A photograph of a dense tropical forest. Sunlight filters through the thick canopy of green leaves and branches, creating a dappled light effect. The trees are tall and slender, with various types of foliage, including large, broad leaves and thin, vertical stems. The overall atmosphere is lush and vibrant.

CONSERVATION INVESTMENT STRATEGY

**FOR RESIDENT AND MIGRATORY BIRDS OF THE CHOCÓ-ANDEAN
REGION IN NORTHWEST ECUADOR**

CONSERVATION INVESTMENT STRATEGY

FOR RESIDENT AND MIGRATORY BIRDS OF THE
CHOCÓ-ANDEAN REGION IN NORTHWEST ECUADOR

An initiative of:



With the support of:



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Front and back covers: Canandé Forest Reserve - Fundación Jocotoco, Javier Aznar.

A scenic view of a vast, hazy forest landscape. In the foreground, a large, dark green tree with dense foliage is centered, its branches extending outwards. The background shows rolling hills covered in a thick forest, with a light blue haze or mist settling over the valleys and distant ridges. The sky is a pale, clear blue. The overall atmosphere is serene and natural.

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PREFACE

The Conservation Investment Strategy for Resident and Migratory Birds of the Chocó-Andean Region in Northwestern Ecuador is a joint initiative of BirdLife International and its Ecuadorian partners Aves y Conservación and Fundación de Conservación Jocotoco. The purpose of this document is to guide investment towards establishing effective conservation actions for birds and their habitats in the Chocó-Andes biome in Northwestern Ecuador within a ten-year time frame (2023 - 2033). The Open Standards for the Practice of Conservation, a planning methodology widely used in the region, was chosen to create a conceptual model that describes the region's current situation and threats. This model constitutes the basis of a results chain and theory of change that reflect strategies to mitigate or reduce threats in the Chocó region over the next ten years. The Open Standards for the Practice of Conservation approach was applied during seven participatory workshops designed to include the largest possible number of stakeholders in the region. Participants included representatives from the public and private sectors, academia, non-governmental organizations (NGOs), and local community members who contributed to and validated the information described in this plan.

Photo: Juan Carlos Valarezo
Description: Male Gould's Crowned Woodnymph *Thalurania colombica* ssp. *verticeps*. A typical hummingbird of the subtropical Chocó-Andes forests of Northwestern Ecuador.

EXECUTIVE SUMMARY

The Chocó bioregion and area of endemic biodiversity saddles the Ecuador - Colombia border and totals approximately 100,000 km². Its conservation priority is critical due to habitat loss caused by human activities. In northwestern Ecuador, this area of approximately 18,542 km² is known as the Chocó-Andes. It covers an altitude range between 0 to 3,800 meters above sea level and is home to unique species of birds such as the endangered Black-breasted Puffleg (*Eriocnemis nigrivestis*), a hummingbird endemic to the Chocó and Central Andean Páramo. It is also an important area for migratory boreal species such as the Cerulean Warbler (*Setophaga cerulea*).

This important region requires the implementation of appropriate and consensual conservation strategies that respond to the needs for biodiversity conservation while remaining sensitive to the sustainability dynamics of the ancestral, Afro-descendant and rural populations inhabiting the Chocó-Andes landscapes and ecosystems. With the participation of local stakeholders, BirdLife International and its Ecuadorian partners, Aves y Conservación and Fundación Jocotoco, designed nine conservation strategies focused on the Chocó of the Northwestern Andes to be implemented over a period of ten years. These strategies seek to respond to previously identified problems, some of which are historically rooted in the region and responsible for the loss of vegetation cover, affecting the health of ecosystems and putting the future of biodiversity and the people who inhabit the northwestern Chocó-Andes at risk.

Seven of these strategies are considered high priority:

(1) establish an incentive program for the conservation of the Chocó-Andes of Northwestern Ecuador; (2) implement comprehensive education and communication initiatives with local communities; (3) implement a legal-environmental strengthening program; (4) build capacity in local monitors on the legal procedures needed to address wildlife trafficking; (5) restore vegetation cover to generate connectivity between remnant forest patches; (6) implement innovative financial systems for the preservation and protection of conservation target species and for forest and biodiversity restoration; (7) creation and management of private protected areas and other conservation figures in the region (Subsystems).

Two strategies were identified as medium priority: the program for the adequate disposal of solid and liquid waste from households, agricultural and business facilities; and the campaign for responsible ownership and control of feral domestic animals (dogs and cats) in the Chocó-Andes of Ecuador.

This document is a strategic guide for actors who work or are interested in the protection of this region, through not only environmental and conservation actions, but also participatory initiatives promoting economic and social justice in consensus with decision makers. These are the actions that guarantee effective conservation of the northwestern Chocó-Andes.



Photo: Juan Carlos Valarezo
Description: Bird watchers from the Chocó-Andes of Northwestern Ecuador.

ACKNOWLEDGMENTS

The authors express their gratitude to the multiple actors who contributed to the development of this document. These individuals include representatives from both public and private sectors, NGOs, academic institutions, civil society, independent professionals, and local communities with valuable experience in the Northwestern Chocó-Andes region.

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OPEN STANDARDS FOR THE PRACTICE OF CONSERVATION

This plan was developed following the Open Standards for the Practice of Conservation. This methodology is designed to “describe the general process necessary for the successful implementation of conservation projects” (*Conservation Measures Partnership, 2020*). It is organized into a five-step management cycle:

- 1 Conceptualize the vision and context of the project.
- 2 Plan actions and monitoring.
- 3 Implement actions and monitoring.
- 4 Analyze, use, adapt.
- 5 Capture and share learning.

The idea of this methodology is to provide a road map for greater effectiveness and efficiency of conservation projects. The Open Standards have five general principles: (1) they are participative, they involve the appropriate stakeholders; (2) they develop and maintain alliances to sustain a project over time; (3) they internalize learning; (4) they document decisions and (5) they make adjustments when necessary.

This methodology is not a recipe that must be followed to the letter; on the contrary, it is flexible and adaptable to enable the most appropriate decisions for each scenario (conservationstandards.org).

The Conservation Investment Strategy was developed specifically to conceptualize the context of the target area, and plan for implementation and monitoring. The Northwestern Ecuadorian Chocó-Andes **situational model** presents a situational analysis in terms of the causal relationships that exist between conservation targets, threats and contributing factors. A corresponding **results**

chain and its derived **theory of change** serve to plan actions and strategies. The proposed activities for each strategy were identified through participative consultation in order to mitigate the threats facing the different habitats and ecosystems of the target region and its inhabitants.

This process was carried out by inviting a comprehensive range of stakeholders to a series of workshops in order to collect all necessary information. The first three workshops were conducted with a committee of expert ornithologists from the region to prioritize species and sites. The following seven workshops involved participants from the public and private sectors, academia, NGOs, and local communities to gather the information required to build the situational model and results chain forming the basis of the theory of change for threat reduction (Annex 1. Thematic axes and workshop participation).



Photo: Juan Carlos Valarezo
Description: Tobar Donoso Lagoon, Cotacachi-Cayapas National Park

BACKGROUND

The Chocó bioregion is an important compendium of diversity (Lessman *et al.* 2014). It is an area shared between Ecuador and Colombia, sometimes associated with Magdalena and Tumbesian regions (Mittermeier *et al.* 2011) (Figure 1). The Chocó is considered the ninth most biodiverse vegetation hotspot in the world. It concentrates around 2,750 endemic plant species in approximately 0.2% of the Earth’s surface (Pérez-Escobar *et al.* 2019). The Chocó contains the highest number of endemic birds in the entire American continent: 63 endemic species in approximately 100,000 km² (Devenish *et al.* 2009).

The geographic focus of this plan is the Chocó-Andes of Northwestern Ecuador, in the provinces of Esmeraldas, Carchi, Imbabura and Pichincha (18,542 km²). Apart from its great natural richness and biodiversity, the region provides a range of ecosystem services for more than 1,172,600 inhabitants of adjacent rural and urban towns (INEC, 2022). Perhaps the most important of these is water provision and regulation enabling human consumption, productive activities, and electricity generation. The forests of the region are also important carbon sinks, with the capacity to sequester up to 250 tons of carbon per hectare. (<https://www.chocoandinopichincha.com/>).

Despite the importance of these forests for supporting biodiversity and human life, the Northwestern Chocó-Andes region is historically threatened due to deforestation and land use change resulting from the advance of the agricultural frontier, industrial logging and mining (MAE, 2015; Tamayo *et al.*, 2020; BirdLife International, 2022a).

The rising rate of deforestation in the Ecuadorian provinces corresponding to the Chocó region is a cause for concern.

Figure 1. Map of the Chocó bioregion



- Key**
- Priority Area
 - EBA Chocó
 - Tumbes Choco Magdalena hotspot



Sources:
Endemic Bird Areas of the World. (Birdlife International, 1998).
Tumbes-Chocó-Magdalena (CEPF Ecosystem Profile, 2001)

According to Finer and Mamani (2019), the historical loss of Chocó forest in Ecuador is 61%, which corresponds to 1.8 million hectares in an altitude range of 400 to 1000 m.a.s.l. According to the Ministry of the Environment, Water and Ecological Transition (MAATE), from 2008 to 2014 Esmeraldas lost 5,467 hectares of forest and was one of the three provinces with the highest national rate of deforestation (MAE, 2015). Between 1990 and 2008 a loss of 1.9 million ha of forest was attributed to the timber industry (Tamayo *et al.* 2020). Since 2015 mining is regarded to be an important strategic sector for the country (BCE, 2015). About 90 large-scale metal mining concessions are concentrated in the Northwestern Chocó-Andes, in different phases of operation depending on the location (Situational Map of Mining in Ecuador, 2018). Large-scale mining projects such as Cascabel and Llurimagua in the province of Imbabura are making great strides and are the cause of current or predicted social-environmental conflicts in the region (BCE, 2021).

Photo: Rich Carey / Description: Deforestation in Chocó forest



Several conservation and research initiatives have been carried out to stop human-induced habitat loss. Among the most important of these, the following stand out in particular:

(1) regional ecological and socioeconomic evaluations (Vázquez *et al.* 2005; MECN, 2010; Jahn, 2011); (2) ecosystem restoration in high-Andean areas (Aves y Conservación, 2021), (3) land purchase for conservation (Fundación Jocotoco, 2020; Ecominga, 2022; FCAT, 2022), (4) generation of environmental, farming and community infrastructure and social networks in the provinces of Pichincha and Imbabura, and (5) legal territorial defense against mining activities in Intag (Torres & Peralvo, 2019). Particularly since 2011, the province of Pichincha has managed to incorporate three areas for conservation and sustainable use in addition to the Andean Bear Ecological Corridor, covering around 97,592 ha of territory (SMANP, 2022).

CONSERVATION NEED

Deforestation caused by decades of agroforestry expansion and mining concessions throughout the Northwestern region of Ecuador is threatening the ecological integrity of unique ecosystems, as well as alternatives for local development (Hazlewood, 2012; Roy *et al.*, 2018). According to the national poverty map based on household consumption data at the provincial level, three Chocó-Andes provinces (Esmeraldas, Imbabura, and Carchi) have the highest poverty rates in the entire country – from 57% to 96%– (Cabrera *et al.*, 2014). More recent data on the incidence of poverty by income place these same provinces with the following percentages accumulated between 2014 and 2017: Esmeraldas 41.6%, Carchi 29.1%, and Imbabura 28.5%

Photo: Jaime Culebras, Photo Wildlife Tours
Description: Palm plantation, Canandé.



(INEC, 2018). In conclusion, provincial poverty data indicate that the pressure on this ecosystem will not cease unless urgent alternatives are found.

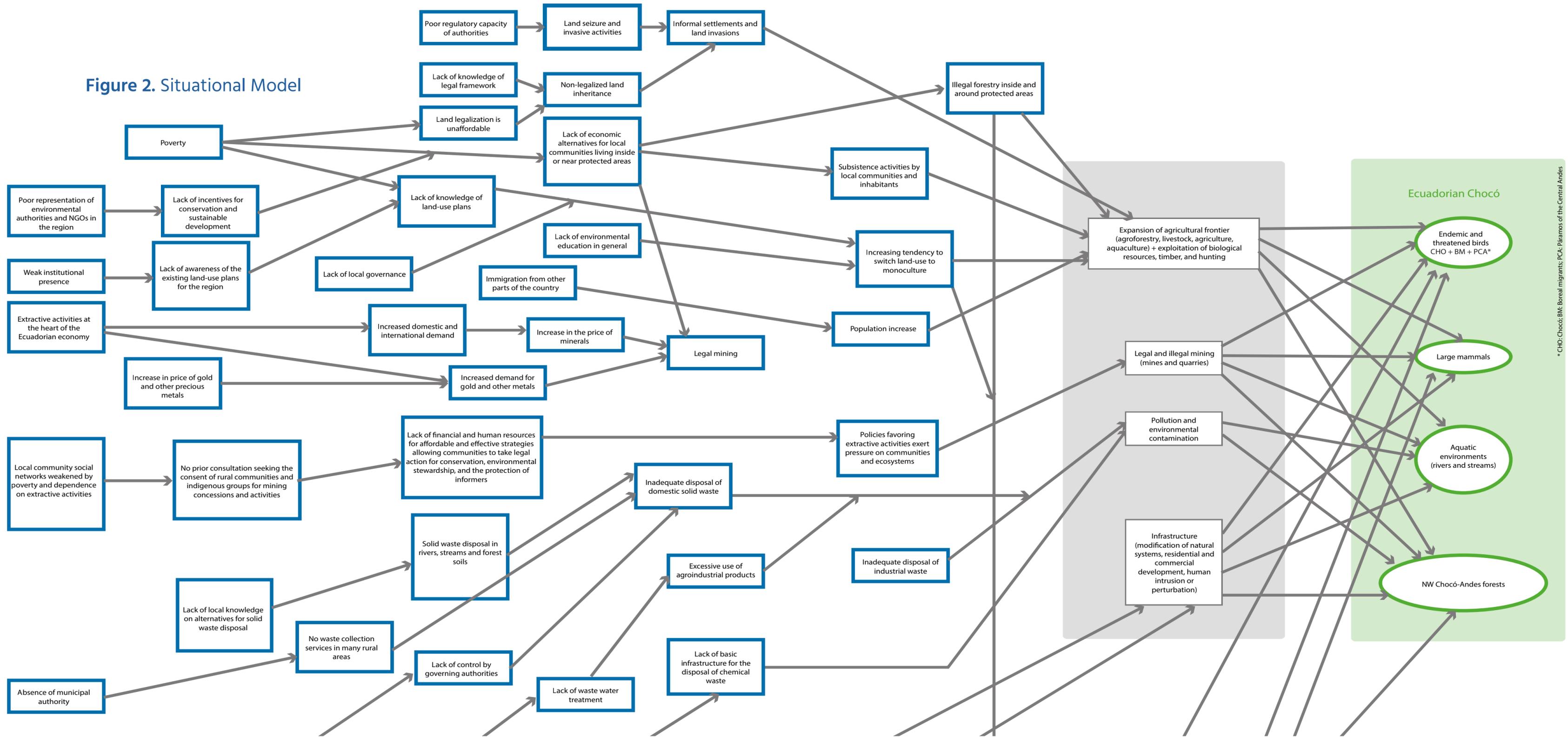
The situational model at the root of the present strategy highlights several of the above threats, such as the expansion of the agricultural frontier, the logging industry, and mining. The model also identifies other threats, such as discharges causing river pollution, the alteration of natural systems caused by infrastructure, and other human disturbances (e.g., the presence of invasive or feral species). The contributing factors to each of these threats are detailed in Figure 2.

One of the most important challenges in the region lies in the discrepancy between the agendas of different sectors. This applies to the public and private sectors, local communities,

tourism agencies, and conservation NGOs, among others. It is therefore necessary to identify effective conservation actions that adequately align with the socioeconomic development of the region.

This document aims to consolidate itself as a strategic consultation tool for conservation practitioners, social scientists, and other professionals invested in supporting the development of local livelihoods and the recovery of ecosystems in the Northwestern Chocó-Andes. In addition to similar publications, such as the Ecosystem Profile: Biodiversity Hotspot of the Tropical Andes (CEPF, 2021), the present work aims to help inform strategic actions to address the region's needs and determine effective conservation solutions over at least ten years.

Figure 2. Situational Model



CURRENT CONTEXT

Over the last 20 years, various research, conservation, and legal actions have sought to reduce the above-mentioned threats affecting the Chocó-Andes of Northwestern Ecuador. These actions have been launched by governmental and/or non-governmental organizations, or factions of local communities. However, governance and landscape restoration continue to face several challenges at different scales of land administration (Wiegant *et al.* 2020).

As part of the government initiatives financed through international cooperation, the Sustainable Environmental Investment Fund (FIAS) leveraged the Socio Bosque Project to design the REM program (*Redd for Early Movers*), a derivation of the REDD+ Action Plan. This initiative proposes a “payment for results” scheme to impulse the reduction of greenhouse gas emissions caused by deforestation. The program still has 10 years to go and seeks to support bio-enterprise and sustainable production, as well as governance and forest management (FIAS, n.d.). Although this initiative has potential, it should be evaluated both for its impact on conservation and biodiversity and for the proposed economic development models (Rudel, 2000; Raberg & Rudel, 2007; Rival, 2010; Hazlewood, 2012; Ortega-Pacheco *et al.*, 2018; Roy *et al.*, 2018). According to the National Secretariat for Planning and Development (SENPLADES), only 212.12 ha of Chocó lowland forest were included in the Socio Bosque project (SENPLADES, 2019).

Other notable initiatives promoted in the region include birdwatching and scientific research. In the province of Pichincha, for example, birdwatching is a traditional emblem of conservation and a focus for economic development in the Chocó-Andes (Mindó Cloud Forest, 2010; Torres *et al.*,

2020). For the capital of Ecuador (Quito), located in the project’s area of influence and where in addition some important Chocó-Andes bird areas are located, tourism provides a higher income (2.4%) compared to agriculture, livestock, forestry, fishing (1.7%), or mining and quarrying (0.5%). It is estimated that tourism contributes 3% to Quito’s GDP (Quito Turismo, 2022).

In the province of Esmeraldas, where the rate of deforestation is highest, attempts have been made to link scientific information on threatened birds to proposed actions for sustainable forest management (Jahn, 2003). Other examples include research on the management of small shade-grown cacao plantations still embedded in Chocó forests, with a view to improving both cacao productivity and habitat for endemic Chocó and boreal migratory birds (Waldron *et al.* 2012). Additionally, Fadiman (2019) carried out an analysis of local community use of the palm (*Iriartea deltoide*, “pambil”) and the potential of using it as a tool to influence conservation in the Mache-Chindul Ecological Reserve. Palacios & Jaramillo (2016) evaluated the state of conservation and abundance of the trees most threatened with extinction in Chocó versus the demand from the intensive logging industry.

Some species prioritized in this publication have already been the object of prior research and specific conservation actions. For example, research has been conducted on the dietary preferences and habitat use of the Black-breasted Puffleg (*Eriocnemis nigrivestis*), shedding light on the need for vegetation connectivity (Guevara *et al.*, 2015, 2017). An Action Plan was prepared for this species in 2008, and has been updated to cover the 2020 - 2030 period (Jahn & Santander, 2008; Aves y Conservación, 2019).

Research on the Banded Ground-Cuckoo (*Neomorphus radiolosus*) has provided insight into this species’ occupancy range and reproductive behavior (Karubian & Carrasco, 2008). Projects are currently in progress in Esmeraldas to expand the research on the Banded Ground-Cuckoo occupancy range and establish conservation actions with the involvement of local communities (Montenegro-Pazmiño, 2020; Montenegro, 2022).

A few protection strategies and initiatives have shown positive results. For example, in 2018 the Chocó-Andes ecosystems of the province of Pichincha were declared a Biosphere Reserve (UNESCO, 2018). At the close of 2021, the Constitutional Court of Ecuador applied the constitutional provision for the “Rights of Nature” and voted in favor of protecting the Chocó cloud forest of Los Cedros in the province of Imbabura (Constitutional Court of Ecuador, 2021; Guayasamin *et al.* 2021).

There are several activities distributed throughout the area of influence of this project. Local initiatives run by inhabitants, social networks and/or NGOs are currently or may be potentially aligned through co-participation with the different strategies mentioned in this publication. Examples include specific projects for the conservation of Critically Endangered flora and fauna, such as Fundación Cóndor Andino’s work with *Spizaetus isidori* (Freile *et al.* 2019), or the Fundación Jocotoco project to prevent the extinction of two species of trees - the Critically Endangered *Magnolia canandean* and *Magnolia dixonii*, of which there are only 60 and 6 mature individuals respectively left in the wild (Kimbrough & Radwin, 2022; Rivers & Castañeda, 2016a; 2016b). Other projects include monitoring and bird ringing initiatives at the “Un Poco del Chocó” Research Station (Un Poco del Chocó, 2022), and acoustic monitoring in the Mashpi forests to control illegal hunting and detect endemic and endangered species (Mashpi, 2022).



Photo: SL-Photography
Description: Birdwatching trail in the cloud forest of Mindo, Ecuador.

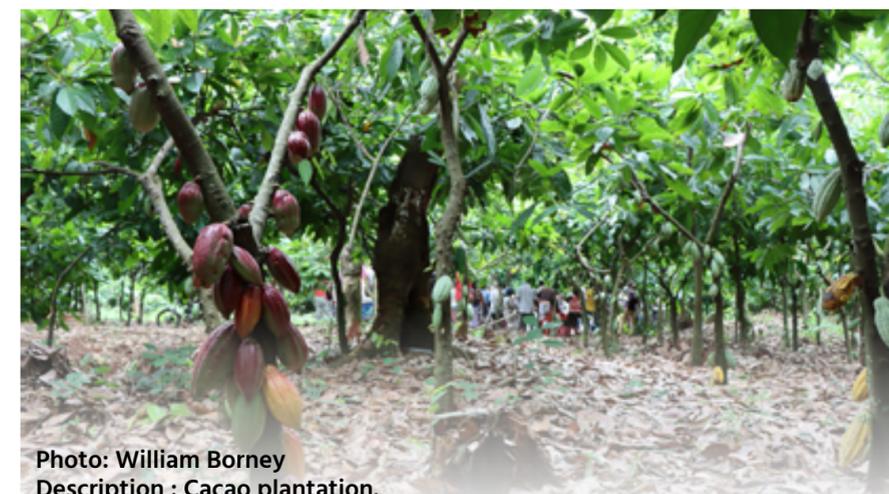


Photo: William Borney
Description : Cacao plantation.



Photo: Diego Sugoniaev
Description: Indigenous protests against oil extraction and mining concessions.

SCOPE¹



Photo: Mario Pilataxi.
Cerulean Warbler, Narupa Reserve.

Geographic scope and conservation objects

The Northwestern Chocó-Andes in Ecuador is noted for its rain forest, characterized by the Chocó lowland forest ranging from sea level to 1,500 m.a.s.l. (Devenish *et al.* 2009) and the subtropical and montane cloud forests on the western slopes of the Andes that reach 3,800 m.a.s.l. (BirdLife International, 2022). The conservation objects identified in this publication include not only the forests themselves but also large mammals, aquatic environments, and a number of priority bird species that are described in the next section (Figure 2).

Priority birds

Currently, 12 endemic bird species of the Chocó and Central Andean Páramo are listed in one of the three global categories of greatest concern for extinction (Critically Endangered CR; Endangered EN, and Vulnerable VU) (BirdLife International, 2022a ; 2022b and 2022c). Furthermore, according to the Red List of Endangered Birds of Ecuador 32 species endemic to the Northwestern Chocó-Andes are included in one of the three highest threat categories of local extinction (Freile *et al.* 2019). (Annex 2: Endemic Chocó species of the Northwestern region of Ecuador registered in the Conservation Strategy target area).

In an effort to provide focus for the actions recommended by this publication, experts in the region prioritized endemic, resident, and endangered avifauna (Annex 3: Methodology for focal species prioritization). 11 species were selected as a flagship for the conservation of the Chocó-Andes of

Description: Boreal migratory species dependent on Chocó - Andes forests.

1 The elements described in this section were identified and validated in the workshops held to develop the present Strategy (Annexes).

Northwestern Ecuador (Table 1). Of these species, six are endemic residents of two of the three afore-mentioned Endemic Bird Areas (EBAs) located in the Chocó (5 spp.) and the Central Andean Páramo (1 sp.) (BirdLife International, 2022a; 2022c).

Priority resident species: Long-wattled Umbrella Bird (*Cephalopterus penduliger*), Plate-billed Mountain-Toucan (*Andigena laminirostris*), Banded Ground-Cuckoo (*Neomorphus radiolosus*), Black-breasted Puffleg (*Eriocnemis nigrivestis*), Scarlet-breasted Dacnis (*Dacnis berlepschi*), Great Green Macaw (*Ara ambiguus*) and Black-and-chestnut Eagle (*Spizaetus isidori*). This list was complemented with three boreal migrants of conservation concern in North America: the Cerulean Warbler (*Setophaga cerulea*), the Olive-sided Flycatcher (*Contopus cooperi*) and the Canada Warbler (*Cardellina canadensis*) (Freile *et al.*, 2019 ; USFWS, 2021; BirdLife International, 2021).

Priority sites

The identification of priority bird species enabled a similar prioritization of sites. The criteria used were: (1) the presence of current IBAs and KBAs (KBA, n.d.); (2) the presence of public or private protected areas; (3) the presence of endemic Chocó bird species; (4) the presence of unprotected territories with latent threats such as extractive projects for minerals and infrastructure. This exercise also made use of existing data identifying priority sites in Continental Ecuador (Cuesta *et al.* 2013) and in the Neotropics (Burbano-Girón *et al.* 2021).

An area of 8,899 km² was prioritized (Figure 3). Of this, 1,406 km² is inside a protected area, meaning that most of the priority sites are not under public or private protection. 2,076 km² overlaps with priority areas for the conservation of migratory birds and residents, as identified by the ConservaAves program (Audubon, 2022).

Scientific name	Common name	Endemic Bird Area (EBA)	National Red List, 2022	Global Red List, 2022
<i>Cephalopterus penduliger</i>	Long-wattled Umbrella Bird	Chocó	EN	VU
<i>Andigena laminirostris</i>	Plate-billed Mountain-Toucan	Chocó	VU	NT
<i>Neomorphus radiolosus</i>	Banded Ground-Cuckoo	Chocó	EN	EN
<i>Eriocnemis nigrivestis</i> ¹	Black-breasted Puffleg	Central Andean Páramo	CR	EN
<i>Glaucidium nubicola</i>	Cloud-forest Pygmy-Owl	Chocó	EN	VU
<i>Dacnis berlepschi</i>	Scarlet-breasted Dacnis	Chocó	EN	VU
<i>Ara ambiguus</i>	Great Green Macaw	----	CR	CR
<i>Spizaetus isidori</i>	Black-and-chestnut Eagle	----	CR	EN
<i>Setophaga cerulea</i> ²	Cerulean Warbler	----	VU	NT
<i>Contopus cooperi</i> ²	Olive-sided Flycatcher	----	NT	NT
<i>Cardellina canadensis</i> ²	Canada Warbler	----	LC	LC

1 Endemic to Ecuador (Freile & Restall, 2018).

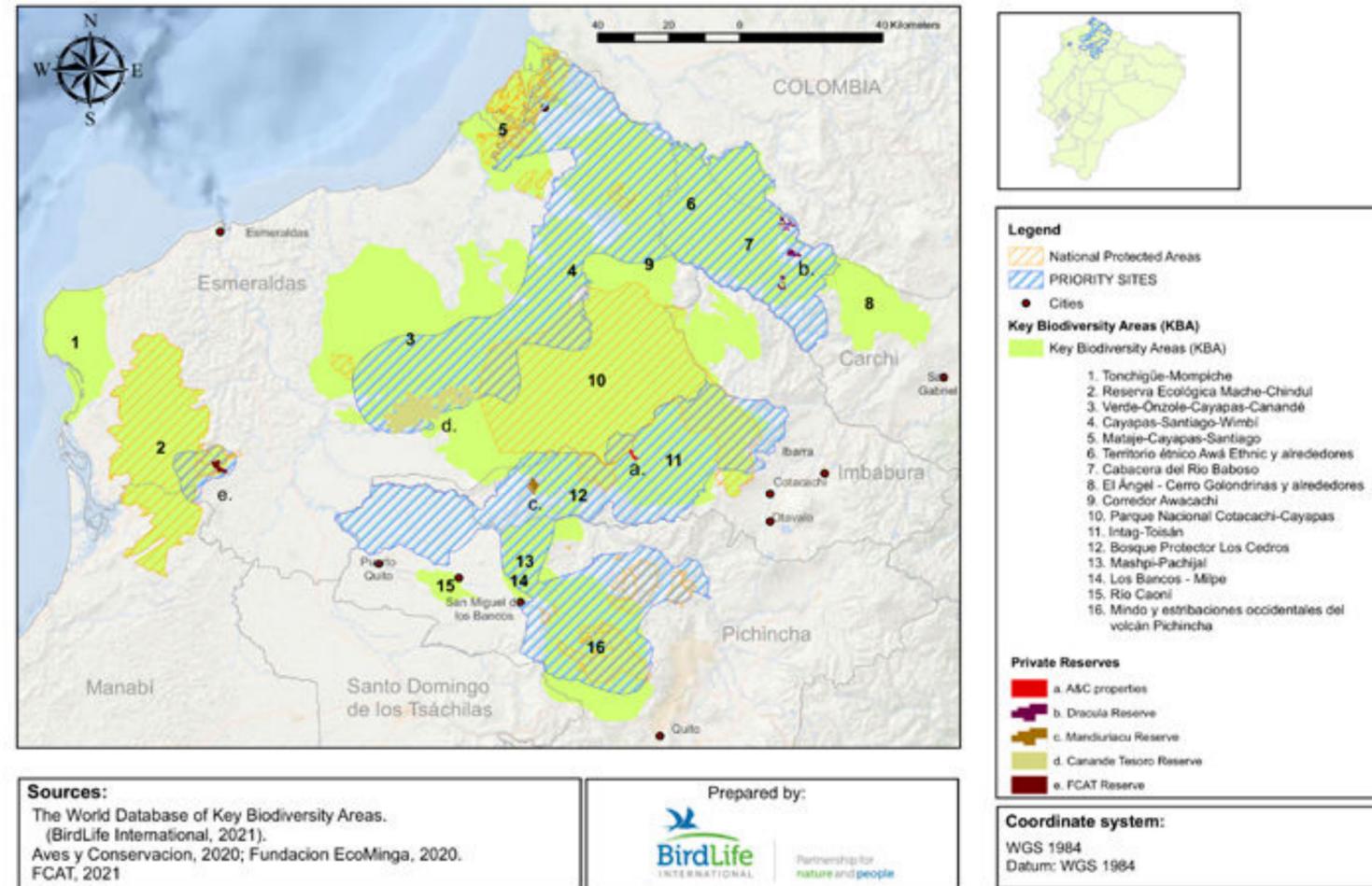
2 Migratory bird of conservation interest (USFWS, 2021).

Table 1. Priority species in the Conservation Investment Strategy for Resident and Migratory Birds of the Chocó-Andean Region in Northwestern Ecuador



Figure 3. Map of priority sites

Conservation Investment Strategy for resident and migrant birds in the Choco of Northwestern Ecuador



CONSERVATION OUTCOMES

The purpose of this document is to guide investments in conservation actions for birds in the Chocó - Andes of Ecuador, obtaining the highest possible return on investment, recognizing priorities, identifying threats, and establishing effective strategies to address these threats in a period of ten years (2023-2033).

Five objectives were defined for the preservation of birds and other conservation objects in the Chocó-Andes of Northwestern Ecuador:

- 1 Between 2023 and 2033, reduce the annual rate of vegetation cover loss caused by human activities from xx% at baseline to yy% post intervention.¹
- 2 Between 2023 and 2033, protect xx hectares of threatened Chocó-Andes forest and other ecosystems through legal procedures impulsed by local inhabitants aiming to stop polluting extractive activities (e.g. metal mining).
- 3 Between 2023 and 2033, reduce the concentration of heavy metals, coliforms, and other pollutants in water and soil from xx% at baseline to yy% post-intervention.
- 4 Between 2023 and 2033, reduce feral domestic animal populations in priority sites from xx individuals at baseline to yy individuals post-intervention.
- 5 Between 2023 and 2033, reduce the number of birds captured for illegal trade from xx individuals at baseline to yy individuals post-intervention.



Photo: Miquel Bonet. Olive-sided Flycatcher, Canandé Reserve.

¹ 'xx' refers to information to be obtained through baseline research that does not currently exist in the region. 'yy' refers to the change obtained with respect to the baseline after an intervention. In this sense, xx% and yy% refer to baseline and post-intervention data respectively, collected by undertaking surveys with different strategic actors and based on existing information.

IMPLEMENTATION PLAN / THEORY OF CHANGE

The Conservation Investment Strategy for Resident and Migratory Birds of the Chocó-Andean Region in Northwestern Ecuador aims to implement nine strategies to fulfill the five objectives described. The different strategic approaches seek to base themselves on the best scientific evidence available and on the involvement of civil society.

Several strategies focus on sustainability, establishing changes in the production and development matrix, the protection and decontamination of water, waste management, and the reduction of threats such as hunting, illegal trafficking, and the presence of invasive feral domestic fauna. Each of the strategies was identified in the results chain obtained from the situational model (Annex 4: Results Chain generated in workshops).

The following section describes each strategy in order of priority (high, medium, low)¹, and the expected intermediate results (ER). The activities corresponding to each strategy are detailed in Annex 5: Implementation plan with suggested activities.

HIGH PRIORITY Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use.

¹ All the strategies were evaluated by the workshop participants and classified into priority categories: high, medium and low. High priority: strategies that urgently need to be implemented. Medium priority: strategies that need to be implemented in the short to medium term. Low priority: strategies that do not need to be implemented urgently or in the short to medium term.

This strategy responds to Objective 1, which focuses on reducing the rate of deforestation caused by the expansion of human activities. It seeks to incentivize the participation of local people or communities in the conservation of ecosystems and biological diversity, and to maintain sustainable production systems. The strategy seeks to evaluate already existing incentives (for example, Socio Bosque) as well as potential sustainable economic alternatives and financing tools, considering the recovery and protection of the Chocó-Andean ecosystems and local subsistence needs.

- ER 1.1** Sustainable and viable economic alternatives for the region identified and evaluated.
- ER 1.2** Small-scale sustainable agriculture strengthened.
- ER 1.3** Business model for sustainable products designed and managed.
- ER 1.4** Payments for environmental services identified and implemented.
- ER 1.5** Improved socio-environmental and economic conditions.

HIGH PRIORITY Strategy 2. Comprehensive education and communication initiatives with local communities.

Strategy 2 is transversal to all the proposed objectives. It entails environmental education and communication programs on issues related to the conservation of the Chocó-Andean ecosystem, as well as how to deal with different threats. This strategy thus addresses the following thematic axes: (1) the importance of forests and biodiversity;

(2) avoid illegal trafficking; (3) Reduce pollution, and (4) responsible pet ownership and control of feral domestic animals.

- ER 2.1** Baseline data are obtained in the different thematic axes aiming to strengthen conservation actions for species and at priority sites.
- ER 2.2** Behavior of residents has changed positively regarding their relationships with nature.

HIGH PRIORITY Strategy 3. Legal-environmental strengthening program *Territorial Defense.

Responding to Objective 3, this strategy seeks to apply legal frameworks to protect the territories threatened by polluting extractive activities. It is designed to support and implement legal-environmental rights to protect forests and manage conservation actions such as the creation of protected areas contained within subsystems. Prior consultation with local communities and inhabitants is key to the execution of this strategy.

- ER 3.1** Capacities of local administrations and public services (Environmental Authority) are strengthened and in consensus with local inhabitants for the application of the law on individuals and corporations at the local level (for example, control of deforestation).
- ER 3.2** Structures enabling social participation are established and capacities are strengthened for legal-environmental defense.
- ER 3.3** Participatory rapid assessment of the status of the Northwestern Chocó-Andes IBAs and KBAs as conservation symbols at local and international levels.

MEDIUM PRIORITY Strategy 4. Program for the disposal of solid and liquid waste from households, agricultural and business facilities.

This strategy responds to Objective 3, which focuses on reducing the concentration of heavy metals, coliforms, and other pollutants in water and soil. Strategy 4 aims to identify

and raise awareness on the risks of the main contaminants present in the Chocó-Andes region with local communities, agricultural producers, and companies, and establish ordinances for their safe disposal in the medium term with the involvement of the competent authority.

- ER 4.1** Sources of contamination (e.g. solid waste) of water bodies and soil are clearly identified.
- ER 4.2** Contingency and mitigation measures are designed and implemented by provincial and municipal authorities to avoid the contamination of water bodies and soil.
- ER 4.3** Local inhabitants and companies change their behavior by respecting the regulations to reduce the threat of contamination.
- ER 4.4** Decreased risk of soil and water contamination as a result of improved waste management in the Northwestern Chocó-Andes.

MEDIUM PRIORITY Strategy 5. Campaign for responsible ownership and control of feral domestic animals (dogs and cats).

Strategy 5 responds to Objective 4 by aiming to reduce pressure on native fauna caused by the presence of feral domestic animals in priority sites. The presence of invasive or domestic feral species is a considerable problem, largely because of its effect in decimating wild bird populations, for example. Strategy 5 aims to reduce this threat through awareness campaigns promoting responsible pet ownership, population censuses of feral domestic animals, sterilization campaigns, and others.

- ER 5.1** The population status of feral domestic animals (e.g., cats and dogs) and their impact on wildlife is evaluated.
- ER 5.2** Responsible pet ownership program is accepted by local authorities and residents.

HIGH PRIORITY Strategy 6. Build capacity amongst local actors (governments and civil society) to apply the legal framework to address wildlife trafficking.



This strategy responds to Objective 5, which seeks to reduce the number of birds captured for illegal trade. This objective entails diagnosing the trafficking problem in the region and technically supporting research on identified cases.

ER 6.1. Bird species subject to illegal trafficking are protected.

ER 6.2. Local governance to fight bird trafficking is strengthened through a legal-environmental monitoring program focused on indicator species (e.g., endemic and threatened spp.) that is implemented through the cooperation of local actors with municipal and ministerial environmental authorities.

HIGH PRIORITY Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.

This strategy responds to Objective 1, aiming to reduce the annual rate of vegetation cover loss as a consequence of human activities. Strategy 7 is a linchpin for the successful implementation of the other strategies in this plan and drives all ecological restoration actions in affected areas that benefit the priority species. It constitutes a science-based conservation strategy to generate connectivity between forest patches and improve the habitats of local species.

ER 7.1 Key areas for passive or active reforestation are identified.

ER 7.2 Committed cooperation exists between local inhabitants, conservation organizations, municipal authorities, and environmental entities for the restoration of various key areas.

ER 7.3 Permits to undertake vegetation restoration activities in indigenous / Afro-descendant and/or municipal territories are submitted for approval.

ER 7.4 Degraded and/or connecting areas are restored.

ER 7.5 Monitoring programs for recovered and interconnected areas (corridors) are launched and technically assisted.

ER 7.6 Local authorities are committed to the conservation

of the forests and biodiversity of the Ecuadorian Chocó and are willing to contribute to long-term conservation and restoration activities in the region.

HIGH PRIORITY Strategy 8. Implement innovative financial mechanisms and systems that promote the protection and restoration of target forests and biodiversity.

This strategy responds to all the objectives outlined in this publication. It implies the involvement of public and private actors to effectively create alliances for conservation, restoration, and the creation of private investment funds, among others.

ER 8.1 Companies present in the region are committed to the conservation of forests and biodiversity and desire to contribute financially to restoration activities and campaigns to prevent illegal wildlife trafficking.

ER 8.2 Public/private funding sources for restoration are adequately managed.

HIGH PRIORITY Strategy 9. Creation and management of private protected areas and other conservation figures in the region (Subsystems).

Responding to Objective 1, this strategy aims to reduce the annual rate of vegetation cover loss caused by human activities. Strategy 9 is tied to BirdLife International's "ConservaAves" project for the creation and management of private protected areas and other conservation entities in the region, in terms of supporting existing or proposed subsystems located in the Chocó-Andes of NW Ecuador.

ER 9.1 Municipal and provincial protected areas (ACUS, biocorridors, etc) that allow sustainable livelihoods have been designed.

ER 9.2 Public, private and/or community Protected Areas and other conservation figures are created, supported, and financed.

ER 9.3 Indigenous and other local community territories in the region are protected and conserved.

ER 9.4 The current vegetation cover of Ecuador's Chocó-Andes forests is conserved.

"The different strategies aim to be founded on the best scientific evidence available and through the involvement of all the actors relevant to the conservation of this region."



MONITORING, EVALUATION & LEARNING

Monitoring, Evaluation, and Learning (MEL) measures progress on project goals and objectives. This process evaluates impact and provides insight into a project's implementation with a view to making any necessary improvements and adaptations (BirdLife International, n.d.). Table 2 shows the indicators and measurement methods for the expected results of each of the strategies in this plan. The indicators must be reviewed each fiscal year in order to measure the progress of the plan, or redefine them if necessary.

Table 2. Monitoring and evaluation of activities by strategy and expected result

Strategy	Expected Result ER	Impact indicators	Method of measurement
Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use.	ER 1.1 Sustainable and viable economic alternatives for the region identified and evaluated..	<i># of sustainable economic alternatives are selected to be implemented</i>	Gathering of technical information, surveys, evaluation systems.
	ER 1.2 Small-scale sustainable agriculture strengthened.	<i># of individuals and/or small farmer associations trained to implement good practices.</i>	Technical evaluation system for analysis of viability and financial sustainability (survey and analysis tool).
		<i># of farmers who have implemented good practices.</i>	Pre and post-intervention collection of technical information via surveys. Timelines and content from workshops, and topics for capacity-building.
		<i>## local products with green seals and/or certifications.</i>	
	ER 1.3 Business model for sustainable products designed and managed.	<i># micro marketing plans for sustainable products.</i>	Methodology for the elaboration of marketing plans. Pre and post-intervention data collection.
		<i># of sustainable products offered in the market.</i>	System to analyze financial viability and sustainability (survey and analysis tool).
<i># of strategic alliances with the private sector for the commercialization of products.</i>			
ER 1.4 Payments for environmental services (PES) identified and implemented.	<i># PES sources identified and implemented.</i> <i># small producers benefited by some form of PES.</i>	Pre and post-intervention data collection through literature review, interviews with experts, surveys, and others .	
ER 1.5 Improved socio-environmental and economic conditions.	<i>% increase of family economic income in communities involved.</i>	Collection of technical information, and literature review. Methodologies for environmental impact studies. Methodology for preparing Management Plans (based on existing and ongoing plans). Market positioning and sales analysis.	

Strategy 2. Comprehensive education and communication initiatives with local communities concerning: -responsible ownership of pets and control of domestic feral animals; -importance of forests and biodiversity; -Avoidance of illegal wildlife trafficking; -Reduction of polluting activities.	ER 2.1 Baseline data are obtained in the different thematic axes aiming to strengthen conservation actions for species and at priority sites.	<i># of conservation actions identified for the priority species and sites.</i>	Baseline technical data collection and literature review.
	ER 2.2 Behavior of residents has changed positively regarding their relationships with nature.	<i># assessments made regarding community members' relationship with nature.</i>	Baseline collection of technical information. Post-intervention evaluations. Interviews with experts, and surveys of local community members regarding their perception of the conservation objects detailed in this publication, and of biodiversity in general.
		<i># of people/local populations informed of the value of forests and biodiversity (ecosystem services).</i>	
		<i># of campaigns carried out in the four different thematic axes (responsible pet ownership, importance of forests and biodiversity, illegal traffic, and pollution reduction).</i>	
		<i>% of the target population showing behavior change in the different thematic axes (responsible pet ownership, importance of forests and biodiversity, illegal traffic, and pollution reduction).</i>	
<i># local councils for environmental education created.</i>			



Strategy 3. Legal- environmental strengthening program	ER 3.1 Capacities of local administrations and public services (Environmental Authority) are strengthened in consensus with local inhabitants for the application of the law on individuals and corporations at the local level (for example, control of deforestation).	<i># of public-sector officials trained in law enforcement for territorial defense.</i>	Collection of technical information. Surveys and censuses on training needs for environmental governance. Facilitate dialogue between environmental authorities and local inhabitants in order to reach agreements and make commitments.
		<i># of public servants who obtain more than 90% in post-intervention territory-defense knowledge tests.</i>	
		<i># informative workshops for local communities on legal tools to defend their territory.</i>	
		<i># of strategic alliances signed between local communities and authorities to defend the territory.</i>	
		<i># protection actions generated.</i>	
	ER 3.2 Structures enabling social participation are established and capacities are strengthened for legal-environmental defense.	<i># of environmental leaders trained in legal issues of defense of territory.</i>	Baseline collection of technical information. Post-intervention evaluations and surveys. Identification of local leaders through technical visits, interviews, and participative observation. Evaluations before and after awareness-raising actions.
		<i># of spaces for participation and exchange generated.</i>	
		<i># of legal instruments reviewed or created by lobbying teams.</i>	
		<i># of legal consultancies implemented for the defense of the territory.</i>	
		<i># instances of prior consultation (improve processes).</i>	
		<i># trials with favorable sentences (if applicable).</i>	
	ER 3.3 Participatory rapid assessment of the status of the Northwestern Chocó-Andes IBAs and KBAs as conservation symbols at local and international levels.	<i># of northwest Chocó-Andes IBAS evaluated and assigned to KBA status</i>	Application of KBA criteria.
<i># areas evaluated within the project's zone of influence that are not IBA, but that meet the KBA criteria.</i>			

Strategy 4. Program for the disposal of solid and liquid waste from households, agricultural and business facilities.	ER 4.1 Sources of contamination (e.g. solid waste) of water bodies and soil are clearly identified.	<i># of pollution sources and their management that are evaluated.</i> <i># of informative materials delivered on the types of contaminants.</i>	Collection of baseline technical information (water and soil analysis). Population surveys, interviews with CELEC managers, and/or literature review.
	ER 4.2 Contingency and mitigation measures are designed and implemented by provincial and municipal authorities to avoid the contamination of water bodies and soil.	<i># of municipal public servants informed on the implementation of waste management ordinances.</i>	Collection of information.
		<i># of ordinances implemented by government agencies and municipalities to mitigate contamination in water bodies and soil.</i>	
	ER 4.3 Local inhabitants and companies change their behavior by respecting the regulations to reduce the threat of contamination.	<i># evaluations carried out in waste collection centers.</i>	Collection of baseline technical information. Post-intervention evaluations. Standardized measurement of waste.
<i># communities, individuals or companies that have implemented measures to mitigate contamination in water bodies and soil.</i>			
ER 4.4 Decreased risk of soil and water contamination as a result of improved waste management in the Northwestern Chocó-Andes.	<i>% reduction of solid and liquid contaminants with respect to the baseline.</i>	Collection of baseline technical information. Post-intervention evaluations. Surveys and interviews with informed groups and individuals.	
Strategy 5. Campaign for responsible ownership and control of feral domestic animals (dogs and cats).	ER 5.1 The population status of feral domestic animals (e.g., cats and dogs) and their impact on wildlife is evaluated.	<i># of stakeholders with expertise in pet ownership identified and who have joined the initiative.</i>	Collection of baseline technical information. Post-intervention evaluations. Standardized counts of feral and domestic fauna carried out in different settlements.
		<i># of pet censuses carried out in priority sites.</i>	
	ER 5.2 Responsible pet ownership program is accepted by local authorities and residents.	<i># of communities that have agreed to implement responsible pet ownership programs.</i>	Collection of baseline technical information. Post-intervention evaluations.
<i># of pet sterilizations performed.</i> <i>% of feral domestic animal population decline compared to baseline (censuses).</i>			

Strategy 6. Build capacity amongst local actors (governments and civil society) to apply the legal framework to address wildlife trafficking.	ER 6.1. Bird species subject to illegal trafficking are protected	<i># of species affected by illegal trafficking</i>	Collection of baseline technical information. Literature review, MAATE databases, environmental police, specialized environmental units (e.g., Tueri from USFQ). Post-intervention evaluations.
		<i># trafficking chain investigations endorsed</i>	
		<i>% decrease in the trafficking of focal species compared to baseline</i>	
	ER 6.2 Local governance to fight bird trafficking is strengthened through a legal-environmental monitoring program focused on indicator species (e.g., endemic and threatened spp.) that is implemented through the cooperation of local actors with municipal and ministerial environmental authorities.	<i># of cooperation programs (monitoring) implemented between local actors and MAATE.</i>	Collection of technical information. Literature review. Focal species monitoring (e.g. during the boreal migration of <i>S. cerulea</i>).
<i># people trained on the legal aspects of species trafficking.</i>			

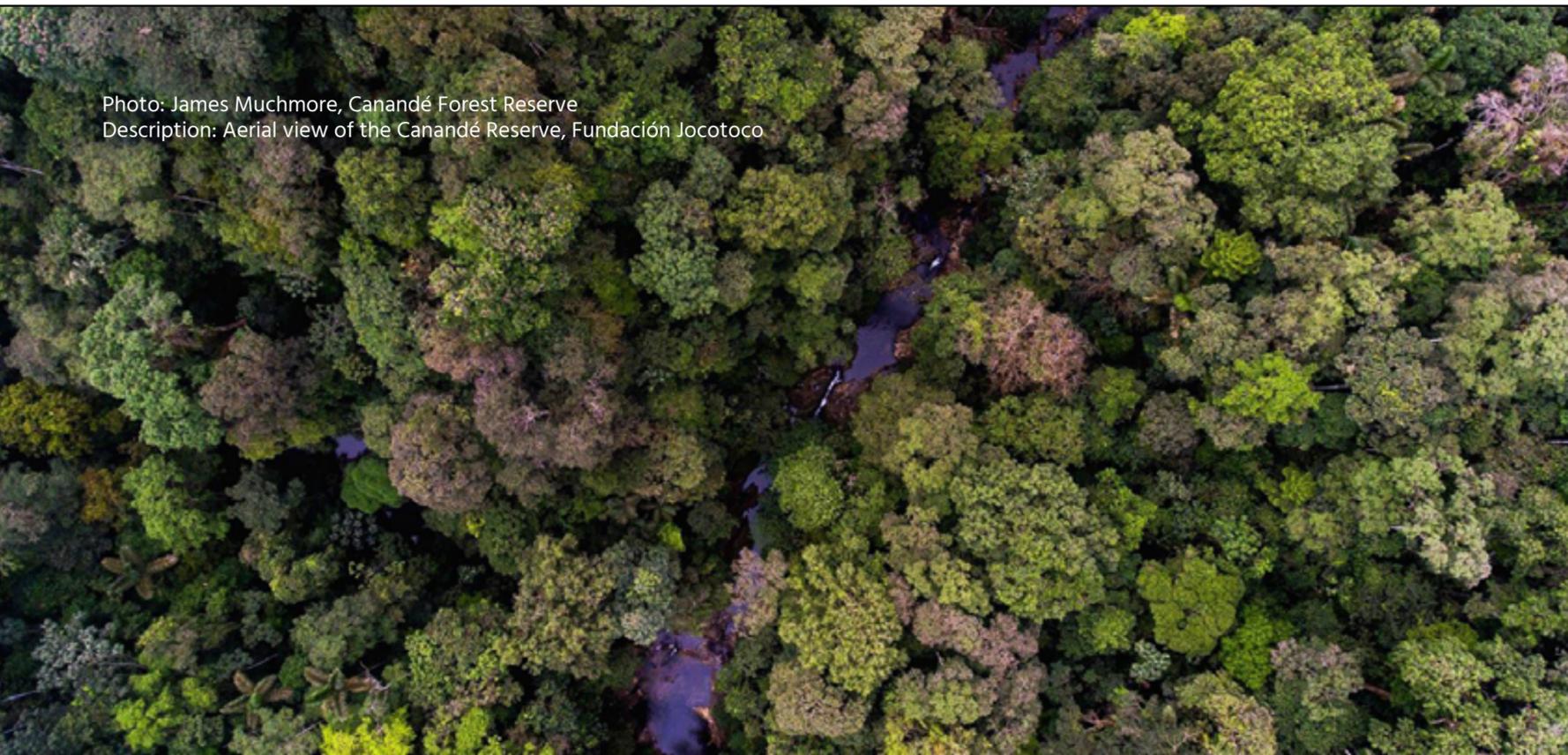


Photo: James Muchmore, Canandé Forest Reserve
Description: Aerial view of the Canandé Reserve, Fundación Jocotoco

Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	ER 7.1 Key areas for passive or active reforestation are identified.	<i># hectares identified for native species restoration.</i>	Collection of baseline technical and geographic information.
		<i># of landowners who allow restoration activities to be undertaken on their properties.</i>	
		<i># of areas under restoration being evaluated</i>	
	ER 7.2 Committed cooperation exists between local inhabitants, conservation organizations, municipal authorities, and environmental entities for the restoration of various key areas.	<i># of agreements signed between local communities and other organizations to carry out restoration activities</i>	Collection of baseline technical information. Interviews with experts, and surveys.
	ER 7.4 Degraded and/or connecting areas are restored.	<i># people trained in restoration.</i>	Collection of baseline technical information. Post-intervention evaluations. Restoration methodology using reviewed protocols.
		<i># plants planted.</i>	
		<i># ha restored.</i>	
	ER 7.5 Monitoring programs for recovered and interconnected areas (corridors) are launched and technically assisted.	<i>% vegetation cover recovered compared to baseline.</i>	Tools for monitoring the areas to be restored. Comparative analysis with previously existing initiatives.
		<i>% survival of planted seedlings.</i>	
ER 7.6 Local authorities are committed to the conservation of the forests and biodiversity of the Ecuadorian Chocó and are willing to contribute to long-term conservation and restoration activities in the region.	<i># of monitoring programs in restored areas implemented and technically assisted.</i>	Spaces for dialogue between civil organizations and local communities.	
	<i># of authorities committed to habitat restoration schemes through agreements.</i>		
	<i># Land Use Plans (PDOT) in locations where this strategy has been initiated</i>		



Strategy 8. Implement innovative financial mechanisms and systems that promote the protection and restoration of target forests and biodiversity.	ER 8.1 Companies present in the region are committed to the conservation of forests and biodiversity and desire to contribute financially to restoration activities and campaigns to prevent illegal wildlife trafficking.	<i># of committed companies contributing financially to conservation activities.</i>	Baseline prior to information gathering. Pre and post-intervention evaluation.
		<i># companies trained in best practices, such as the use of the Integrated Biodiversity Assessment Tool (IBAT).</i>	
		<i># of conservation projects for focal species supported by priority species sponsors ("species champions").</i>	
		<i># of companies evaluated prior to agreements.</i>	
	ER 8.2 Public/private funding sources for restoration are adequately managed.	<i>Monetary sum of public/private resources managed</i>	Information gathering.
	Strategy 9. Creation and management of private protected areas and other conservation figures in the region (Subsystems).	ER 9.1 Municipal and provincial protected areas (ACUS, biocorridors, etc) that allow sustainable livelihoods have been designed.	<i># protected areas to be declared as a part of bio-corridors, subsystems such as ACUS, Municipal Areas for Conservation and Sustainable Use (ACMUS), etc.</i>
	ER 9.2 Public, private and/or community Protected Areas and other conservation figures are created, supported, and financed.	<i># of private or public protected areas created.</i>	Mapping of new areas and methodology for the creation of Management Plans.
		<i># of new hectares protected.</i>	
		<i># management plans created or updated.</i>	
	ER 9.3 Indigenous and other local community territories in the region are protected and conserved.	<i># ha newly protected within indigenous and Afro-descendant territories.</i>	Consultations, surveys, or indigenous territorial requests. Mapping of new protected territories.
	ER 9.4 The current vegetation cover of Ecuador's Chocó-Andes forests is conserved	<i>% reduction in annual loss of vegetation cover compared to 2010-2020 values.</i> <i># of recognized KBA sites and total area in hectares.</i>	Vegetation cover analysis. Mapping of recognized KBA sites.

RISK ANALYSIS

The risks identified for the implementation of the Strategy are described below (Table 3). These risks are of a political, financial, and social nature. A high level of risk is assigned to public policies opposing conservation (e.g. extractive activities), as well as to the lack of resources for conservation incentives in local communities and for conservation actions in general, and to the lack of clarity regarding land tenure when defining conservation areas.



Photo: James Muchmore
 Description: Blue-necked Tanager

Table 3. Risks associated with the implementation of the present Strategy

Category	Risk	Risk level	Mitigation strategy
POLITICAL	Public policies that favor extractive activities (e.g., legal and illegal metal mining, logging, and others).	High	Establish reconciliation and support mechanisms through dialogues with local governments to influence compliance with the law (e.g., prior consultation regarding extractive activities), and to support and advise on the regulation and environmental control of these activities, as well as on the creation of protected areas (subsystems).
	Lack of political will from local authorities for the implementation of plan strategies.	Moderate	Guarantee adequate awareness of the plan with national, provincial, county, municipal, and parochial authorities. Additionally, directly empower these institutions by involving them in the execution of the concrete plan strategies (including celebrating their role in successful conservation results).
	Changes in both national and local governments leading to shifting interests in conservation issues.	Moderate	Establish signed agreements and monitor their compliance, including through the empowerment of local leaders and communities.
FINANCIAL	Lack of resources to provide incentives to local communities to generate more sustainable livelihoods	High	Involve all actors with fundraising capacity, establishing strategic alliances to finance incentives promoting sustainable livelihoods in local communities.
	Insufficient funds to carry out or continue conservation activities (e.g. restoration).	High	Involve all actors with the capacity to fund raise or redistribute income and profits with the aim of establishing strategic alliances directed at generating the greatest amount of resources.
	Lack of interest from the private sector to incorporate environmental responsibility issues into their operating plans.	Moderate	Efficiently raise the awareness of companies on the advantages of including environmental and social responsibility issues in their operating plans.
SOCIAL & LEGAL	Land tenure complications (e.g. title deeds) when identifying potential areas for conservation and/or restoration.	High	Establish strategies for evaluating the state of land tenure (private or communal) in order to generate appropriate legal actions in the project's area of influence.
	The possibility that assets are coming from non-conservation-aligned sources (e.g. green-washing, or funds obtained from extractive companies).	High	Actively vet all funding sources before accepting sponsorship. Critically evaluate and consider the outlook of communities opposing legal and illegal mining.

BUDGET

The estimated costs for the implementation of the strategies detailed in this publication are detailed in Table 4. They have been estimated for two consecutive periods: years 1 to 5, and years 5 to 10. These costs are approximate and must be reviewed in the same way as impact indicators, each fiscal year. They should be adapted as needed.

A Financial Sustainability Plan describes possible funding sources in the short and medium term (Annex 6. Financial Sustainability Plan).

Table 4. Budget for the implementation of the plan during years 1-5 and 5-10

Budget category	Years 1-5	Years 5-10	Total
Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use..	200,000.00	800,000.00	1,000,000.00
Strategy 2. Comprehensive education and communication initiatives with local communities in thematic axes.	250,000.00	250,000.00	500,000.00
Strategy 3. Legal-Environmental strengthening program.	50,000.00	50,000.00	100,000.00
Strategy 4. Program for the disposal of solid and liquid waste from households, agricultural and business facilities.	100,000.00	100,000.00	200,000.00
Strategy 5. Campaign for responsible ownership and control of feral domestic animals (dogs and cats).	250,000.00	250,000.00	500,000.00
Strategy 6. Build capacity amongst local actors (governments and civil society) to apply the legal framework to address wildlife trafficking.	50,000.00	50,000.00	100,000.00
Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	2,500,000.00	2,500,000.00	5,000,000.00
Strategy 8. Implement innovative financial mechanisms and systems that promote the protection and restoration of target forests and biodiversity.	500,000.00	1,000,000.00	1,500,000.00
Strategy 9. Creation and management of private protected areas and other conservation figures in the region (Subsystems).	3,000,000.00	3,000,000.00	6,000,000.00
TOTAL	Years 1-5 6,900,000.00	Years 5-10 8,000,000.00	Final Total 14,900,000.00



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ANNEXES

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Photo: Aves y Conservación
Description: Chocó-Andes of Northwestern Ecuador



ANNEX 1. THEMATIC AXES AND WORKSHOP PARTICIPATION

The present Strategy was informed by the outcomes of ten workshops delivered in two phases: the first three workshops focused on defining priority sites and species, and the remaining seven served to establish the situational model, results chain, implementation plan, and risk assessment using the Open Standards for the Practice of Conservation (CMP, 2020) methodology.

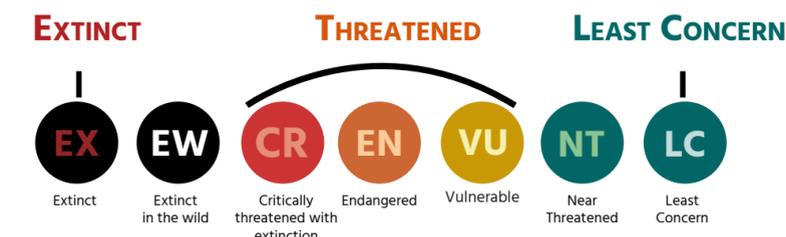
The names of the workshop participants and members of the technical committee who were consulted are already mentioned in the acknowledgments section of this publication. The following table shows the list of workshops along with objectives, dates and number of participants:

Phase	Workshop	Objective	Date	No. of participants
Selection of priority species and sites	1. Selection of priority species	Review short-listed species and qualify them with established prioritization criteria	17th November 2022	14 technical committee members
	2. Selection of priority sites (Part 1)	Define the seven priority species for this plan and designate the criteria to select priority sites	8th December 2022	12 technical committee members
	3. Selection of priority sites (Part 2)	Validate maps with the criteria designated in the previous workshop	17th January 2022	10 technical committee members
Development of the plan with the Open Standards for the Practice of Conservation methodology	1. Project launch and identification of threats in the Ecuadorian Chocó	Present the process to local actors and stakeholders, and identify the main threats to the Ecuadorian Chocó	3rd March 2022	26 individuals
	2. Construction of the situational model	Validate direct threats and identify contributing factors to build a situational model for the Chocó	9th March 2022	22 individuals
	3. Construction of the results chain (Part 1)	Validate the situational model and build the results chain. Define objectives and expected results	17th March 2022	12 individuals
	4. Construction of the results chain (Part 2)	Validate objectives, expected results, and build main strategies	30th March 2022	15 individuals
	5. Construction of the results chain (Part 3)	Validate the complete results chain	13th April 2022	18 individuals
	6. Implementation Plan	Develop activities for each strategy	11th May 2022	18 individuals
	7. Implementation plan and risk assessment of the Chocó Conservation Investment Strategy	Develop activities for missing strategies and assess the overall risks for the strategy	18th May 2022	22 individuals

Reference: Conservation Measures Partnership (CMP) (2020). Open standards for the practice of conservation. Accessed on 5th September 2022: <https://conservationstandards.org/wp-content/uploads/sites/3/2020/10/CMP-Open-Standardsfor-the-Practice-of-Conservation-v4.0.pdf>

ANNEX 2. ENDEMIC CHOCÓ SPECIES OF NORTHWESTERN ECUADOR REGISTERED IN THE CONSERVATION STRATEGY TARGET AREA

IUCN RED LIST:



Scientific name	English name	National Threat Category	Global Threat Category
<i>Crypturellus berlepschi</i>	Berlepsch's Tinamou	VU	LC
<i>Micrastur plumbeus</i>	Plumbeous Forest-Falcon	EN	VU
<i>Penelope ortonii</i>	Baudo Guan	EN	EN
<i>Odontophorus melanonotus</i>	Dark-backed Wood-Quail	VU	VU
<i>Patagioenas goodsoni</i>	Dusky Pigeon	NT	LC
<i>Pyrilia pulchra</i>	Rose-faced Parrot	VU	VU
<i>Neomorphus radiolosus</i>	Banded Ground-Cuckoo	EN	EN
<i>Megascops ingens colombianus</i>	Rufescent Screech-Owl	NT	NT
<i>Glaucidium nubicola</i>	Cloud-forest Pygmy-Owl	EN	VU
<i>Nyctiphrynus rosenbergi</i>	Chocó Poorwill	NT	NT
<i>Amazilia rosenbergi</i>	Purple-chested Hummingbird	NT	LC
<i>Heliodoxa imperatrix</i>	Empress Brilliant	NT	LC
<i>Coeligena wilsoni</i>	Brown Inca	LC	LC
<i>Boissonneaua jardini</i>	Velvet-purple Coronet	NT	LC
<i>Heliangelus strophianus</i>	Gorgeted Sunangel	LC	LC
<i>Eriocnemis godini</i>	Turquoise-throated Puffleg	CR-PE ¹	CR
<i>Haplophaedia lugens</i>	Hoary Puffleg	VU	VU
<i>Urosticte benjamini</i>	Purple-bibbed Whitetip	NT	LC
<i>Aglaiocercus coelestis</i>	Violet-tailed Sylph	LC	LC
<i>Trogon comptus</i>	Blue-tailed Trogon	NT	LC
<i>Capito squamatus</i>	Orange-fronted Barbet	NT	LC
<i>Capito quinticolor</i>	Five-colored Barbet	EN	NT
<i>Semnornis ramphastinus</i>	Toucan Barbet	NT	NT
<i>Andigena laminirostris</i>	Plate-billed Mountain-Toucan	VU	NT

¹ CR-PE Critical - Possibly Extinct.



<i>Ramphastos brevis</i>	Chocó Toucan	NT	LC
<i>Veniliornis chocoensis</i>	Chocó Woodpecker	VU	NT
<i>Piculus litae</i>	Lita Woodpecker	NT	LC
<i>Margarornis stellatus</i>	Fulvous-dotted Treerunner	VU	NT
<i>Thripadectes ignobilis</i>	Uniform Treehunter	NT	LC
<i>Dysithamnus occidentalis</i>	Bicolored Antvireo	EN	VU
<i>Myrmeciza berlepschi</i>	Stub-tailed Antbird	VU	LC
<i>Pittasoma rufopileatum</i>	Rufous-crowned Antpitta	EN	NT
<i>Grallaria flavotincta</i>	Yellow-breasted Antpitta	VU	LC
<i>Scytalopus vicinior</i>	Nariño Tapaculo	LC	LC
<i>Pipreola jucunda</i>	Orange-breasted Fruiteater	NT	LC
<i>Cephalopterus penduliger</i>	Long-wattled Umbrellabird	EN	VU
<i>Machaeropterus deliciosus</i>	Club-winged Manakin	LC	LC
<i>Entomodestes coracinus</i>	Black Solitaire	NT	LC
<i>Oreothraupis arremonops</i>	Tanager Finch	EN	LC
<i>Chlorospingus semifuscus</i>	Dusky Chlorospingus	LC	LC
<i>Chlorospingus flavovirens</i> (<i>Bangsia flavovirens</i>)	Yellow-green Tanager	VU	VU
<i>Chrysothlypis salmoni</i>	Scarlet-and-white Tanager	NT	LC
<i>Bangsia rothschildi</i>	Golden-chested Tanager	VU	LC
<i>Bangsia edwardsi</i>	Moss-backed Tanager	NT	LC
<i>Anisognathus notabilis</i>	Black-chinned Mountain Tanager	LC	LC
<i>Iridosornis porphyrocephalus</i>	Purplish-mantled Tanager	VU	NT
<i>Chlorophonia flavirostris</i>	Yellow-collared Chlorophonia	NT	LC
<i>Chlorochrysa phoenicotis</i>	Glistening-green Tanager	LC	LC
<i>Tangara johannae</i>	Blue-whiskered Tanager	NT	NT
<i>Dacnis berlepschi</i>	Scarlet-breasted Dacnis	EN	VU
<i>Diglossa indigotica</i>	Indigo Flowerpiercer	NT	LC
<i>Cyanolyca pulchra</i>	Beautiful Jay	VU	NT ²

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ANNEX 3. METHODOLOGY FOR FOCAL SPECIES PRIORITIZATION

The names of the experts consulted and selected as part of the technical committee for the development of this publication have been previously mentioned in the acknowledgments section.

It should be noted that the selection of priority endemic and threatened species does not imply that other species are not important or do not need conservation actions. The prioritization exercise is grounded on the concept of umbrella or emblem species (Bowen-Jones & Entwistle, 2002), of which the protection guarantees the conservation of other threatened species.

The Weighting Criteria defined in Table 3A below are adapted to the reality of the Chocó-Andes region and were applied to 39 preselected species: 28 residents and 11 boreal migrants (Table 3B. Weighted Species). The criteria cover biogeography, endemic status, and threat category (local and global) (Freile *et al.* 2019 & IUCN, 2022); prior knowledge; feasibility of changes if strategies are applied; sustainability; benefits for other species, and finally local actors' level of interest in the species.

Table 3A. Species prioritization criteria. (p.50)

Table 3B. Weighted Species (*species selected for a second round of criteria weighting, **raptor species excluded from prioritization because they are not endemic to the Chocó-Andes or because of insufficient published information. (p. 52)

Following the first evaluation, the technical committee re-evaluated 13 species: 10 residents and 3 boreal migrants (species marked with an asterisk * in Table 3B). The reassessment entailed re-applying criterion 3 regarding species knowledge, this time specifically applying the level of information available and prioritizing those species that are endemic to the Chocó-Andes. Table 3C shows the results of this weighting, with the final priority species shown in red.

Table 3C. Second weighted evaluation of 13 species, applying criterion 3 and giving priority to endemic birds of the Chocó-Andes and one boreal migratory species. Species selected as a priority are marked in red. An asterisk * denotes Chocó endemics. (p. 53)

Table 3A. Species prioritization criteria.

Criteria	Sub-criteria	Value			
		Value 4	Value 3	Value 2	Value 1
Criterion 1: Geography	-----	Extremely restricted distribution	Narrow distribution: few places within the territory	Moderate distribution: present in several places within the territory.	Wide distribution: very common throughout the territory
Criterion 2: National and Global Threat Level	2.1 Global Red List	Critically Threatened	Threatened	Vulnerable	Near-threatened
	2.2 Local or national Red List	Critically Threatened	Threatened	Vulnerable	Near-threatened
Criterion 3: The necessary species conservation strategies can be successfully implemented in a period of 10 years, at the level of investment foreseen in this exercise.	3.1 General understanding of the sp.	There is sufficient understanding of the general attributes of the species (e.g. abundance, distribution, food/shelter needs, life stages, etc.) to inform management actions.	There is only limited understanding of the general attributes of the species.	There is little understanding of the general attributes of the species.	There is no understanding of the general attributes of the species.
	3.2 Understanding of threats	There is a sufficient understanding of the threats facing the species to inform management actions.	There is only a limited understanding of the threats facing the species to inform management actions.	There is little understanding of the threats facing the species to inform management actions.	There is no understanding of the threats facing the species to inform management actions.
	3.3 Understanding of management actions needed	There is sufficient understanding of what management actions are necessary to move the needle for the conservation of the species.	There is only limited understanding of what management actions are necessary to move the needle for the conservation of the species.	There is little understanding of what management actions are necessary to move the needle for the conservation of the species.	There is no understanding of what management actions are necessary to move the needle for the conservation of the species.
	3.4 Strategies' capacity to reduce threats	Threats to the species can be minimized or addressed by implementing management actions as anticipated.	Threats to the species can be partially minimized or addressed by implementing management actions as anticipated.	Threats to the species can be minimized or addressed in only limited fashion by implementing management actions as anticipated.	Threats to the species cannot be minimized or addressed by implementing management actions as anticipated.

Criterion 4: A measurable change in the conservation status of the species is likely to occur within 10 years.	4.1 Probability that the population status of the species will respond favorably to conservation actions implemented within ten years.	Science shows that the species will likely respond to the specific actions improving the conditions and function of its habitat within a 10-year period.	Science shows that the species may respond to the specific actions improving the conditions and function of its habitat within a 10-year period.	Science shows that the species will be unlikely to respond to the specific actions improving the conditions and function of its habitat within a 10-year period.	Science shows that the species will not respond to the specific actions improving the conditions and function of its habitat within a 10-year period.
	4.2 Capacity to monitor and measure changes in the species conservation status.	Sufficient monitoring activities exist or can be designed to measure changes in the species conservation status within the time frame of the investment strategy.	Current or potential monitoring activities to measure changes in the species conservation status within the time frame of the investment strategy are insufficient to collect useful data.	Monitoring activities to measure changes in the species conservation status within the time frame of the investment strategy are very few and it is unlikely any more can be designed to collect sufficient data.	There are no monitoring activities to measure changes in the species conservation status within the time frame of the investment strategy and none can be designed to collect sufficient data.
Criterion 5: Probability of a sustained improvement in the conservation status of the species.	-----	An improvement in the conservation status of the species is likely to be sustained in the near future considering (a) future threats, and (b) anticipated management actions	There is some probability that an improvement in the conservation status of the species may be sustained in the near future considering (a) future threats, and (b) anticipated management actions	There is little probability that an improvement in the conservation status of the species may be sustained in the near future considering (a) future threats, and (b) anticipated management actions	There is no probability that an improvement in the conservation status of the species may be sustained in the near future considering (a) future threats, and (b) anticipated management actions
Criterion 6: Conservation benefits for associated species	-----	Other species of interest are likely to benefit from actions targeting this species and there is a geographic overlap with these other species.	Other species of interest may benefit from actions targeting this species and there is a geographic overlap with these other species.	Other species of interest are unlikely to benefit from actions targeting this species, though there is a geographic overlap with these other species.	Other species of interest will probably not benefit from actions targeting this species despite the geographic overlap with these other species.
Criterion 7: Interest of different actors to work with the species.	-----	Actors have a high interest in working on the conservation of this species.	Actors have a moderate interest in working on the conservation of this species.	Actors have a low interest in working on the conservation of this species.	Actors have no interest in working on the conservation of this species.

Type	Species	Scientific name	Total weighting
Residents	Black-and-chestnut Eagle *	<i>Spizaetus isidori</i>	44
	Great Green Macaw *	<i>Ara ambiguus</i>	40
	Long-wattled Umbrellabird *	<i>Cephalopterus penduliger</i>	39
	Plate-billed Mountain-toucan *	<i>Andigena laminirostris</i>	39
	Gray-backed Hawk **	<i>Pseudastur occidentalis</i>	38
	Black-breasted Puffleg *	<i>Eriocnemis nigrivestis</i>	35
	Harpy Eagle **	<i>Harpia harpyja</i>	35
	Banded Ground-cuckoo *	<i>Neomorphus radiolosus</i>	34
	Cloudforest Pygmy-owl *	<i>Galudicium nubicola</i>	34
	Hoary Puffleg *	<i>Haplohaedya lugens</i>	32
	Purple Quail-dove	<i>Geotrygon purpurata</i>	32
	Purplish-mantled Tanager *	<i>Iridisornis porphyrocephalus</i>	32
	Beautiful Jay	<i>Cyanolyca pulchra</i>	30
	Tanager Finch	<i>Oreothraupis arremonops</i>	30
	Baudo Guan	<i>Penelope ortoni</i>	29
	Great Curassow	<i>Crax rubra</i>	29
	Choco Vireo	<i>Vireo masteri</i>	28
	Dark-backed Wood-quail	<i>Odontophorus melanonotus</i>	28
	Esmeraldas Woodstar	<i>Chaetocercus berlepschi</i>	28
	Five-colored Barbet	<i>Capito quinticolor</i>	28
	Moustached Antpitta	<i>Grallaria alleni</i>	28
	Scarlet-breasted Dacnis *	<i>Dacnis berlepschi</i>	28
	Plumbeous Forest-falcon	<i>Micrastur plumbeus</i>	26
	Acadian Flycatcher	<i>Empidonax virescens</i>	26
	Giant Antpitta	<i>Grallaria gigantea</i>	25
	Rufous-crowned Pittasoma	<i>Pittasoma rufopileatum</i>	25
	Yellow-green Tanager	<i>Bangsia flavovirens</i>	25
	Plumbeous Hawk	<i>Cryptoleucopteryx plumbea</i>	23
Migrants	Cerulean Warbler *	<i>Setophaga cerulea</i>	30
	Canada Warbler *	<i>Cardellina canadensis</i>	28
	Eastern Wood-Pewee	<i>Contopus virens</i>	27
	Black-and-white Warbler	<i>Mniotilta varia</i>	27
	Mourning Warbler	<i>Geothlypis philadelphia</i>	27
	Tennessee Warbler	<i>Leiothlypis peregrina</i>	27
	Blackburnian Warbler	<i>Setophaga fusca</i>	24
	Olive-sided Flycatcher *	<i>Contopus cooperi</i>	23
	Bay-breasted Warbler	<i>Setophaga castanea</i>	23
	Eastern Kingbird	<i>Tyrannus tyrannus</i>	14
	Western Wood-pewee	<i>Contopus sordidulus</i>	13

Table 3B. Weighted evaluation of species (* species selected for a second phase of criteria weighting, ** raptors that were excluded from prioritization because they are not endemic to the Chocó-Andes or because there is not enough published information.



Photo: Patricio Mena, Black-breasted Puffleg, Yanacocha Reserve.

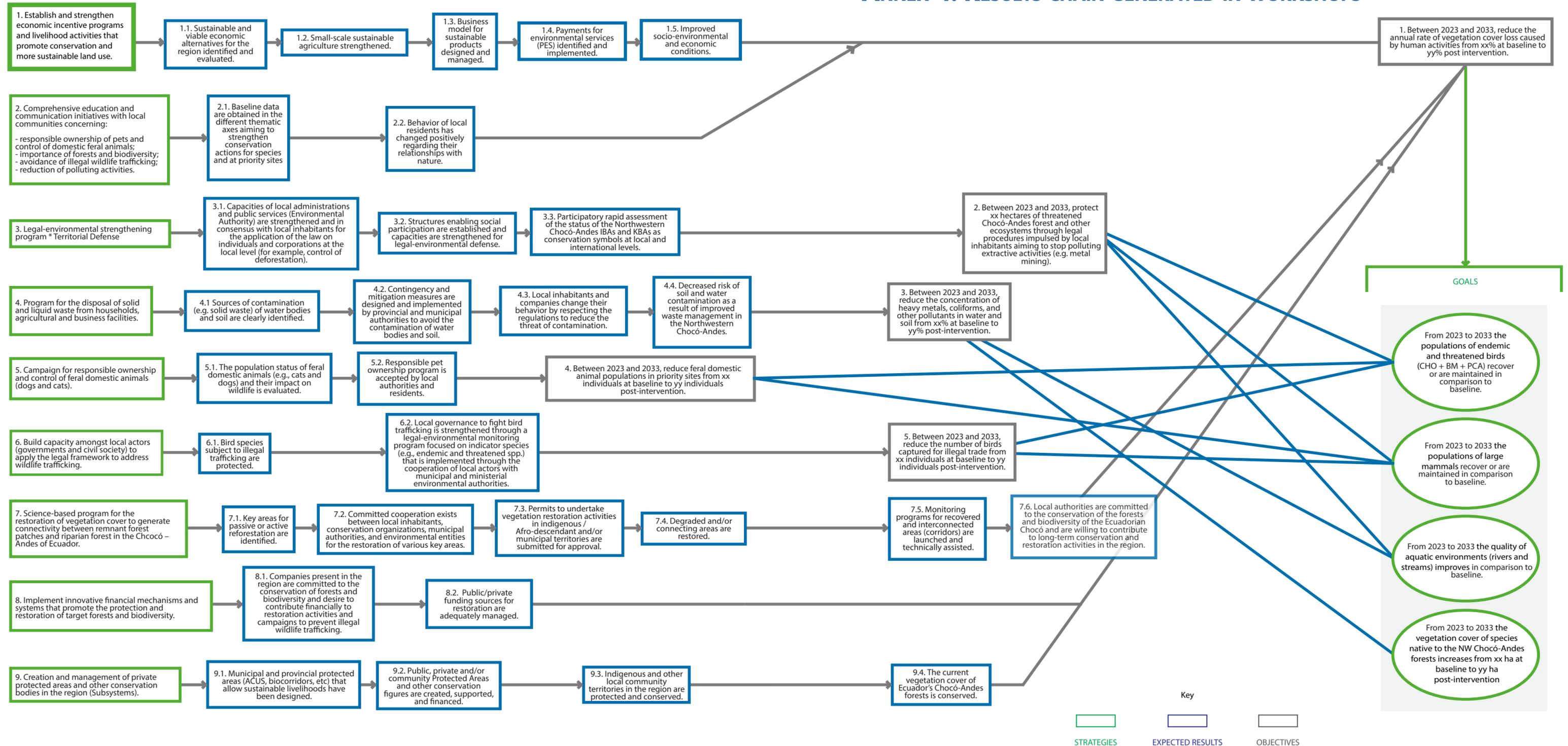
Type	Species	Scientific name	Total weighting
Residents	Long-wattled Umbrellabird *	<i>Cephalopterus penduliger</i>	11
	Plate-billed Mountain-Toucan *	<i>Andigena laminirostris</i>	10
	Banded Ground-cuckoo *	<i>Neomorphus radiolosus</i>	10
	Black-breasted Puffleg	<i>Eriocnemis nigrivestis</i>	9
	Cloudforest Pygmy-owl *	<i>Galudicium nubicola</i>	9
	Scarlet-breasted Dacnis *	<i>Dacnis berlepschi</i>	9
	Black-and-chestnut Eagle	<i>Spizaetus isidori</i>	8
	Great Green Macaw	<i>Ara ambiguus</i>	8
	Hoary Puffleg *	<i>Haplohaedya lugens</i>	7
	Purplish-mantled Tanager *	<i>Iridisornis porphyrocephalus</i>	7
Migrants	Cerulean Warbler	<i>Setophaga cerulea</i>	8
	Olive-sided Flycatcher	<i>Contopus cooperi</i>	8
	Canada Warbler	<i>Cardellina canadensis</i>	7

Table 3C. Second weighting of 13 species¹

Greater weighting Lesser weighting

Reference:
Bowen-Jones, E., & Entwistle, A. (2002). Identifying appropriate flagship species: the importance of culture and local contexts. *Oryx: The Journal of the Fauna Preservation Society*, 36(2), 189–195. <https://doi.org/10.1017/S0030605302000261>

ANNEX 4. RESULTS CHAIN GENERATED IN WORKSHOPS



ANNEX 5. IMPLEMENTATION PLAN WITH SUGGESTED ACTIVITIES

Strategy	Expected Result	Means of verification	Metrics
Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use.	ER 1.1 Sustainable and viable economic alternatives for the region identified and evaluated.	Indicators: # of sustainable economic alternatives are selected to be implemented.	
Activity 1.1.1: Evaluate the impact and feasibility of the Socio Bosque Project in order to support and maintain it.	Report on the reach of the Socio Bosque project in Northwestern Ecuador. E.g. efficiency and # ha impacted.	Impact assessment in terms of hectares protected or conserved by the Socio Bosque project in the priority sites of the Chocó-Andes.	
Activity 1.1.2: Participative identification of sustainable economic alternatives to the Socio Bosque scheme (e.g. carbon capture, functional projects for local communities such as the "Chala" network of community stores that sell local community products such as chocolate, coffee, brown sugar, etc.).	Inventory of existing and/or ongoing sustainable production activities.	Technical evaluation system for financial viability and sustainability (develop survey tool).	
Activity 1.1.3: Evaluate ecosystem services (e.g. clean water, food) and sustainable production alternatives (in the context of obtaining certification for responsible practices, e.g. Tourcert for Tourism).	Research report documenting examples and positive and negative impacts of the implementation of certification or economic alternatives within the Chocó-Andes region.	Technical evaluation system analyzing financial viability and sustainability (develop the survey and analysis tool).	
Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use.	ER 1.2 Small-scale sustainable agriculture strengthened.	Indicators: # of individuals and/or small farmer associations trained to implement good practices; # of farmers who have implemented good practices; # local products with green seals and/or certifications.	
Activity 1.2.1: Identify and evaluate sustainable and resilient agricultural, agroforestry, and livestock products that allow local people to transition from activities that impact soils and forests.	Detailed report (catalogue) of sustainable products and activities that are or can be implemented in the region. Catalog published and shared.	Technical evaluation system analyzing financial viability and sustainability (develop the survey and analysis tool).	
Activity 1.2.2: Provide training and technical assistance for implementing sustainable production practices for producers, communities, and rural populations (technical assistance and organizational strengthening programs).	Number of workshops and technical visits. % of people trained. Workshop attendance lists. Trip reports.	Preparation of schedules, workshop content, and topics to be discussed in technical visits.	
Activity 1.2.3: Identify and evaluate the feasibility of applying environmentally and socially responsible brands and certification schemes for activities such as agricultural and livestock production. *This activity could also be considered a sub-activity of the marketing plan.	Inventory of productive activities selected for certification. Analysis of short-listed certification seals. List of activities with a certification seal or in the process of obtaining one.	Literature review, expert interviews, and surveys (deployment and data analysis).	

Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use.	ER 1.3 Business model for sustainable products designed and managed.	Indicators: # micro marketing plans for sustainable products; # of sustainable products offered in the market; # of strategic alliances with the private sector for the commercialization of products.	
Activity 1.3.1: Generate national and international marketing micro plans (supply + demand) for sustainable products generated in the Northwestern Ecuadorian Chocó-Andes.		Number of micro marketing plans designed, validated in a participatory manner and presented (document) for each sustainable product.	Gathering of information through literature review, interviews with experts, surveys, among others.
Sub-Activity 1.3.1.1 Evaluate existing municipal and national policies that promote sustainable markets (Marketing Plan sub-activity).			
Sub-Activity 1.3.1.2 Identify access to Financing (Marketing Plan sub-activity).			
Activity 1.3.2: Search local and foreign markets for sustainable products.		Portfolio of national and foreign markets generated.	Gathering of information for the portfolio.
Activity 1.3.3 Generate strategic alliances with the private sector.		Alliances and/or agreements signed with key actors in the private sector that support the commercialization of certified products.	Meetings and lobbying to promote the certified activities with representatives of the private sector with the aim of linking them to the market chain.
Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use.	ER 1.4 Payments for environmental services (PES) identified and implemented.	Indicators: # PES sources identified and implemented; # small producers benefited by some form of PES.	
Activity 1.4.1 Identify alternatives for the creation of projects able to be implemented within REDD+ (state and/or non-governmental).		Report on alternative systems and/or existing or future tools allowing the creation of activities (projects) within REDD+.	Gathering of information through literature review, interviews with experts, surveys, among others.
Activity 1.4.2 Identify opportunities for small producers owning lands containing forests and/or native vegetation in recovery to join Socio Bosque and/or similar programs.		List of opportunities for forested land submitted to Socio Bosque and/or other sources of support and financing. Forests with financing projects underway. Financing conservation agreements.	Gathering of information through literature review, interviews with experts, surveys, among others.
Activity 1.4.3 Identify conservation incentive programs to support small producers.		List or inventory of incentive programs (feasibility report). # Small producers supported financially.	Gathering of information through literature review, interviews with experts, surveys, among others.

Activity 1.4.4 Promote the reduction and/or exoneration of land taxes in properties that conserve, restore, or manage forests in a sustainable manner.		Portfolio of community and privately-owned forests and areas under regeneration considered for fiscal exoneration to the corresponding authority. Municipal ordinances for tax exemption and fiscal non-collection agreements are created, signed, and implemented.	Collection of basic information and lobbying for the establishment of ordinances.
Strategy 1. Establish and strengthen economic incentive programs and livelihood activities that promote conservation and more sustainable land use.	ER 1.5 Improved socio-environmental and economic conditions.	Indicators: % increase of family economic income in communities involved.	
Activity 1.5.1 Assess the status and vulnerability of the sustainable livelihoods of local communities (*can be inferred through a census).		Inventory, analysis, and evaluation of threats to livelihoods (document). List of extractive and polluting activities and their current state of impact (soil and water tests, deforestation rates, and socio-environmental conflicts). Socio-environmental impact study.	Gathering of technical information, literature review. Methodologies for environmental impact studies.
Activity 1.5.2 Develop management plans promoting economic alternatives (e.g., bio commerce) in properties located in critical conservation areas to help preserve native forest through sustainable forest management.		Management Plans published and submitted.	Methodology for creating Management Plans (based on existing and ongoing plans).
Activity 1.5.3 Facilitate access of local products from the Northwestern Chocó-Andes to national and international markets.		Attendance at fairs and events, as well as promotion and design of marketing plans for Chocó-Andes products.	Analysis of market positioning and sales.
Activity 1.5.4 Review and drive policy improvements related to livelihoods/livelihoods and trade in sustainable products.		Review reports. Agreements with local producers. Changes and improvements accepted and officially published.	-----
Strategy 2. Comprehensive education and communication initiatives with local communities.	ER 2.1 Baseline data are obtained in the different thematic axes aiming to strengthen conservation actions for species and at priority sites.	Indicators: # of conservation actions identified for the priority species and sites.	

Activity 2.1.1. Identify sources of scientific information useful for decision-making for conservation, as well as identification of information gaps.		Creation of a database available to the public, authorities, and the private sector.	Gathering of technical information and literature review.
Activity 2.1.2. Promote the use of tools (e.g., Integrated Biodiversity Assessment Tool - IBAT) for the private sector to identify vulnerable areas where their interventions would put the health of the biodiversity and ecosystems of the Ecuadorian Chocó-Andes at risk.		Toolkit presented to the territorial authorities and administrators. # of toolkit training workshops.	Awareness and promotion of tools and best practices.
Strategy 2. Comprehensive education and communication initiatives with local communities.	ER 2.2 Behavior of residents has changed positively regarding their relationships with nature.	Indicators: # assessments made regarding community members' relationship with nature; # of people/local populations informed of the value of forests and biodiversity (ecosystem services); # of campaigns carried out in the four different thematic axes (responsible pet ownership, importance of forests and biodiversity, illegal traffic, and pollution reduction); % of the target population showing behavior change in the different thematic axes (responsible pet ownership, importance of forests and biodiversity, illegal traffic, and pollution reduction); # local councils for environmental education created.	
Activity 2.2.1 Evaluate the knowledge, attitudes and practices of local populations regarding the selected conservation objects.		Knowledge assessment reports.	Gathering of technical information and literature review. Interviews with experts, and surveys with local communities to evaluate perceptions of the conservation objects in this plan.
Activity 2.2.2. Establish and implement education programs, environmental communication, and dissemination of information on the importance of forests, birds, and biodiversity.		Program schedule and content. Design and deployment of educational audiovisual materials. # of visits to websites or social networks. Records of delivery and receipt of materials.	-----
Activity 2.2.3. Carry out sanitation training campaigns to stop the disposal of solid waste that is thrown into rivers, bodies of water and soil in rural areas.		Training workshops. Information manuals.	-----
Activity 2.2.4. Carry out conservation and environmental behavior change campaigns targeting social and business actors.		Campaign implementation with stakeholders, inhabitants, businesses, and governments. Campaign audiovisual materials (files and documents).	-----



Activity 2.2.5. Design and implement an environmental awareness campaign focused on reducing the capture of wild birds for trade and illegal trafficking by local people.	Awareness workshops. Generation of agreements and commitments. Signed commitment documents. Approved trainings.	-----
Activity 2.2.6. Promote the creation of Advisory Councils for Environmental Education (e.g. Imbabura Advisory Council for Environmental Education).	Advisory Councils managed and supported in the area of influence of this plan.	-----
Activity 2.2.7. Design and implement the campaign for responsible pet ownership (domestic animals: cats and dogs, especially) in the local populations of the Northwest.	Awareness workshops on responsible pet ownership.	-----
Strategy 3. Legal-environmental strengthening program.	ER 3.1 Capacities of local administrations and public services (Environmental Authority) are strengthened in consensus with local inhabitants for the application of the law on individuals and corporations at the local level (for example, control of deforestation).	Indicators: # public-sector officials trained in law enforcement for territorial defense; # of public servants who obtain more than 90% in post-intervention territory-defense knowledge tests; # informative workshops for local communities on legal tools to defend their territory; # of strategic alliances signed between local communities and authorities to defend the territory; # actions for protection generated.
Activity 3.1.1. Identify and assess training needs for local institutions, authorities, civil society and other key stakeholders in the environmental governance process.	Evaluation report. Evaluation reports by province within the area of influence of the project. Post-training evaluation reports.	Gathering of technical information. Surveys and needs assessment for training on environmental governance.
Activity 3.1.2. Design and implement a training plan for local environmental authorities and public servants in the Northwestern Chocó-Andes.	Training manual created, distributed, and in use. Series of training interventions. Post-training evaluations.	-----
Activity 3.1.3. Raise awareness of local inhabitants on the importance and the different existing legal strategies to defend their territory.	Implementation of awareness campaigns. Lists of participants in awareness events.	Surveys measuring the impact of awareness campaigns.
Activity 3.1.4. Coordinate cooperation agreements between local inhabitants and environmental authorities for the integral conservation of the Northwestern Chocó-Andes.	Cooperation agreements signed between local authorities and inhabitants.	Facilitate dialogue between both actors in order to reach agreements and commitments.
Activity 3.1.5. Promote the protection of local actors who defend the territory, including information campaigns at the international level to generate support and media presence.	Reports of protective actions. Report on the impact of communication campaigns adapted to the pertinent situation and/or conflict.	Gathering of technical information. Awareness campaigns.

Strategy 3. Legal-environmental strengthening program.	ER 3.2 Structures enabling social participation are established and capacities are strengthened for legal-environmental defense.	Indicators: # legal instruments reviewed or created by lobbying teams; # of legal consultancies implemented for the defense of the territory; # instances of prior consultation (improve processes); # trials with favorable sentences (if applicable).	
Activity 3.2.1 Evaluate socioeconomic needs and the strength status of existing social and participative structures in the region.	Report on the status of social networks promoting citizen involvement in environmental issues.	Gathering of technical information, literature review (national censuses), surveys.	
Activity 3.2.2. Generate a training program promoting the leadership required to establish local and regional spaces for participation.	Training of leaders (equal number of men and women trained and supported in their initiatives) and support for participatory processes.	Identification of local leaders through technical visits, interviews and participant observation.	
Activity 3.2.3. Establish or strengthen existing spaces for participation and the exchange of experiences according to need.	No. of participation spaces identified.	Create and/or manage and facilitate adequate spaces for dialogue. Prepare minutes of meetings detailing the topics discussed and agreements.	
Activity 3.2.4. Establish strategic alliances between different civil society actors to address specific threats in the territories (e.g. mining, deforestation, etc.).	Conservation agreements, alliances and dialogues.	Prepare minutes of meetings detailing the topics discussed and agreements.	
Activity 3.2.5 Build local legal capacity to address issues regarding territorial protection.	List of groups or people trained in legal territorial protection.	Create opportunities for legal training.	
Activity 3.2.6 Establish a lobbying team made up of NGOs and local actors (leaders).	Teams trained and supported.	Impact and management results obtained.	
Activity 3.2.7. Promote consultation and prior consent with rural communities and indigenous groups regarding mining concessions and activities (manage and support this juridical conservation tool).	Communities are informed about processes for consultation and prior consent regarding mining concessions. Evaluation report of community knowledge on legal aspects. If relevant the indicator would be the query, contingent upon prior legal processes.	Awareness of legal aspects pertaining to prior consent for extractive activities. Legal foundation. Pre and post-awareness evaluations.	
Activity 3.2.8. Implement and accompany legal defensive actions when addressing concessions.	Legal processes initiated and accompanied.	Legal foundation. Provision of well-established, inexpensive legal support to accompany and defend communities that face or may face legal proceedings against them.	
Strategy 3. Legal-environmental strengthening program.	ER 3.3 Participatory rapid assessment of the status of the Northwestern Chocó-Andes IBAs and KBAs as conservation symbols at local and international levels.	Indicators: # of northwest Chocó-Andes IBAs evaluated and assigned to KBA status; # areas evaluated within the project's zone of influence that are not IBA, but that meet the KBA criteria.	



Activity 3.3.1. Analyze and review IBAs and other potential areas to be established as KBAs within the area of influence of this project.		Workshop reports and analysis by experts.	Participatory workshops for analysis and review.
Strategy 4. Program for the disposal of solid and liquid waste from households, agricultural and business facilities.	ER 4.1 Sources of contamination (e.g. solid waste) of water bodies and soil are clearly identified.	Indicators: # of pollution sources and their management that are evaluated; # of informative materials delivered on the types of contaminants.	
Activity 4.1.1. Prepare baseline knowledge of contaminants and health status of water bodies and soils in the Chocó-Andes.		Baseline report on water and soil pollutants in the Chocó-Andes.	Surveys of the population, interviews with CELEC managers and/or literature review, water and soil analysis.
Activity 4.1.2. Prepare and disseminate informative materials about the types of pollutants and wastes, and their toxicity.		Publicity materials (fliers and/or informative brochures) on the most commonly used contaminants.	Baseline results. Identification of communities and people to be reached.
Strategy 4. Program for the disposal of solid and liquid waste from households, agricultural and business facilities.	ER 4.2 Contingency and mitigation measures are designed and implemented by provincial and municipal authorities to avoid the contamination of water bodies and soil.	Indicators: # evaluations carried out in waste collection centers; # communities, individuals or companies that have implemented measures to mitigate contamination in water bodies and soil.	
Activity 4.2.1 Promote the creation and enforcement of municipal ordinances (e.g. to prohibit single-use plastics).		Ordinances implemented.	Legal foundation.
Strategy 4. Program for the disposal of solid and liquid waste from households, agricultural and business facilities.	ER 4.3 Local inhabitants and companies change their behavior by respecting the regulations to reduce the threat of contamination.	Indicators: # evaluations carried out in waste collection centers; # communities, individuals or companies that have implemented measures to mitigate contamination in water bodies and soil.	
Activity 4.3.1. Periodically evaluate the status of waste and rubbish collection centers (sanitary landfills and/or dumpsites).		Reports of the state of waste collection centers.	Standardized measurements of waste.
Activity 4.3.2. Evaluate the best water treatment initiatives for sanitary facilities in communities and towns.		Inventory of implemented initiatives and analysis of the status of their application (regulations).	# of sanitary facilities that comply with water treatment regulations in the project area.
Strategy 4. Program for the disposal of solid and liquid waste from households, agricultural and business facilities.	ER 4.4 Decreased risk of soil and water contamination as a result of improved waste management in the Northwestern Chocó-Andes.	Indicators: % reduction of solid and liquid contaminants with respect to the baseline.	

Activity 4.4.1 Comparative analysis of changes in public health status and contamination levels as a result of decontamination campaigns and solid and liquid waste management.		Post-campaign evaluation report.	Evaluations, surveys, and interviews with groups and individuals exposed to the relevant information.
Strategy 5. Campaign for responsible ownership and control of feral domestic animals (dogs and cats).	ER 5.1 The population status of feral domestic animals (e.g., cats and dogs) and their impact on wildlife is evaluated.	Indicators: # of stakeholders with expertise in pet ownership identified and who have joined the initiative; # of pet censuses carried out in priority sites.	
Activity 5.1.1. Identify and involve actors (organizations and people) with experience in this issue and who are already addressing it (e.g. censuses, control).		List of experienced organizations and people interested in working in the region.	Gathering of information to identify key actors. Interviews with organizations and people who work with domestic fauna.
Activity 5.1.2. Carry out censuses of domestic animals with the support of experienced institutions.		Domestic animal population census report.	Standardized count of feral and domestic fauna in different towns.
Activity 5.1.3. Raise awareness of the census process in the areas involved.		Workshops raising awareness on the process. # of communities informed.	-----
Strategy 5. Campaign for responsible ownership and control of feral domestic animals (dogs and cats).	ER 5.2 Responsible pet ownership program is accepted by local authorities and residents.	Indicators: # of communities that have agreed to implement responsible pet ownership programs; # of pet sterilizations performed; % of feral domestic animal population decline compared to baseline (censuses).	
Activity 5.2.1. Advise on the creation of municipal and/or provincial ordinances for responsible pet ownership (sterilization campaigns, etc.).		Ordinances generated, approved, and implemented by government agencies and municipalities. # of governments and municipalities showing interest in this activity.	Legal foundation and examples of previous ordinances.
Activity 5.2.2. Support the capture, management, sterilization, control, and transfer of urban fauna in the territory through prior agreements with local communities and governments.		Agreements with communities and local government agencies supporting the responsible ownership and control of urban fauna.	-----
Strategy 6. Build capacity amongst local actors (governments and civil society) to apply the legal framework to address wildlife trafficking.	ER 6.1. Bird species subject to illegal trafficking are protected.	Indicators: # species affected by illegal trafficking; # trafficking-chain investigations endorsed; % decrease in the trafficking of focal species compared to baseline.	



Activity 6.1.1. Conduct a literature review and additional studies in conjunction with the MAATE to evaluate the bird trafficking problem.	List/catalog of trafficked species. Species trafficking diagnostic report (birds).	Literature review, MAATE databases, environmental police, specialized environmental units (for example, Tueri at USFQ).
Activity 6.1.2. Technically support trafficking chain investigations in the Northwestern Chocó-Andes region of Ecuador.	Review and analysis of the number of open cases on trafficking chains in the region, their status (diagnosis), and their relation to the new environmental penal code.	Review of MAATE and environmental police databases and qualification / categorization of priorities.
Strategy 6. Build capacity amongst local actors (governments and civil society) to apply the legal framework to address wildlife trafficking.	ER 6.2 Local governance to fight bird trafficking is strengthened through a legal-environmental monitoring program focused on indicator species (e.g., endemic and threatened spp.) that is implemented through the cooperation of local actors with municipal and ministerial environmental authorities.	Indicators: # cooperation programs (monitoring) implemented between local actors and MAATE; # people trained on the legal aspects of species trafficking.
Activity 6.2.1. Design and implement community monitoring plans for the focal species to be conserved, and for community monitoring of deforestation (territory defense).	Monitoring plans published and distributed among monitors. Monitoring reports.	Gathering of technical information. Literature review. Monitoring of focal species (e.g. during boreal migration of <i>S. cerulea</i>).
Activity 6.2.2. Train future local monitors on the juridical aspects of legal and illegal wildlife trafficking control.	Training manuals.	Workshops and evaluations.
Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	ER 7.1 Key areas for passive or active reforestation are identified.	Indicators: # hectares identified for native species restoration; # of landowners who allow restoration activities to be undertaken on their properties; # of areas under restoration being evaluated.
Activity 7.1.1. Identify the “most appropriate” ecological restoration strategies (e.g. ecological forestry) for the regions and subregions of the Ecuadorian Chocó-Andes, as well as the priority areas for reforestation and the native species to be used.	Catalog of sites and their respective ecological restoration strategies. Ecological restoration plan and best practices for the Chocó-Andes.	Methodologies, projects, and technical processes enabling an adequate regeneration of vegetation cover between remnant and riparian forests of the Chocó-Andes.
	List of areas and species for reforestation.	Technical data collection, geographic information.

Activity 7.1.2. Develop propagation protocols for native plant and tree species to be used for restoration processes through direct involvement of the local population, strengthening existing nurseries, and valuing local knowledge.	List of native species to be used, and their respective protocols.	Gathering of technical information and literature review.
Activity 7.1.3. Evaluate landscape recovery activities (e.g. reforestation, connectivity, etc.) on the basis of previous actions (e.g. review of protocols or successful restoration projects in the Chocó-Andes).	Landscape recovery evaluation report and list of active and completed projects.	-----
Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	ER 7.2 Committed cooperation exists between local inhabitants, conservation organizations, municipal authorities, and environmental entities for the restoration of various key areas.	Indicators: # agreements signed between local communities and other organizations to carry out restoration activities.
Activity 7.2.1. Identify the appropriate mechanisms for the restoration and protection of ecological conditions in the Northwestern Chocó-Andes region.	Report identifying the main restoration mechanisms.	Gathering of technical information, interviews with experts and surveys.
Activity 7.2.2. Establish collaborative agreements between local actors and organizations conducting local/regional initiatives using a participatory approach with local communities and institutions (e.g. FONAG or CONDESAN for water sources or for riparian connectivity).	Commitments between local communities and other organizations to carry out restoration activities.	Dialogue between local communities and organizations.
Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	ER 7.3 Permits to undertake vegetation restoration activities in indigenous / Afro-descendant and/or municipal territories are submitted for approval.	Indicators: # permits granted by indigenous and Afro-descendant communities authorizing restoration processes in their territories.
Activity 7.3.1. Conduct a gap analysis to identify areas to be restored and reconnected in order to plan actions on the ground.	Updated maps.	Geographic information and literature review.
Activity 7.3.2 Participatory evaluation of the feasibility and interest of establishing restoration projects in the identified local communities.	List of areas and people involved in the restoration project.	Gathering of technical information.
Activity 7.3.3 Implement incentive projects for forest restoration using the most appropriate/adequate actions.	# of incentives for restoration.	Awareness-raising and agreements.



Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	ER 7.4 Degraded and/or connecting areas are restored.	Indicators: # people trained in restoration; # plants planted; # ha restored; % vegetation cover recovered compared to baseline.	
Activity 7.4.1. Provide training to project participants (e.g. communities, local authorities) on restoration techniques, plant propagation, nursery management, and other technical actions.	Number of people, workers and community members trained.	-----	
Activity 7.4.2. Design restoration programs with plant species that are of interest to communities and in key areas such as water catchments or important sites for birds of special interest.	Report identifying plant species with financial potential.	Technical information collection.	
Activity 7.4.3. Restore selected areas after evaluation and obtaining the relevant permits.	Number of restored areas.	Restoration processes using previously reviewed protocols.	
Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	ER 7.5 Monitoring programs for recovered and interconnected areas (corridors) are launched and technically assisted.	Indicators: # monitoring programs in restored areas implemented and technically assisted; % survival of planted seedlings.	
Activity 7.5.1. Establish a participatory monitoring and maintenance program for the restored or planted areas that includes technical assistance and accompaniment.	Monitoring reports in restored areas.	Tools for monitoring the areas to be restored. Comparative analysis with previous experiences.	

Strategy 7. Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.	ER 7.6 Local authorities are committed to the conservation of the forests and biodiversity of the Ecuadorian Chocó and are willing to contribute to long-term conservation and restoration activities in the region.	Indicators: # authorities committed to habitat restoration schemes through agreements; # PDOTs in locations where this strategy has been initiated.	
Activity 7.6.1. Provide input to Land Management Plans and promote the creation of local authority ordinances promoting this strategy (e.g. create protected area subsystems).	Ordinances and agreements.	Legal foundations aligned to the strategy.	
Strategy 8. Implement innovative financial mechanisms and systems that promote the protection and restoration of target forests and biodiversity.	ER 8.1 Companies present in the region are committed to the conservation of forests and biodiversity and desire to contribute financially to restoration activities and campaigns to prevent illegal wildlife trafficking.	Indicators: # committed companies contributing financially to conservation activities; # companies trained in best practices, such as the use of the Integrated Biodiversity Assessment Tool (IBAT); # of conservation projects for focal species supported by priority species sponsors (“species champions”); # of companies evaluated prior to agreements.	
Activity 8.1.1. Identify businesses/companies/institutions interested in and committed to conservation and the environment.	List of companies, companies and institutions.	Information gathering.	
Activity 8.1.2. Generate proposals to attract the interest of companies in conservation issues and the protection of Chocó-Andes species and habitats.	Dissemination plan targeting companies.	Gathering of information, expert consultation.	
Activity 8.1.3. Search for and/or work with ‘Species Champions’ ¹ for key species of the Northwestern Chocó-Andes or for the forests selected.	List of people/companies interested in or wanting to sponsor the selected species of the Northwestern Chocó-Andes.	Gathering of profile information.	
Activity 8.1.4. Assess the types of businesses and companies interested in financing these activities in order to avoid funding sources associated with socio-environmental conflicts.	List of companies or related ventures that have been evaluated.	Information gathering.	

1 Refers to a BirdLife International species conservation program that nominates the donors or collaborators of specific projects as ‘Species Champions’. More information: <https://www.birdlife.org/species-champions/>

Strategy 8. Implement innovative financial mechanisms and systems that promote the protection and restoration of target forests and biodiversity.	ER 8.2 Public/private funding sources for restoration are adequately managed.	Indicators: <i>Monetary sum of public/private resources managed.</i>	
Activity 8.2.1 Identify active or available public and private financing mechanisms and resources for the implementation of restoration activities.	List of public and private funding sources.	Information gathering and literature review.	
Activity 8.2.2. Plan and manage the use of public and/or private funding for the implementation of restoration activities.	Public and private resources for restoration activities.	-----	
Strategy 9. Creation and management of private protected areas and other conservation figures in the region (Subsystems).	ER 9.1 Municipal and provincial protected areas (ACUS, biocorridors, etc) that allow sustainable livelihoods have been designed	Indicators: <i># protected areas to be declared as a part of bio-corridors, subsystems such as ACUS, etc.</i>	
Activity 9.1.1. Identify, establish, and strengthen key critical conservation areas in the Ecuadorian Chocó-Andes that must be protected from any type of threat (e.g. existing IBAs and/or KBAs, ACUS and/or corridors).	Maps of identified protected areas.	Technical and bio-geographical information gathering.	
Activity 9.1.2 Promote the creation of private protected areas and other conservation figures established in the region.	Schedule of meetings, interviews, presentations.	-----	
Strategy 9. Creation and management of private protected areas and other conservation figures in the region (Subsystems).	ER 9.2 Public, private and/or community Protected Areas and other conservation figures are created, supported, and financed.	Indicators: <i># of private or public protected areas created; # of new hectares protected; # management plans created or updated.</i>	
Activity 9.2.1. Identify and manage areas not owned by communities or indigenous groups to establish land with a view to purchasing these lands for conservation or recovery.	Map of newly acquired areas.	-----	
Activity 9.2.2. Create or update management plans for private protected areas.	Management plans updated and created.	-----	
Strategy 9. Creation and management of private protected areas and other conservation figures in the region (Subsystems).	ER 9.3 Indigenous and other local community territories in the region are protected and conserved.	Indicators: <i># ha newly protected within indigenous and Afro-descendant territories.</i>	

Activity 9.3.1. Map and register ancestral indigenous territories with high biodiversity as key biodiversity conservation areas of Northwestern Chocó.	Map of indigenous territories to be conserved.	Consultations, surveys, or # of mapping requests made by indigenous groups
Activity 9.3.2. Design and develop a training plan for indigenous and local community monitors, including: - Experimental design. - Relevant biodiversity data collection (KBA standard). - Creation of management plans for the areas to be protected.	Training plan for local monitors.	Based on existing plans in the region.
Strategy 9. Creation and management of private protected areas and other conservation figures in the region (Subsystems).	Expected Result 9.4: The current vegetation cover of Ecuador's Chocó-Andes forests is conserved.	Indicators: <i>% reduction in annual loss of vegetation cover compared to 2010-2020 values; # of recognized KBA sites and total area in hectares.</i>
Activity 9.4.1. Establish multi-party agreements (institutions, communities and/or indigenous groups) for the co-management of designated protected areas.	Co-management agreements.	Legal foundations.
Activity 9.4.2. Identification of conservation areas such as KBA logged and managed.	Map of KBAs.	Standard KBA methodology.

Photo: Juan Carlos Valarezo
Description: Chocó-Andes landscape in the Alambi community, Northwest Pichincha

ANNEX 6. FINANCIAL SUSTAINABILITY PLAN

GENERAL STRATEGIC FRAMEWORK FOR FINANCIAL SUSTAINABILITY

Objective

Establish potential sources of public or private funding (national and international) to implement the Conservation Investment Strategy for Resident and Migratory Birds of the Chocó-Andean Region in Northwestern Ecuador over a 10-year period.

Relevant aspects

The biodiversity of the Ecuadorian Chocó-Andes is well documented, but there are a number of threats that may present complex challenges to financing and implementing the overall conservation approach (see Fig. 2: Situational model). The various strategies outlined in this document traverse three main axes: local governance, socio-environmental networks, and science. It is imperative to consider these three axes in a coordinated manner to obtain better results in 10 years.

Furthermore, the conservation strategies for the Northwestern Chocó-Andes can be extended to Colombia, which shares the Chocó bioregion, as well as to the south of Ecuador as far as the province of El Oro, the southern distribution limit of several Chocó endemic birds. This allows for the derivation of national and bi-national projects generating mutual support and an exchange of experiences. Under this perspective, the program should involve the largest number of actors from the public and private sectors, civil society, and local communities.

Constraints

The biological richness of the Ecuadorian Chocó-Andes region is a distinct advantage for designing funding mechanisms to implement the strategies in this document. However, there are a number of constraints that must be considered when making financial decisions in order to foresee any potential challenges.

Some of the most relevant constraints are as follows:

Legal aspects: Ecuadorian legislation puts limitations on how the strategy outlined in this document can be financed. Although Ecuador has extensive norms governing environmental issues and public consultation, its government prioritizes actions and the use of funds based on global trends, which in this case translates to the growing demand for fossil fuels and minerals. The subsequent political and administrative actions must be taken into account and carefully evaluated.

Political and economic aspects: Ecuador's economy is mainly sustained by fossil fuel extraction and metal mining. Along with the expansion of extensive industrial agriculture and deforestation, these extractive activities threaten the conservation of the Northwestern Chocó-Andes and other ecosystems and habitats important for biodiversity in the country.

National priorities: The Chocó-Andes is a key area with unique biodiversity. However, the Ecuadorian government along with the conservation and development sectors prioritize other important areas perceived as being under greater threat, i.e. the Amazon (economic context whereby oil extraction and mining constitute the primary income for the country) and the Galápagos archipelago in relation to its identity and issues threatening its international image (tourism and conservation).

Socioeconomic aspects: Since 2021, poverty index measurements have focused on the Amazon region to justify extractive activities. However, according to a calculation of poverty by income conducted by the National Institute of Statistics and Censuses (Orozco, 2022), Esmeraldas continues to be the poorest province in western Ecuador (52.9%). Compared to a 2014 analysis at the level of provincial governments, three of the four provinces included in the present document (Esmeraldas, Imbabura, and Carchi) concentrate the highest indices of poverty by consumption (57% - 96%) (Cabrera *et al.* 2014).

Funding sources and mechanisms

The strategies included in the present document (recalled below) may have different funding opportunities.

- 1 Incentive program for the conservation of the Chocó-Andes of Northwestern Ecuador.
- 2 Comprehensive education and communication initiatives with local communities.
- 3 Legal-environmental strengthening program *Territorial Defense.
- 4 Program for the disposal of solid and liquid waste from households, agricultural and business facilities.
- 5 Campaign for responsible ownership and control of feral domestic animals (dogs and cats) in priority sites in the Chocó-Andes of Ecuador.
- 6 Capacity-building for local monitors on the legal procedures needed to address wildlife trafficking, protection and guarantees of anonymity for denouncers of illegal fauna and flora trafficking.
- 7 Science-based program for the restoration of vegetation cover to generate connectivity between remnant forest patches and riparian forest in the Chocó – Andes of Ecuador.
- 8 Establish innovative financial mechanisms for the preservation and protection of conservation target species and for forest and biodiversity restoration in the Chocó of Northwestern Ecuador.
- 9 Creation and management of private protected areas and other conservation figures in the region (Subsystems).



The following table summarizes how the identified financing mechanisms may benefit the different strategies for conservation investment.

Source of funding	Examples	Who has access	Pros	Cons	Strategy benefited
Public funds	Debt exchanges, State treaties and international cooperation agreements, Environmental Fund for Sustainable Investment (FIAS), REDD+, Provincial and Municipal Governments (GAD) budgets	Central government, municipalities, local or community associations, NGOs, Universities	<ul style="list-style-type: none"> - Most are controlled by the national administration. - They are included in public policy plans (institutionalization). - Opportunities for monetary incentives. E.g. carbon sequestration credits. 	<ul style="list-style-type: none"> - Some funds implement policies that are far removed from conservation and sustainable development. - Some institutions may present bureaucratic obstacles. - Social instability in some regions included in the project. 	1,2,4,5,6,7,9
International Cooperation Funds with direct application	Environmental funds from foreign governments such as USFWS, ECCC, German and Danish cooperation funds, among others	NGOs, Universities	Applications do not need to be submitted through the State.	<ul style="list-style-type: none"> - Restrictions regarding the allocation of funds (e.g., not for science, or not for strengthening of local governance). - Matching funds requirements, which are not always possible. 	All

Private funds	Compensation funds	Affected parties demanding environmental payments or remediation from companies.	Directly applicable as urgent mitigation plans.	Absence of these types of funds in contracts and the low political will to include them.	2,4,5,7,8
	Business environmental policies (interest in supporting conservation processes as business policy)	Actors involved / interested parties - organizations	Can promote sustainable projects	Risk assessments can negate the delivery of funds due to social instability.	Depends on the business interests in each strategy.
	Investments in sustainable activities (bank loans)	Local actors and any organization or institution.	Injection of funds to improve sustainable and environmentally friendly local productive activities.	Investment risks, e.g. socio-economic situation.	1,2
Charities and other international conservation funds	Donations, organization funds such as Rain Forest Trust, Whitley Fund for Nature, Darwin Initiative, Disney Conservation Fund, CPF Partnership Fund, and others	NGOs, universities, local associations	They can be used as seed funding for activities requiring long-term implementation.	<ul style="list-style-type: none"> - Some can be very competitive. - Need for matching funds, which do not always exist. 	Depends on the fund.

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