct access to finance to develop their own projects	OPTIONAL: Number of policies, regulations, codes, standards, or community-led plans related to climate-responsive land and ecosystem management that have been supported (#)	N/A	N/A	N/A	N/A	
	OPTIONAL: Number of private-sector and/or community-based business models or financing modalities piloted (#)	N/A	N/A	N/A	N/A	
	OPTIONAL: Number of people provided with direct access to finance for project development	N/A	N/A	N/A	N/A	
<b>Phase 2 Outputs. Investment Plan:</b>						
(A) Investment action plan developed or enhanced	N/A	N/A	N/A	N/A	N/A	
(B) Public and private priority investments identified and prepared						
<b>Phase 1 Outputs. Diagnostics:</b>						
(A) Climate-related challenges in relevant land-use systems identified						
(B) Priority areas for climate action identified						
(C) Partnerships between stakeholder groups established						

## ANNEX I: INDEPENDENT EXPERT EVALUATION

As part of the preparation of the IP, an evaluation was conducted by an independent expert.

The results of this evaluation are listed below along with the recommendations made by the consultant. The far right column, marked in blue, corresponds in each table to the responses by the Dominican Government (GoDr., for its acronym in Spanish).

### General Criteria

Regarding the general criteria that must be included in the investment plan, we summarize the results below:

Criteria	Yes	No	Main argument	References	Dominican Government Response
1. complies with the principles, objectives and criteria	x		The initiatives prioritized in the IP catalyze a socio-economic model that prioritizes the rational use of natural resources and integrates community participation, closing gender gaps and strengthening capacities throughout all municipalities impacted by the projects. Contributing to promoting an economic dynamic that is based on the importance of ecosystem services and environmental protection.	pp. 75-79 pp. 82-85 pp. 88-97	Thank you very much for the comment.  Received satisfactorily.
2. It takes into account the country capacity to implement the plan.	x		Governance related to environmental and climate policy, water resources, and agriculture was reviewed. The assessment of municipality capacities to impact the entire Watershed can be improved, and the integration of authorities linked to the technical-professional education and energy sectors can be considered.  Each project presentation sheet has an analysis of the applicable institutional and regulatory capacity.	pp. 28-47 pp. 108-111	Thank you very much for the comment.  Received satisfactorily.
3. It has been developed on the basis of sound technical assessments.	x		The investment plan is based on a robust scientific baseline with relevant data from the country and impacted sectors. Climate scenarios, potential flood areas, droughts, sea level rise, emissions data and projections of reduction goals from official documents such as NDCRD2020, among others, have been considered in the design of the IP.	pp. 16-18 pp. 50-74	Thank you very much for the comment.  Received satisfactorily.
4. It demonstrates how it will initiate transformative impact.	x		The social transformation required is outlined so that the use of natural resources occurs with the criteria of rationality and sustainability, and that these, in turn, serve to generate economic growth compatible with the forecast of climate risks budgeted for the country and for the Watershed in particular.	pp. 82-85 pp. 89-92	Thank you very much for the comment.  Received satisfactorily.

Criteria	Yes	No	Main argument	References	Dominican Government Response
5. It provides for prioritization of investments, stakeholder consultation and engagement, adequate capturing and dissemination of lessons learned, and monitoring and evaluation and links to the results framework.	TBD		<p>At the time of this review, the public consultation information gathering document has not been completed.</p> <p>What was raised during the missions, workshops and meetings was included. The consolidated public consultation document and the gender-specific one are in the process of being prepared. The indicators and the suggestion of their adjustments must be integrated into the "Integrated Results Framework" and into each project presentation sheet.</p>	<p>Pág. 18</p> <p>Págs. 114-118</p>	<p>Thank you very much for the comment.</p> <p>At the time of review by the independent expert, the draft IP was in its public consultation process. In this final version of the IP, the results of the public consultation have been included, as well as the results of the Gender and Diversity consultations that were carried out in the watershed. You can find details about these processes in Annex C: Consultations with Interested Parties.</p>
6. It adequately addresses social and environmental issues, including gender.	x		There is a fairly complete approach to social aspects, including household composition, infrastructure, education levels, trades and economic activity of men and women, among other relevant aspects to guarantee the consideration of this general criterion.	<p>pp. 75-79</p> <p>pp. 89-92</p>	<p>Thank you very much for the comment.</p> <p>Received satisfactorily.</p>
7. It supports new investments or funding is additional to on-going/ planned MDB investments.	x		A survey of public and/or private projects has been carried out in the area of influence of the Watershed, and indeed this IP contributes and supports the development of new investments and existing initiatives.	<p>pp. 100-105</p> <p>p. 111 and in the annex of project presentation sheets</p>	<p>Thank you very much for the comment.</p> <p>Received satisfactorily.</p>
8. It takes into account institutional arrangements and coordination.	x		National climate governance, ministerial powers and the formation of governance at the municipal level have been planned. In recommendations we have suggested integrating the validation of the technical capacity of city councils to support the execution of the IP.	pp. 28-47	<p>Thank you very much for the comment.</p> <p>Received satisfactorily.</p>
9. It promotes poverty reduction.	x		The socio-economic approach used in contextualization, design and project presentation sheets of the IP considers this criterion widely.	<p>pp. 28-29</p> <p>pp. 43-47</p> <p>p. 63</p>	<p>Thank you very much for the comment.</p> <p>Received satisfactorily.</p>
10. It considers cost effectiveness of investments.	x		The design has foreseen the cost of the investments.	p. 22	<p>Thank you very much for the comment.</p> <p>Received satisfactorily.</p>

## Specific Criteria

Regarding the specific criteria, the version of the plan reviewed to date provides the following content:

Criteria	Yes	No	Main argument	References	Dominican Government Response
Reduced or avoided GHG emissions stemming from the changing use of land and erosion of natural resources and systems across various sectors	x		An increase in carbon stocks is expected. However, the definition of quantitative indicators is pending.	pp. 28-33 pp. 116-117	Thank you very much for the comment.  At the time of review by the independent expert, the goals related to the selected indicators had not been specified. In this final version of the IP you can find the goals for each indicator in Chapter VIII: Monitoring and Evaluation.
Enhanced climate-resilience of communities.	x		Main social vulnerabilities have been identified and indicators, to be determined, related to them are integrated.	pp. 77-79 and project presentation sheets	Muchas gracias por el comentario.  Recibido conforme
Builds the climate-resilience of natural resources and ecosystems	x		It directly contributes to water security, food security, ecosystem-based adaptation, coastal-marine planning and management, among others.	p. 33 and each project presentation sheet	Thank you very much for the comment.  Received satisfactorily.
Supporting livelihoods of rural communities and indigenous peoples, empowering of women, and, as appropriate, the management of biodiversity.	x		Social vulnerabilities have been considered, such as the existing gaps for female empowerment and their insertion in formal education and the workforce.	pp. 82-86	Thank you very much for the comment.  Received satisfactorily.

In addition to these specific criteria, the IP has considered thematic areas of relevance to establish and promote NbSs, such as:

- Focus on climate change.
- Catalyze increased investments in NbSs.
- Enabling environment.
- Implementation capacity.

**I. Compliance with Investment Criteria and/ or Business Model Relevant to the Program**

The problems that are foreseen to be addressed with the projects prioritized in the IP have been clearly identified, aligned with at least 5 development initiatives, aligned with the IP. Each of them has been provided with a

conceptualization of the proposed solution, an economic valuation and their resource mobilization potential and coordination with initiatives of multilateral development banks (MDBs). (See pages 82 to 85 and project presentation sheets).

In a complementary manner, opportunities for payments for environmental services were identified, under the provisions of the current law on the matter, for the commercialization of emission reduction certificates, for the carbon capture potential of the initiatives, among other potentialities associated with generating a more sustainable economic model, betting on trends such as the blue economy and the circular economy.

**II. Recommendations**

Recommendation	Dominican Government Response
<p>Harmonize/Align qualitative and quantitative indicators with indicators considered in nationally-adopted instruments, such as:</p> <ul style="list-style-type: none"> <li>• Development Agenda 2030 – Sustainable Development Goals (direct and indirect impacts).</li> <li>• National Development Strategy.</li> <li>• NDCRD 2020.</li> <li>• Climate change adaptation strategy in the agriculture sector.</li> <li>• Health and climate change profile.</li> <li>• Dominican Republic 30x30 Strategy (Global Framework for Biodiversity).</li> <li>• Green Taxonomy of the Dominican Republic.</li> </ul>	<p>Thank you very much for the comment.</p> <p>Within the framework of the IRF of the CIF-NPC, all the indicated instruments have been considered to select the appropriate indicators for this IP.</p>
<p>Include mandates on planning and territorial ordering with business initiatives identified in the IP.</p>	<p>Thank you very much for the comment.</p> <p>The business initiatives of both component 2 and component 3 are aligned with the Territorial Planning, Land Use and Human Settlements Law (LOTUSAH). (Law 368-22)</p>
<p>Validate the municipal government's capacity to promote and manage municipal development plans that contain the social, economic and environmental initiatives prioritized in the territory.</p>	<p>Thank you very much for the comment.</p> <p>Component 1 of institutional strengthening includes support for competent authorities, which includes municipal authorities.</p>

Recommendation	Dominican Government Response
<p>Verify that the initiatives prioritized in the IP are considered in the lines of work of the participatory budgets, in cases where it is applicable.</p>	<p>Thank you very much for the comment.</p> <p>The recommendations that consider the municipality, its capabilities, and strategic planning and development instruments will be deepened during the design stage of the Dedicated Grant Mechanism.</p>
<p>Align capacity creation and strengthening interventions to the results of the national consultation process revolution 4.0 of the National Institute of Professional Technical Training (INFOTEP, for its acronym in Spanish).</p>	<p>Thank you very much for the comment.</p> <p>This consideration has been included in this final version of the IP. You can see the reference on page 96 of Chapter V: Description of the Program and Complementarity of CIF funds.</p>
<p>Link with findings from the evaluation of the potential for the creation of green jobs prepared by the United Nations Development Program (UNDP).</p>	<p>Thank you very much for the comment.</p> <p>Reference to this recommendation has been included on page 85, Chapter 4: Co-financing Development Activities for the Investment Plan.</p>
<p>Improve analysis of institutional and regulatory implementation capacity, integrating a verification of how many municipalities have environmental management units (EMUs) in their city councils and what their status is (positions, skills, available equipment and machinery, salaries, etc.).</p>	<p>Thank you very much for the comment.</p> <p>Component 1 of institutional strengthening includes support for the competent authorities, which includes the municipal authorities.</p>
<ul style="list-style-type: none"> <li>• Unify activities:</li> <li>• • Preparation of a Development Strategy for the Yuna Watershed as an Ecotourism Destination and implementation of prioritized projects.</li> <li>• • Preparation of a Blue Economy Development Strategy for the lower watershed and mouth of the Yuna and implementation of prioritized projects,</li> <li>• And consolidate them in the “elaboration of a development strategy for the Yuna Watershed.” Said strategy must contain, among the thematic axes to be structured, the following:</li> <li>• - Tourism, including but not limited to ecotourism, nautical tourism, among others.</li> <li>• - Fishing.</li> <li>• - Agriculture.</li> <li>• - Renewable energy and energetic efficiency.</li> <li>• - Mobility and interconnectivity.</li> <li>• - Comprehensive waste management.</li> </ul>	<p>Thank you very much for the comment.</p> <p>After an analysis of the recommendation, it was decided to keep the activities separate, given the complexity and diversity of the challenges and opportunities present in each sub-region of the watershed (upper, middle or lower watersheds).</p> <p>The NPC will support the strategies that are sectoral execution, and these strategies will be articulated at the level of the entire watershed through the Watershed Management Plan and the Watershed Committee, as indicated in the National Watershed Management Plan initiative of the Ministry of Environment.</p>
<p>Include in the integrated results framework and each project presentation sheet the requirement to systematize lessons learned and practical implementation mechanisms of each Project, so that later with the success cases a design, implementation and monitoring kit of potential NbS projects can be structured.</p>	<p>Thank you very much for the comment.</p> <p>This recommendation has been integrated into the files of all Component 2 projects, whose activities include the implementation and monitoring of NbSs.</p>



