CRITICAL ECOSYSTEM PARTNERSHIP FUND

TECHNICAL SUMMARY OF THE ECOSYSTEM PROFILE

TROPICAL ANDES BIODIVERSITY HOTSPOT

2021 Update

FINAL VERSION

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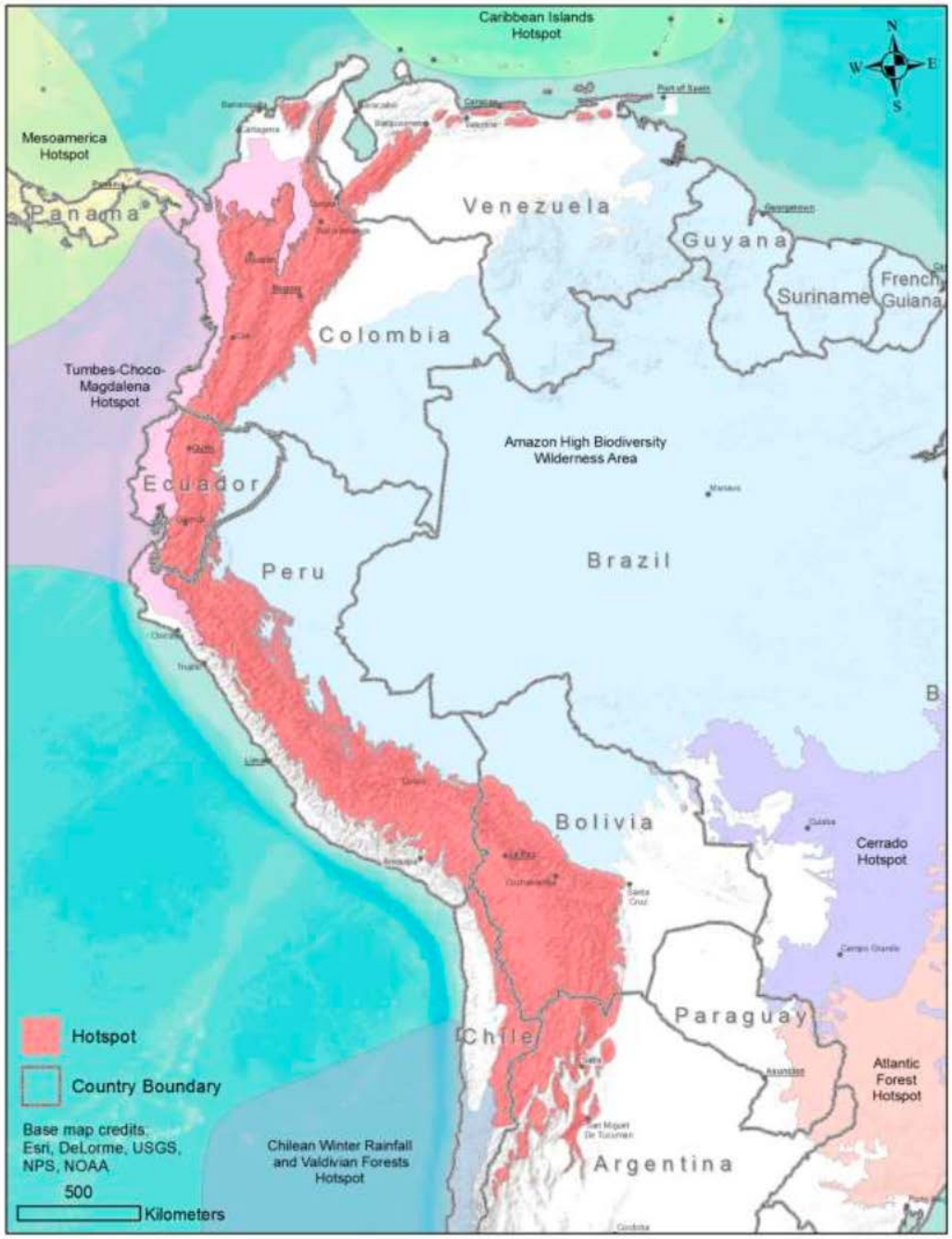
1. INTRODUCTION

The Tropical Andes Biodiversity Hotspot extends from the Andes Mountains of Venezuela, Colombia, Ecuador, Peru, Bolivia, and the northern sections of Chile and Argentina (Figure 1.1). It constitutes one of 36 biodiversity hotspots in the world that together cover 16.7 percent of the Earth's land surface, but are home to an inordinate number of threatened endemic species. Biodiversity hotspots contain at least 1,500 endemic plant species and have lost at least 70 percent of their natural habitat. Most hotspots are located in tropical countries with complex political systems, major economic and human development challenges.

Figure 1.1. Location of the Tropical Andes Biodiversity Hotspot



The Critical Ecosystem Partnership Fund (CEPF) was established to channel funding to non-governmental organizations to conserve critical ecosystems in biodiversity hotspots. The investments are all the more significant because many hotspots serve as homes to millions of impoverished and highly resource-dependent people. CEPF empowers people to become stewards of the planet so that they and future generations will continue to benefit from the resources that sustain them, such as biodiversity, clean air, fresh water, a stable climate, and healthy soils.

In 2019, CEPF's Donor Council approved a new investment phase for the Tropical Andes Hotspot, to extend from 2021 to 2026. Prior to initiating the new investment phase, CEPF commissioned the preparation of an update to the ecosystem profile to assess the current state of the hotspot, identify conservation priorities, and develop an investment strategy to guide grantmaking.

CEPF's accomplishments in the Tropical Andes during Phase I and II investments provide a solid foundation, important lessons learned, and conservation results to be consolidated, warranting the launch of a new phase of investment in the Andes that requires updating the ecosystem profile approved in 2015.

This document constitutes a summary of the ecosystem profile of the Tropical Andes Hotspot, a territory with global importance for biodiversity conservation and for critical ecosystems services for all humanity, but at the same time, threatened by a multitude of factors. A synthesis of the hotspot's geographic characteristics, biodiversity, threatened species, KBAs and corridors is presented, as well as the main threats, the socioeconomic, political, and civil society context, and an assessment of conservation investment in the hotspot between 2015 and 2019. This contextual information forms the basis of CEPF's investment strategy in the Tropical Andes for the period of 2021 to 2026. In addition, this information can assist other donors, government agencies, civil society organizations and private sector groups to prepare their conservation strategies and programs, as coordinated efforts among multiple institutions are required to address the challenges facing the hotspot today.

2. BACKGROUND

Three complementary processes supported the ecosystem profile update:

- Between January and August 2020, CEPF conducted a strategic planning process focusing on Ecuador that was led by the EcoCiencia Foundation in collaboration with KfW Germany and the CEPF Secretariat. This resulted in a project profile to be funded by KfW specifically for Ecuador.
- Between July 2020 and March 2021, an alliance of civil society organizations carried out a process to update this profile led by Pronaturaleza (Peru) and supported by Panthera Colombia, Fundación Arcoiris (Ecuador), Practical Action (Bolivia) and BirdLife International in its role as manager of the Secretariat of the KBA Partnership.
- From August 2020 to March 2021, CEPF funded the development of the long-term vision for the hotspot, which was carried out by Talking Transformation, a UK-based company with extensive experience in the Andes.

Updating the ecosystem profile required the compilation and analysis of technical data from scientific literature on the hotspot. To validate and complement the secondary information, the Pronaturaleza alliance organized four levels of consultation with key hotspot stakeholders: 1) 30 local experts from Colombia, Ecuador, Peru and Bolivia were

interviewed on socioeconomic, political and civil society aspects of working in their respective countries; 2) 146 stakeholders from the seven hotspot countries participated in a digital survey, which covered a wide range of topics, including conservation outcomes, KBAs, corridors, threats, civil society context, climate change, COVID-19 effects and KBA prioritization; 3) Between October 2020 and February 2021, 260 stakeholders from 103 organizations participated in four virtual national consultation workshops and one regional workshop to provide recommendations for this profile and the investment strategy; and 4) An external advisory committee comprised of three high-level experts provided strategic guidance on the profiling updating process and findings.

The entire process of updating the ecosystem profile was supported and supervised by the CEPF Secretariat, which reviewed and approved this document. The CEPF Donor Working Group reviewed the draft profile on April 2, 2021. Comments were incorporated and the updated draft was reviewed by the Working Group on April 15, 2021. The final version of the ecosystem profile was presented to the CEPF Donor Council on April 23, 2021 and no-objection approval secured on June 10, 2021.

3. CEPF INVESTMENT IN THE TROPICAL ANDES HOTSPOT

This ecosystem profile builds on the results achieved and lessons learned during CEPF's previous investments in the Tropical Andes, which were divided between Phase I from 2001 to 2013 and Phase II from 2015 to 2021.

In Phase I, CEPF approved 67 projects totaling $8.135 million. From 2001 to 2006, CEPF's support to the hotspot amounted to $6.13 million and focused on the Vilcabamba-Amboró Conservation Corridor of southern Peru and northern Bolivia, a 30-million-hectare territory of forested landscapes covering about 20 percent of the hotspot area, where conservation actions were at that time very incipient. Investments from 2009 to 2013, known as the consolidation phase of Phase I, totaled $2.185 million and focused on the smaller Tambopata - Pilón Lajas sub-corridor between Peru and Bolivia. The objective under the consolidation phase was to support local civil society groups to mitigate the expected impacts arising from the construction of highways through the hotspot: the Southern Interoceanic Highway in Peru and the Northern Corridor Highway in Bolivia. CEPF's investments helped lay the groundwork for promoting conservation and mitigating the negative impacts of these infrastructure projects.

Mid-term and final assessments of Phase I revealed that partners recognized that CEPF’s contributions that brought new areas under formal protection and strengthened existing protected areas were major accomplishments. Local partners were genuinely enthusiastic about gaining a regional perspective and shaping their conservation and development programs around a more integrated, landscape-scale strategies. Prior to CEPF, conservation was tackled largely through isolated initiatives and collaboration was generally weak. CEPF’s presence stimulated collaboration among major stakeholders, both government agencies and civil society organizations, bringing local and international missions and perspectives to the table.

Results demonstrated strong value-for-money and conservation results of global impact:

- More than 4.4 million hectares came under new protection with the declaration of nine new national parks, indigenous reserves, private protected areas, and Brazil nut concessions. Seventeen existing protected areas covering 9.9 million hectares came under improved management through the development of management plans, establishment of management committees, strengthened park management capacity, and improved infrastructure and equipment. These improvements allowed the core areas of five protected areas covering 4.4 million hectares to remain intact, withstanding threats from gold mining, agricultural encroachment, and logging.
- Livelihoods projects, though eco-tourism, sustainable Brazil nuts gathering, micro-enterprise development and sustainable coffee and cocoa projects reached 8,000 indigenous and mestizo communities while offering incentives to maintain biodiversity. CEPF introduced innovative community livelihood projects compatible with biodiversity conservation. For example, CEPF was the first donor to provide significant support to Brazil nut (*Bertholletia excelsa*) gatherers in Madre de Dios, resulting in formal property rights for 130 Brazil nut gatherers and the sustainable management of 225,000 hectares of forest vital for landscape connectivity.
- Eleven multi-stakeholder alliances were established and/or strengthened, including alliances to monitor the construction of the two highways, support improved protected areas management, and undertake regional-level REDD+ policy development.
- Civil society influenced eight policies and projects related to highway development, dam planning, gold mining, private protected areas, sustainable financing, logging concessions, and REDD+. Community and stakeholder engagement offered new approaches to engage local people in road development projects.
- Environmental leaders and institutions developed new capacities to address the region's conservation challenges. For example, support to the Peruvian Society of Environmental Law (SPDA) led to Peru's first private protected areas, which proved so successful that they have been adopted throughout the country.

In Phase II, CEPF invested $9.5 million to implement 100 conservation projects in the seven priority corridors located in Colombia, Ecuador, Peru and Bolivia, achieving significant results:

- More than 2.9 million hectares came under improved management. Of this amount, 1.3 million hectares were located within 24 KBAs and 1.6 million were in KBA buffer zones and biological corridors. A total of 26 new protected areas were established covering 763,901 hectares. In total, CEPF invested in 32 KBAs covering 2,661,642 hectares.
- CEPF monitoring shows that 59,861 people living in 294 communities across the far reaches of the Andes Mountains, some located in very remote areas, derived direct benefits from CEPF projects.
- Subnational governments with jurisdiction in six corridors adopted conservation tools, strategies and actions to mainstream biodiversity considerations in their development plans.
- Nine indigenous ethnic groups experienced improved land management and governance: Tsimané-Mosetene, Aymara and Quechua in Bolivia; Awá and Emberá in Colombia; Awa, Shuar and Chachi in Ecuador; and Awajún, Queros and Quechua in Peru.
- 100 networks and partnerships between civil society, government and the private sector were created and/or strengthened.

- 65 civil society organizations (55 local and national CSOs and 10 international CSOs) benefitted directly as CEPF grantees.
- Three mining cooperatives in Bolivia adopted environmental and social responsibility best practices and served as demonstration projects for responsible mining.
- 73 globally threatened species experienced direct conservation attention. Another 216 species also received direct benefits, and 74 species new to science were identified, with 23 formally confirmed totaling 360 species supported through CEPF projects.
- Eight financing mechanisms were established for conservation and sustainable development.
- CEPF enabled the leveraging of nearly $5 million from local governments and donors, including GEF Small Grants Programme, MacArthur Foundation, Andes Amazon Fund, Rainforest Trust, and Moore Foundation.

Lessons Learned from CEPF Investment

CEPF derived several lessons learned from Phases I and II that informed grant making and provided useful guidance to develop the Phase III investment strategy:

- The critical advances through CEPF required reinforcement to ensure they could be sustained over the long term. Continental-scale development projects that included new frontier roads, dams and major water diversion schemes, and the awarding of mining concessions with weak environmental and social oversight, posed existential threats to the hotspot's biodiversity and cultures. CEPF partners therefore strongly supported the need to reinforce the important foundation that CEPF projects laid in Phases I and II.
- Building the capacity of Andean CSOs continues to be a high priority to fulfill their role as the long-term stewards of biodiversity and sustainable development in the Tropical Andes.
- Collaboration with sub-national governments is critical because decision-making authority for natural resources management is decentralized to local governments in the hotspot, and often local governments lack the technical capacity and funding to fulfill their responsibilities in environmental protection.
- Despite continued violence against environmental and indigenous defenders in Colombia, a key lesson learned is that local environmental and indigenous CSOs remained well positioned to lead in grassroots conservation and sustainable development activities.
- COVID-19 and the resulting economic contractions exposed the vulnerable state of finances for conservation in the Tropical Andes. Several national environmental ministries encountered significant budget and staffing cuts, making the role of civil society organizations ever more important to lead environmental and sustainable development efforts. At the same time, the environmental CSOs also experienced financial downturns due to the crisis, exposing their own vulnerabilities to economic shocks.
- Phase II demonstrated that Andean civil society groups generally lack experience and capacity to work with larger private sector companies. CEPF should reach out to new partners with experience and capacity to work with local CSOs and the private sector to advance conservation in the hotspot.
- To promote the sustainability of CEPF-funded initiatives, more focus needs to be devoted to institutionalizing conservation plans and actions within the

policies and programs of local governments, other donors, and the private sector.

4. BIOLOGICAL IMPORTANCE OF THE HOTSPOT

The Tropical Andes Hotspot comprises the northern and central part of the longest mountain range on Earth. It extends over more than 1.5 million km^2 that include an enormous latitudinal and altitudinal range, from sea level to more than 6,000 m above sea level. Its geographic characteristics favor the presence of a wide variety of climates, from hyper-humid to arid, and therefore of ecosystems. Its general topography is characterized by the presence of a low-lying coastal mountain range in Venezuela, three mountain ranges and the Sierra Nevada de Santa Marta in Colombia, the inter-Andean valleys of Ecuador and Peru, the Altiplano of Peru and Bolivia, and the high ridges of Argentina and Chile on the periphery. It also borders other hotspots of high biodiversity, such as the Tumbes-Chocó-Magdalena Hotspot to the northwest, the Amazon Wilderness Area in the east, and the Chilean Mediterranean Forest and Valdivian Temperate Rainforest Hotspot to the southwest. This set of factors has favored the evolution of extraordinary biological richness.

Andean Habitats and Species

The Tropical Andes constitute a complex mosaic of more than 130 ecosystems that can be generally characterized into seven categories: 1) Andean páramos; 2) montane and premontane forests, pluvial, semi-deciduous and deciduous forests; 3) humid punas; 4) xerophytic punas; 5) inter-Andean valleys; 6) salt flats; and 7) glaciers.

The region is the most species-rich hotspot on the planet, both in absolute numbers of species and in the total number of endemic species (Table 4.1); except for reptiles, all other groups of terrestrial and aquatic vertebrates and plants reach higher values than those of any other hotspot.

Table 4.1. Species Diversity, Endemism and Global Threat Status in the Tropical Andes Hotspot

Taxonomic group	Species	Endemic Species	Percentage of Endemism	Threatened Species
Vascular plants	~30,000	~15,000	~50.0	330
Fish	~900	666	~74.0	79
Amphibians	~1,120	800	~71.4	558
Reptiles	~700	275	~40.0	125
Birds	~2,000	600	~30.0	214
Mammals	~600	80	~13.3	88
Invertebrates	No data	No data	--	56
Fungi	No data	No data	--	1
Total	**~35,320**	**~17,421**	**~49.3**	**1,451**

Importance of Ecosystem Services and Functions

The ecosystem services of the Tropical Andes are of global importance. Its eastern slope is the source of major rivers that downstream feed the Amazon rainforest, one of the largest freshwater reserves on the planet. The region is the second most important hotspot in the world for irrecoverable carbon stocks, housing 314,291,735 metric tons of

carbon, which, if lost, could not be restored by 2050.

Its ecosystems have supported human settlements for more than 13,000 years and currently provide air, water, hydropower and livelihoods for 59.7 million people living in the hotspot. In addition, Andean waters irrigate some of the most important agricultural regions of the continent. Other services provided by this hotspot include food, fuel, vegetables, climate regulation, pollination, flood control, soil formation, nutrient recycling, recreational and religious services, spiritual values, and artistic inspiration, to mention the most important.

5. HOTSPOT CONSERVATION OUTCOMES

CEPF defines its conservation outcomes at three interrelated levels: species, sites and corridors on which conservation actions should focus to prevent species extinction. The sites where CEPF works correspond to key biodiversity areas (KBAs), considered the most important sites for life on Earth as custodians of threatened species. To maintain ecosystem functions and services over the long term, corridors ensure the necessary connectivity between KBAs and their host landscapes.

Species Outcomes

The ecosystem profile identified 1,451 globally threatened species for the Tropical Andes (Table 5.1). Although this figure is higher than in any other hotspot, it is also a substantial underestimate of the real number because some groups have not been assessed in depth, especially fungi and protists, invertebrates, plants or fish.

Amphibians are the most threatened group in the hotspot, with more than a third of the total number of threatened species, followed by birds and reptiles, although the latter two groups have a higher percentage of vulnerable species than amphibians. Even so, the list also includes charismatic mammal species such as the spectacled bear, the mountain tapir and the yellow-tailed monkey. Climate change and habitat loss caused by land-use change represent the main threats to Andean species, so orienting efforts to climate change goals, establishing or strengthening protected areas and promoting sustainable production alternatives will help to reduce these pressures.

Table 5.1. Globally Threatened Species in the Tropical Andes Hotspot

Taxonomic group	Common name	Critically Endangered	Endangered	Vulnerable	Total
Animalia					
Vertebrates					
Actinopterygii	Fish	11	31	37	79
Amphibia	Amphibians	102	277	179	558
Birds	Birds	19	74	121	214
Mammalia	Mammals	8	25	55	88
Reptilia	Reptiles	19	48	58	125
Subtotal		**159**	**455**	**450**	**1,064**
Invertebrates					
Bivalvia	Mollusks	1		1	2
Gastropoda	Snails and slugs	1		6	7

Insecta	Insects	7	23	16	46
Malacostraca	Crabs, lobsters and relatives			1	1
Subtotal		**9**	**23**	**24**	**56**
Fungi					
Sordariomycetes	Fungus	1			1
Subtotal		**1**			**1**
Plantae					
Liliopsida	Monocotyledons	21	39	14	74
Lycopodiopsida	Aquatic lycophytes	2		4	6
Magnoliopsida	Dicotyledons	47	108	95	250
Subtotal		**70**	**147**	**113**	**330**
Total		**239**	**625**	**587**	**1,451**
Percentage		**16.5**	**43**	**40.5**	

Site Outcomes

As of August 2020, the Tropical Andes Hotspot contained a total of 474 KBAs, including 359 Important Bird Areas (IBAs), 103 Alliance for Zero Extinction (AZE) sites, and 51 candidate or proposed KBAs awaiting final validation. Together, the 474 KBAs cover 32,510,468 ha within the hotspot, or one-fifth of the hotspot, an area slightly larger than the area of Norway (Table 5.2). The KBAs have an average area of 90,710 hectares, but range from 63 hectares to 2,184,234 hectares.

Table 5.2. Summary of Site Outcomes for the Tropical Andes Hotspot

Country	Number of KBAs[3] (nominated/ proposed)	KBA area (ha)	Area of KBA within the hotspot (ha)	Area of country within the hotspot (ha)	Percentage of the hotspot area covered by KBAs
Argentina	76	4,302,130	2,398,807	14,872,835	16
Bolivia	47 (7)	6,777,212	6,664,450	37,000,978	18
Chile	12	586,998	495,771	7,384,220	7
Colombia	119 (14)**	7,878,654	6,743,033	35,028,997	19
Ecuador	88 (16)	4,708,664	4,275,071	11,786,708	36
Peru	106 (14)	14,393,717	9,344,586	45,326,966	21
Venezuela	26	4,349,607	2,588,751	6,952,395	37
Tropical Andes Hotspot	474 (51)	42,996,982	32,510,468	158,353,100	21

( ) In brackets, KBAs nominated/proposed.
**Between August 2020 and December 2020, a new KBA was nominated for Colombia that has not been included in these calculations.

Venezuela

Venezuela is the country with the second lowest number of KBAs, with a total of 26 sites, covering an area of 2,588,751 hectares, equivalent to 37 percent of the Venezuelan hotspot section. Fifteen of Venezuela's 26 KBAs have a very high relative biodiversity value (RBV) and almost all of them are protected areas. Weak governance in

these areas is their main challenge. These KBAs are fundamental to protect the water sources of the country's main cities, including Caracas, Maracaibo, Valencia and Maracay (Figure 5.1).

Colombia

Colombia has 119 KBAs in the hotspot, more than any other Andean country, yet its KBAs barely cover one-fifth of the Colombian section of the hotspot. Twenty-nine and 57 of these sites have a very high and high RBV respectively. Several KBAs on the Pacific slope contain forests that transition to the Tumbes-Chocó-Magdalena hotspot, while several KBAs on the eastern slope include transition forests to the Amazon basin and are under heavy deforestation pressure. Other KBAs in the northern section connect with the almost extinct Caribbean dry forests. In several KBAs, there is the opportunity to work with different indigenous groups. Some KBAs are particularly important for water supply to major cities, including the three main cities of the country, Bogotá, Cali and Medellín, as well as water supply for agriculture and hydroelectric dams (Figure 5.2).

Ecuador

Despite its relatively small size, Ecuador has 88 KBAs, covering 36 percent of the hotspot portion of the country. Seventeen KBAs have a very high RBV, while 38 sites have a high RBV. As in Colombia, KBAs on the western and eastern slopes transition with the Tumbes-Chocó-Magdalena hotspot and the Amazon rainforest, respectively. Many KBAs are inhabited by indigenous communities. They supply water to all major cities in Ecuador, including Quito, Guayaquil, and Cuenca, in addition to supplying water for agricultural regions and major hydroelectric dams (Figure 5.3).

Peru

Peru contains the largest part of the hotspot, with 29 percent of the area, and ranks second in number of KBAs with 106 sites, representing one-fifth of the Peruvian hotspot. Two of its KBAs have a high RBV. Peru's KBAs, as well as the highest RBV KBAs for the country, are concentrated on the eastern flank of the Andes, with a few located on the dry western flank or in the inter-Andean valleys. Due to Peru's dry coastal climate, water supply from the Andean KBAs is a vital ecosystem service, including the capital city of Lima (Figure 5.4).

Bolivia

Bolivia has 47 KBAs covering about one-fifth of the Bolivian hotspot area, three of which have a high RBV. As in Peru, the KBAs with the highest RBV are on the eastern slopes of the Andes. The water supply of the main Bolivian cities depends on KBAs located in the Altiplano and on the eastern slope of the hotspot (Figure 5.5).

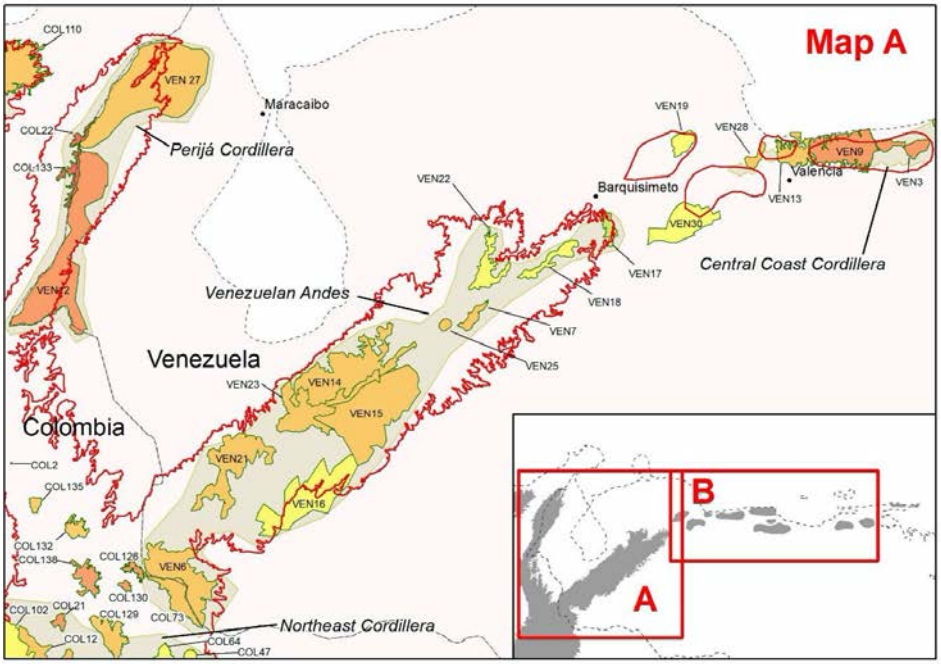
Argentina

The southernmost portions of the humid montane forests and puna grasslands of the hotspot extend to Argentina where 76 KBAs are recorded covering 16 percent of the Argentine section of the hotspot. Although Argentina has a great diversity of habitats, all of its KBAs have low and very low RBVs, reflecting the wide distributions and low threat status of their species, as well as lower biodiversity due to being in subtropical areas (Figure 5.6).

Chile

In Chile, the hotspot is located entirely in the semi-desert Altiplano where there are 12 KBAs. Chile's KBAs are small areas, some protected as parks, reserves and national monuments. Although several endemic species are found in the sites, none reach a mean RBV value (Figures 5.5 and 5.6).

Figure 5.1. KBAs in the Venezuelan Region of the Tropical Andes Hotspot



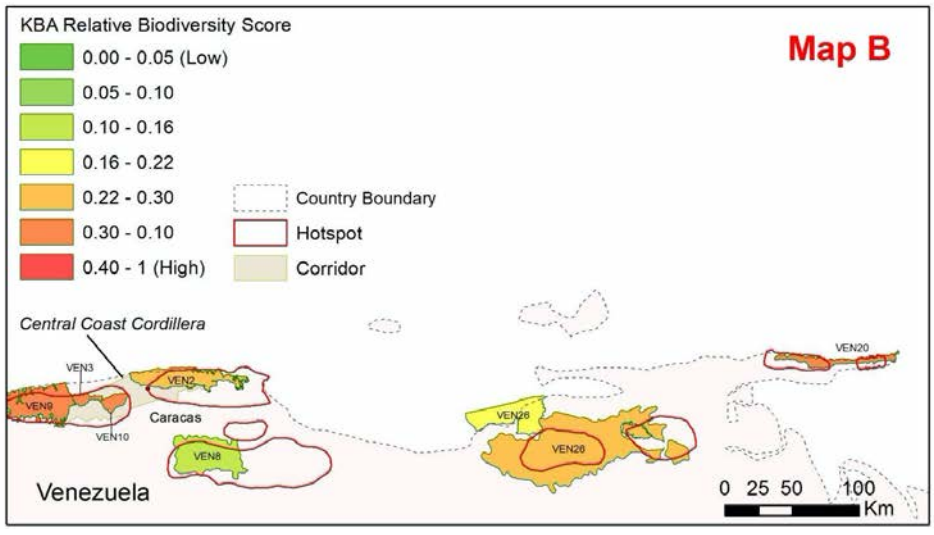


Figure 5.2a KBAs in the Northern Colombian Region of the Tropical Andes Hotspot

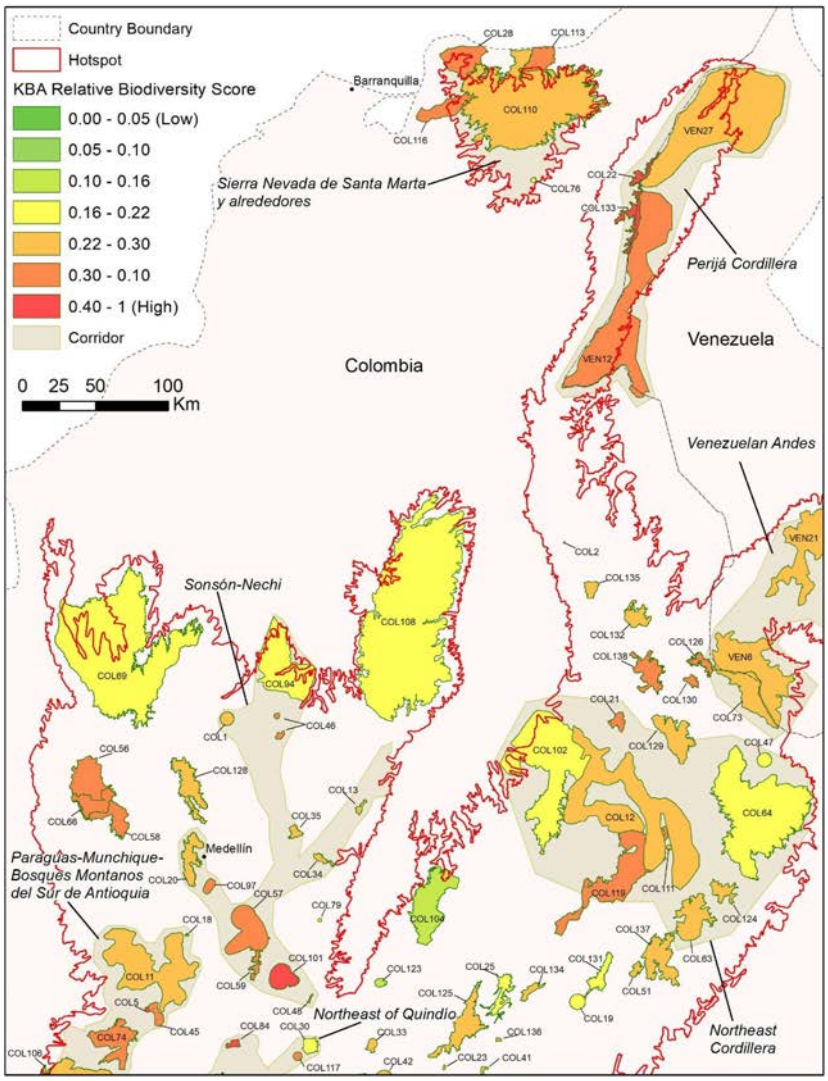


Figure 5.2b KBAs in the Southern Colombian Region of the Tropical Andes Hotspot

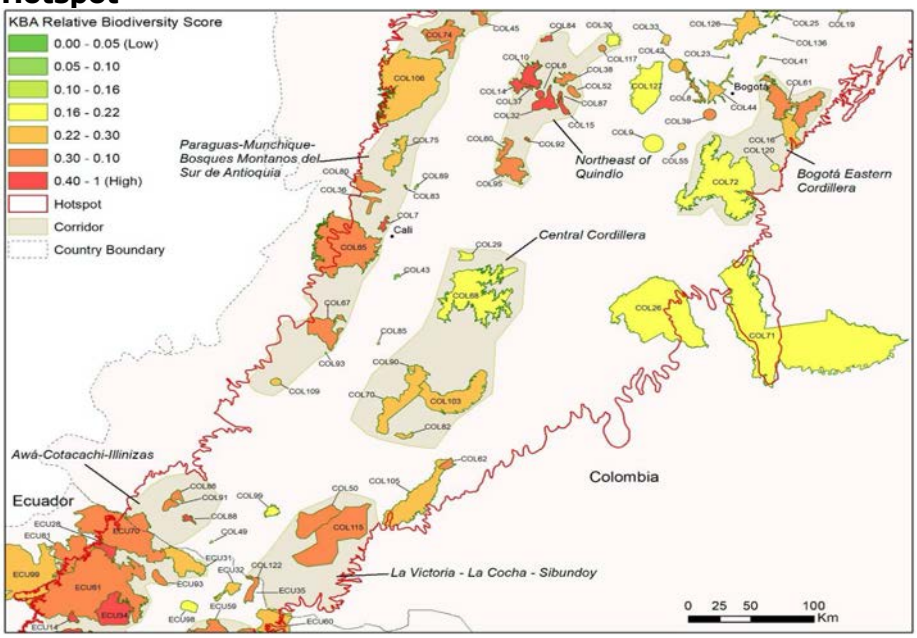


Figure 5.3. KBAs in the Ecuadorian Region of the Tropical Andes Hotspot

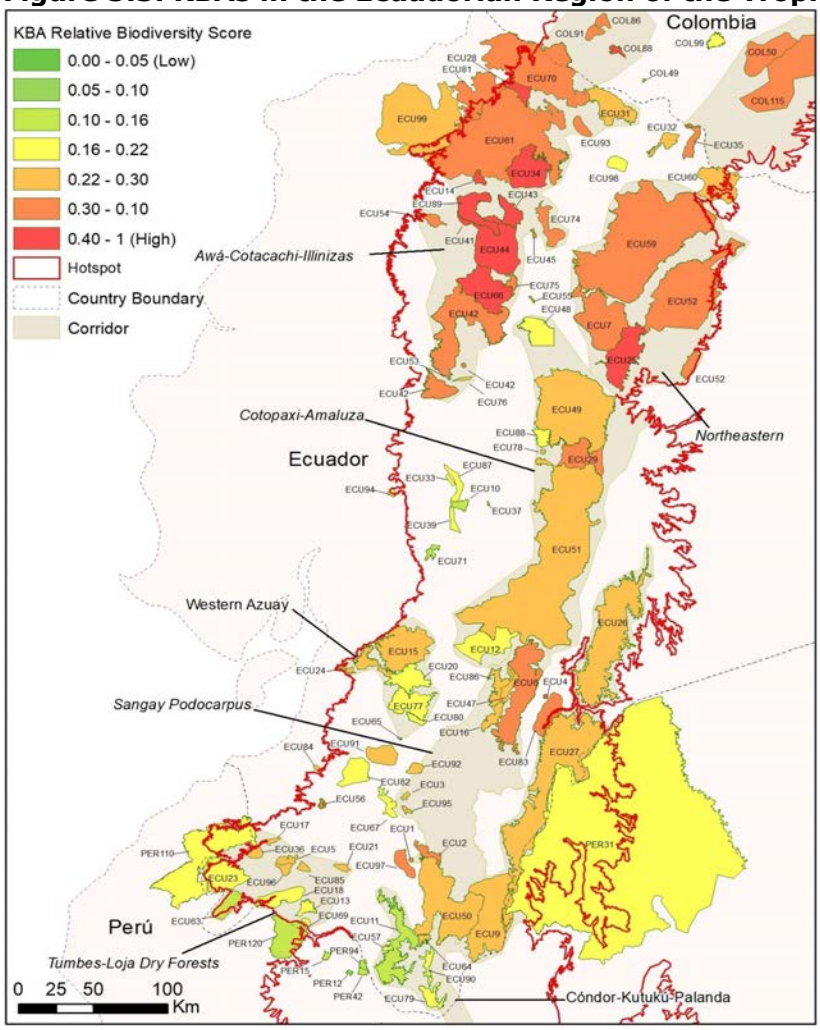


Figure 5.4a. KBAs in the Northern Peruvian Region of the Tropical Andes Hotspot

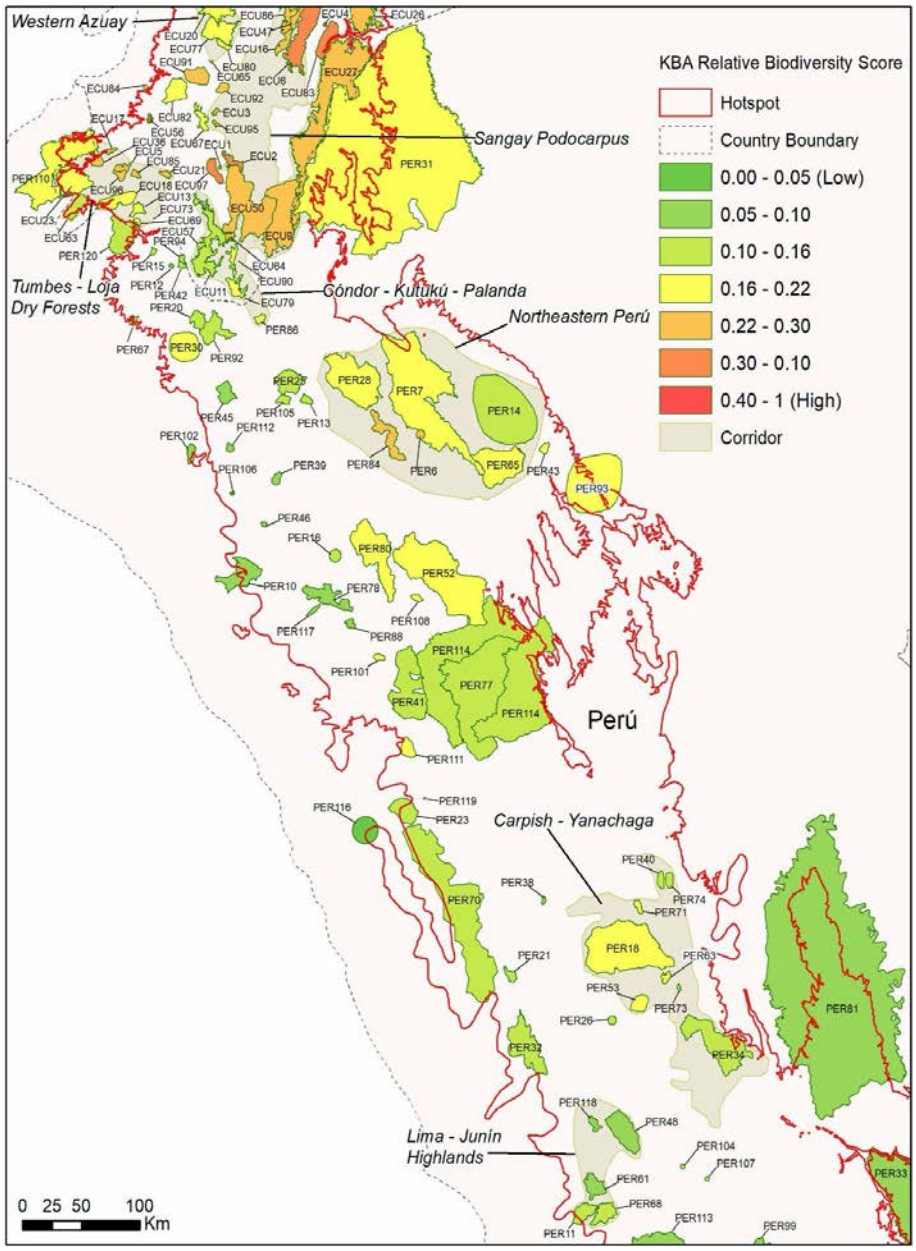


Figure 5.4b. KBAs in the Southern Peruvian Region of the Tropical Andes Hotspot

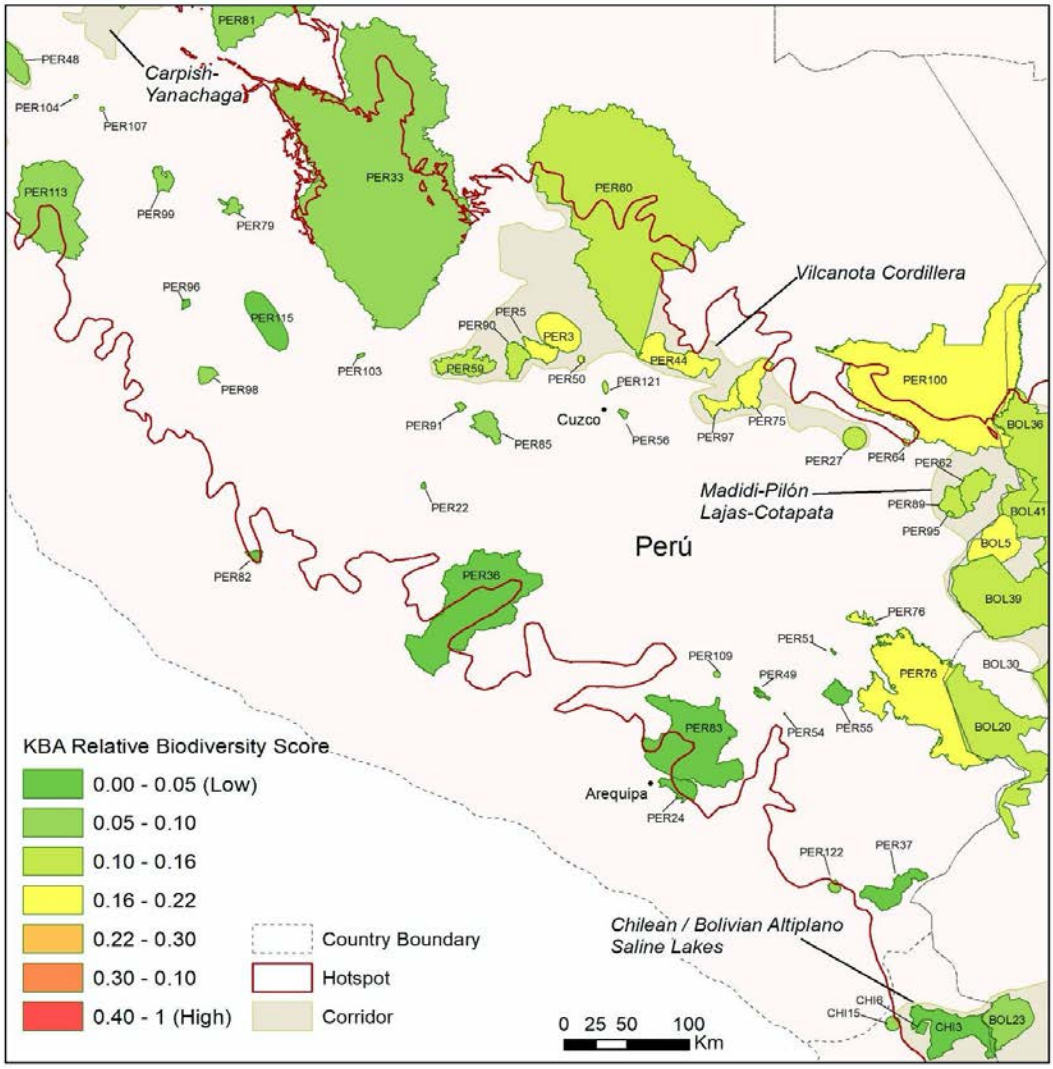


Figure 5.5. KBAs in the Bolivian and Chilean Region of the Tropical Andes Hotspot

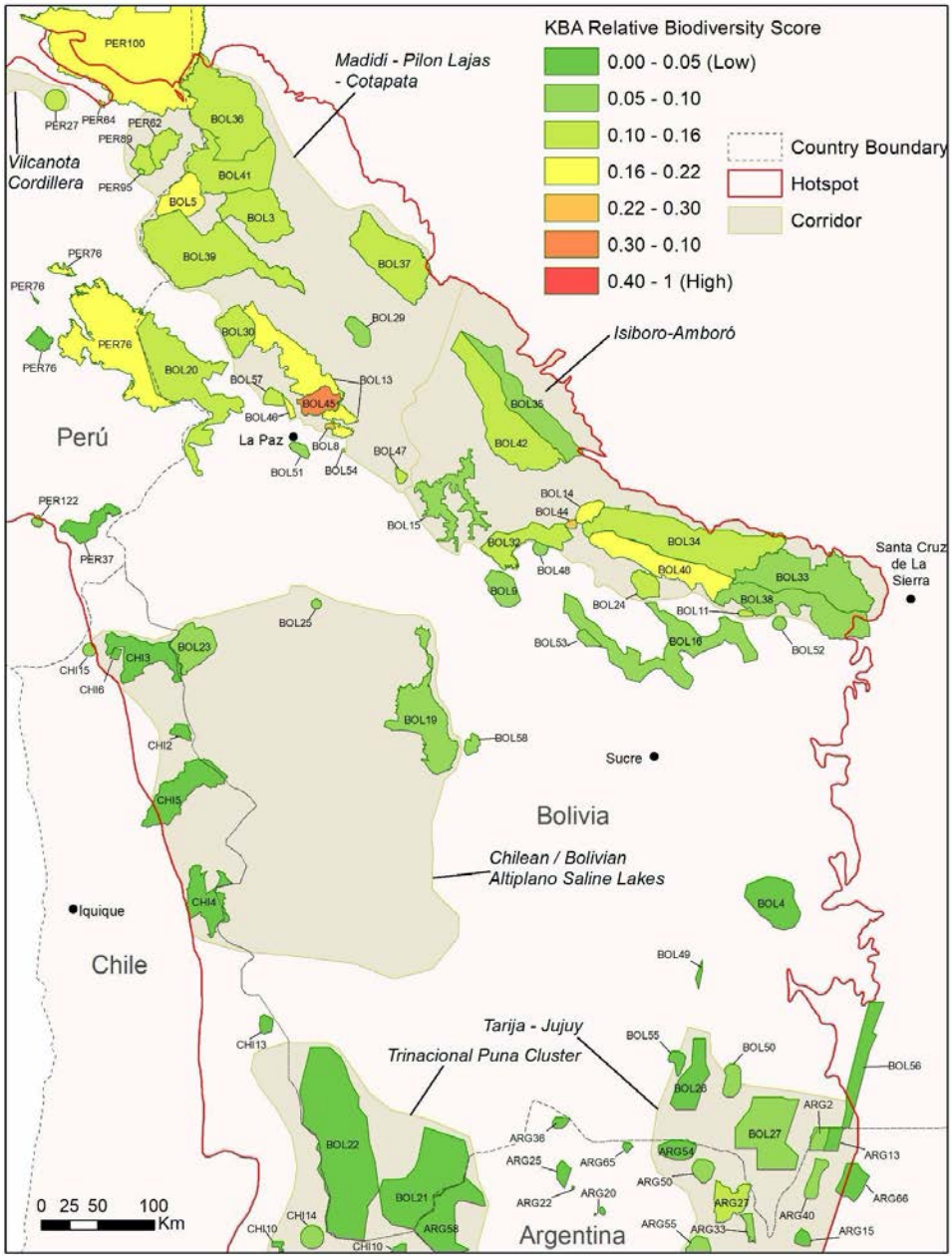
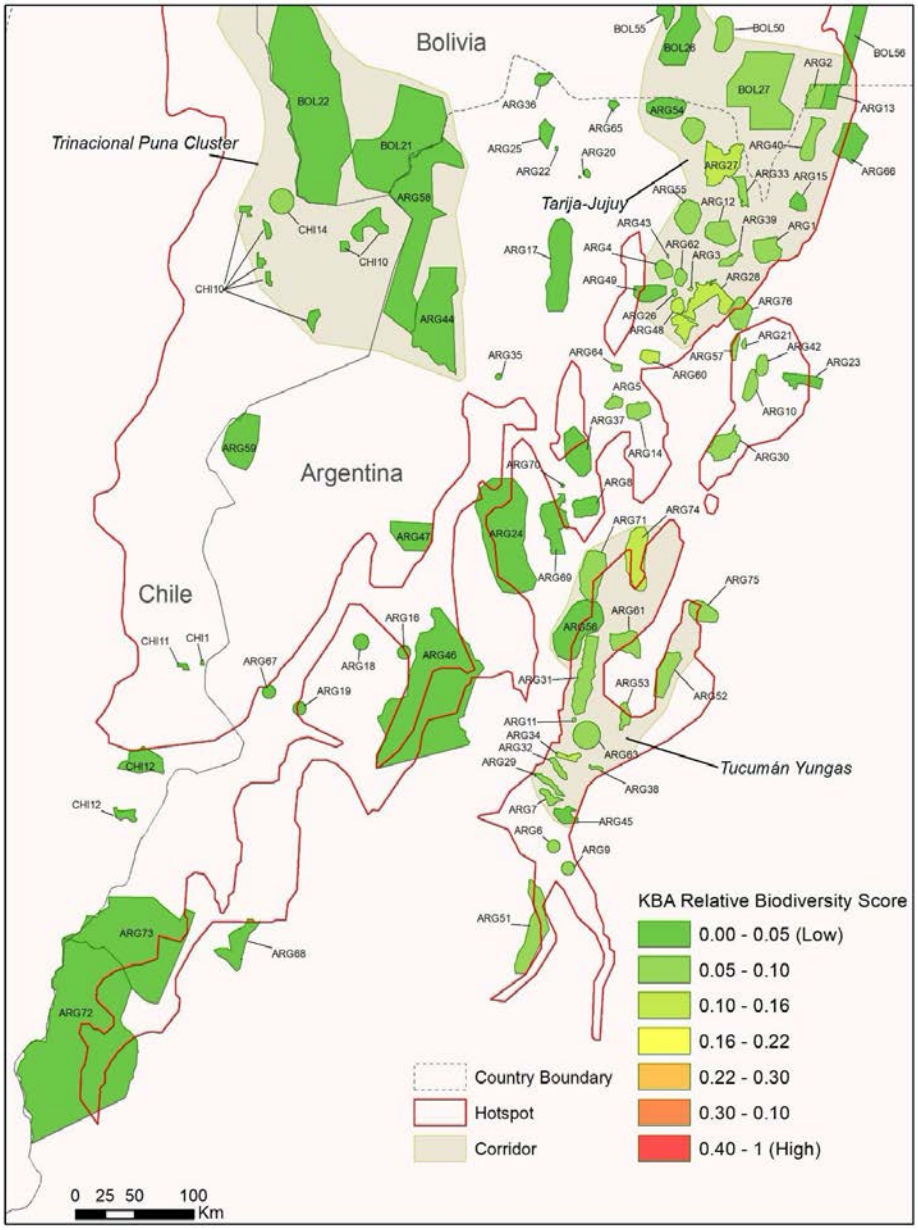


Figure 5.6. KBAs in the Argentine and Chilean Regions of the Tropical Andes Hotspot



Relative Biodiversity Value (RBV)

To determine the relative importance of KBAs in the hotspot, an irreplaceability index was used that assigns values to the hotspot according to the species' range and threat category. The normalized sum of values over the area is what we call the relative biodiversity value (RBV). Figure 5.7 shows a map of relative biodiversity value for the entire hotspot, with an inset showing the 92 KBAs of high threatened biodiversity that were considered from a value as of 0.4. In Ecuador, Abra de Zamora KBA stands out, where 29 amphibian species have been reported, of which 11 are endemic and 11 are new to science.

The KBAs were classified using the RBV natural cut-off method, so that 46 KBAs were identified as very high RBV, 115 high, 114 medium, 114 low and 85 very low. All KBAs

with very high RBV were found in Colombia and Ecuador (Figure 5.8).

Figure 5.7. Relative Biodiversity Value (RBV) of the Tropical Andes Hotspot

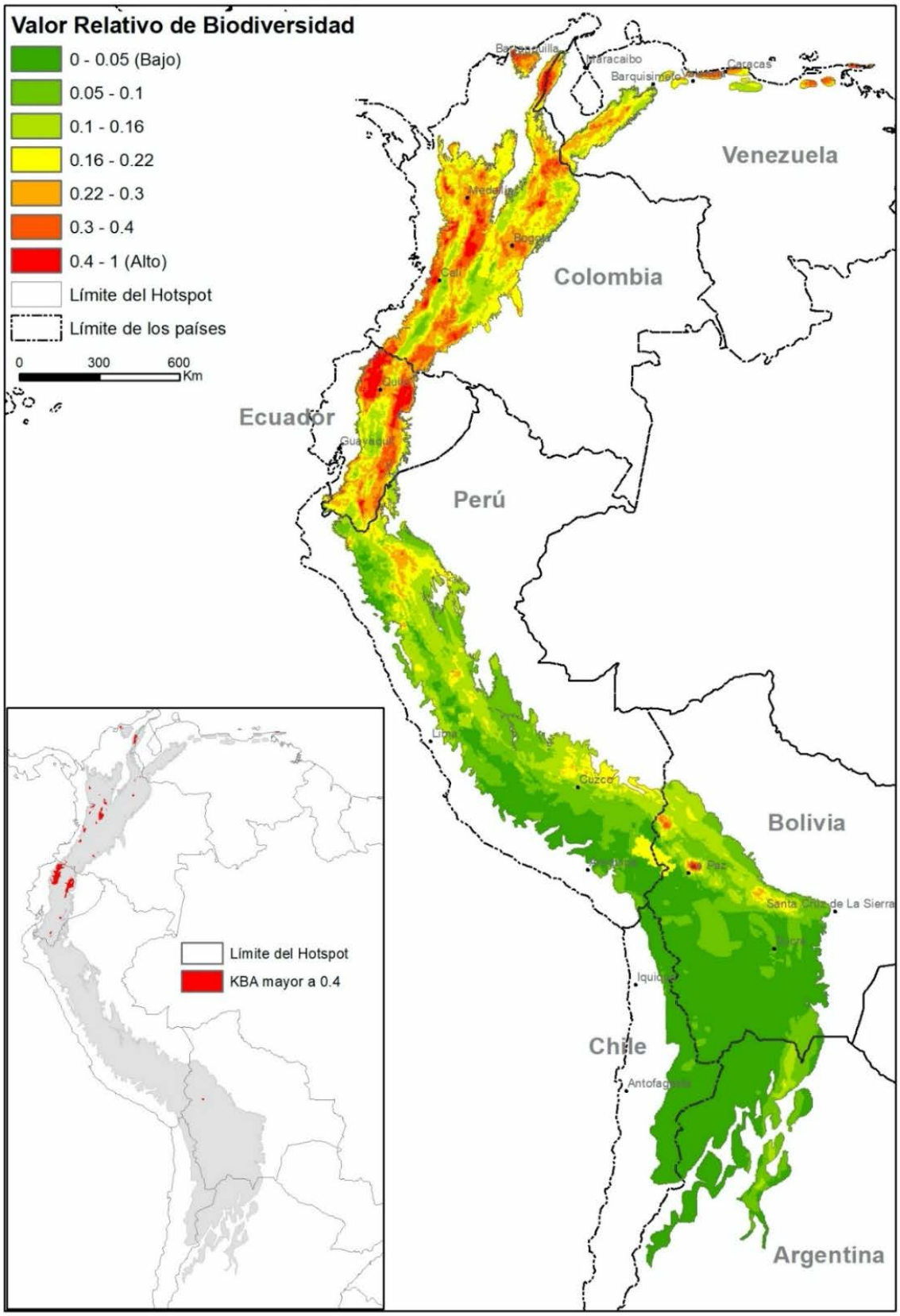
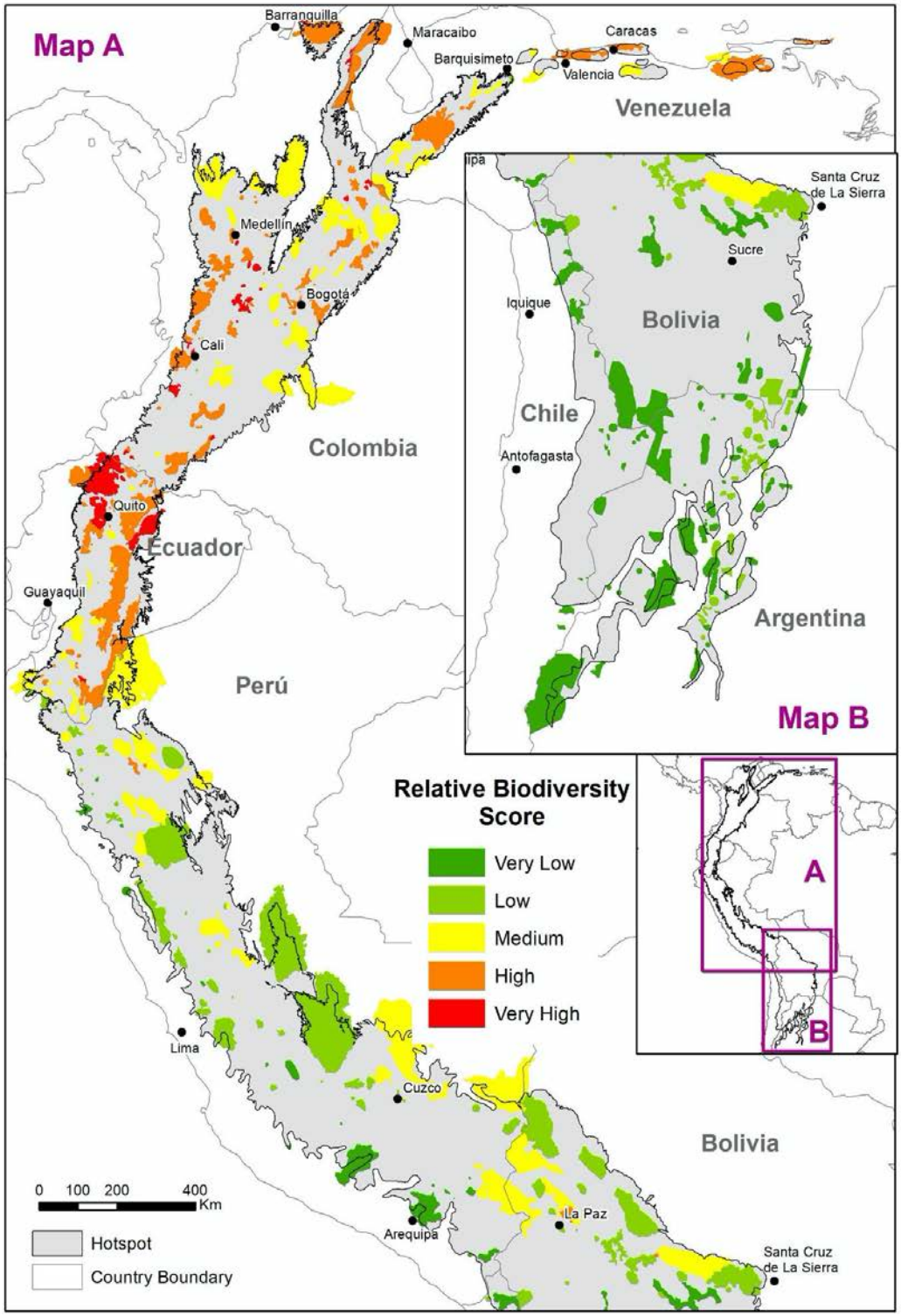


Figure 5.8. Relative Biodiversity Value (RBV) of KBAs in the Tropical Andes Hotspot



Legal Protection of KBAs

Andean governments, local communities, international and national donors, private landowners and conservationists have invested enormous efforts over the previous decades in establishing new protected areas in the hotspot. Throughout the hotspot, the

profile identifies 2,960 protected areas that have international, national or subnational, public and private designations established for biodiversity conservation and natural resource management. These sites cover 43 million hectares, or 27 percent of the hotspot's surface area, an area larger than the size of Germany.

The protection status of KBAs is variable. About 63 percent of the area under KBA status overlaps with a protected area, leaving the remaining 37 percent unprotected. Of the 474 KBAs in the hotspot, about 42 percent, or 199 sites, have at least 80 percent of their territory under some form of protection. These 199 KBAs include 75 sites of high and very high relative biodiversity value and 34 are Alliance for Zero Extinction (AZE) sites.

Ecosystem Services and Functions of the KBAs

Andean KBAs provide vital ecosystem services and functions to human populations at multiple levels, supplying drinking water to small villages and major cities and agricultural lands. At the same time, they store carbon in vast tropical forests that help regulate global carbon budgets. The ecosystem services and functions of KBAs of domestic and agricultural water supply and carbon storage should be highlighted.

Water Availability

To determine the importance of sites in their capacity to provide water in the Tropical Andes Hotspot, KBAs were ranked according to total water availability. Of the 474 KBAs assessed, 5 KBAs were rated with “very high” water availability, and 15 were rated “high”. The KBAs with very high water availability are located on the eastern slopes of the Andes Cordillera in Peru, possibly due to their large area. High value KBAs are scattered in the Andes Mountains, mostly in Colombia, Ecuador and Bolivia. In contrast, all KBAs in Argentina and Chile are classified as low availability.

Carbon Storage

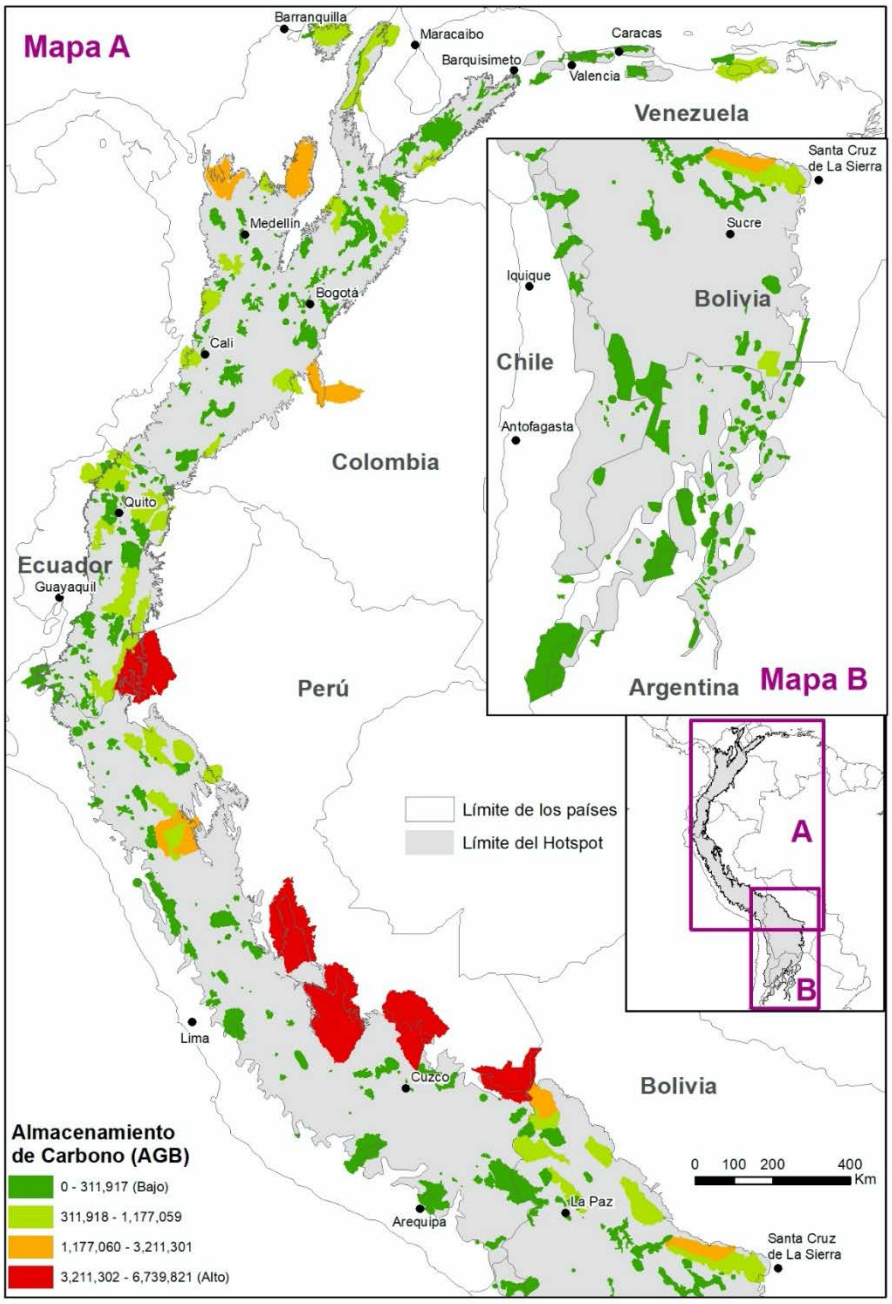
The Tropical Andes KBAs collectively store 7,345 million metric tons of carbon (t C) in their plant biomass, which is equivalent to the amount of carbon emitted by 5,278 million passenger vehicles driven in a year, a volume that slightly exceeds Mexico's carbon budget to comply with the Paris Agreement. The sum of carbon stored in each KBA varies substantially depending on its vegetation, whereby KBAs dominated by high altitude páramos, puna grasslands or shrublands have a lower permanent biomass of carbon per unit area than KBAs dominated by high canopy forests. Peru's KBAs store the largest amount of carbon of all Andean countries, 3,358 million tC, or 46 percent of the total carbon stored in the hotspot's KBAs. KBAs in Colombia, Ecuador, Peru and Bolivia average more than 150 tC ha-1, reflecting the dominance of forest habitats in these areas. Carbon storage is lower in Chile and Argentina, where KBAs are characterized more by shrublands and deserts than forests (Figure 5.9).

Corridor Outcomes

The ecosystem profile establishes 28 corridors that are designed to achieve three objectives: provide connectivity between KBAs with similar species, species irreplaceability, and similar habitats; group KBAs that supply ecosystem services to the same population centers; and address the needs of species with wide ranges at the landscape level. Because much of the hotspot has been transformed into urban and

agricultural landscapes, the delineation of corridors mostly conforms to mountain ranges and KBAs along the eastern and western slopes. These corridors correspond to those identified in the previous profile, but this update considered certain modifications to the corridors suggested by experts who contributed to the gathering of related information on both species and ecosystems, as well as the common socio-political context of these landscapes that allows for the deployment of coherent and coordinated conservation strategies. The 28 corridors cover 52.5 million hectares, equivalent to 33 percent of the hotspot. Of the 474 KBAs in the hotspot, 299 fall within a corridor, including the vast majority of the highest RBV KBAs for each country. Nineteen of the corridors are restricted to a single country, eight are binational, and one is tri-national.

Figure 5.9. Estimated Carbon Sequestration in KBAs in the Tropical Andes Hotspot



6. THREATS TO BIODIVERSITY IN THE HOTSPOT

In the last 50 years, the countries that form part of the hotspot have doubled their population, which in many cases is concentrated in the Andean region. This is the main reason why the region today faces strong pressures that generate environmental and social impacts, in addition to the presence of a growing road infrastructure that offers permanent access to agricultural centers, processing plants, local and regional markets and airports. As a result, the fertile agricultural soils of the Ecuadorian, Colombian and northern Peruvian Andes are to some extent covered by pastures for dairy cattle and crops for domestic and commercial consumption or export. As a consequence, the natural vegetation of the inter-Andean valleys, slopes and adjacent high plateaus has been lost, as has the associated biological richness and diversity, especially in the northern Andes.

The ecosystem profile quantifies the threats facing the hotspot during the period 2010-2020, taking into account spatial information on eight factors: livestock, agriculture, main roads, urban areas, hydrography, mining concessions, airports and hydrocarbon concessions. The model shows higher levels of impacts for the sections located in Colombia and Ecuador, as well as in northern and central Peru, while in the southern Andes of Peru, Bolivia, Chile and Argentina, due to their adverse climate and higher altitude, agricultural use is reduced and the concentration of human populations is lower (Figure 6.1). The road network stands out with a high impact index, since the construction of roads alone implies a transformation of the territory, but also catalyzes other threats such as mining, agriculture, livestock and the establishment of population centers.

Frequency of Threats in KBAs and Corridors

The profile analyzes the comparative vulnerability of the KBAs and characterizes their threats based on the opinion of 146 experts (Table 6.1). The results indicate that the major threats to the KBAs and hotspot corridors are climate change, mining, deforestation, agricultural encroachment, illegal land occupation and migration, hunting, trafficking of flora or fauna, and illegal logging. Minor threats include illegal crops (coca, poppy, etc.), insecurity or violence, industrial agriculture, firewood collection and disorganized tourism.

Deforestation is one of the main drivers of biodiversity loss and is propelled by other threats such as the advance of agriculture, cattle ranching or human colonization. In the period 2001 to 2019, 3.9 million hectares of forest were lost in the hotspot. Colombia is the largest contributor to total deforestation in the hotspot (37 percent; 79,000 hectares per year), followed by Peru (29 percent; 62,000 hectares per year) and Bolivia (15 percent; 32,000 hectares per year). At the KBA level, the percentages of deforested area in the period 2010 to 2019 ranged from 22.5 to 0 percent.

Mining was identified as a major threat in both the previous profile and the present profile so an analysis was conducted to assess its impact on the hotspot and KBAs. The results indicate that 11 percent (17.2 million hectares) of the total area of the hotspot is under mining concessions, of which 2.2 million hectares overlap with some KBAs, equivalent to 7 percent of the total area of KBAs within the hotspot. In total, 266 KBAs have some percentage of their area overlapping with a mining concession, of which 10 KBAs are in Argentina, 33 in Bolivia, 75 in Colombia, 65 in Ecuador, 81 in Peru and 2 in Venezuela. The percentage affected ranges from 0.00012 percent to 100 percent. These figures represent an underestimate as they do not take into account illegal mining, which has a strong presence in almost the entire hotspot (Figure 6.2).

Figure 6.1. Landscape Impacts in the Tropical Andes Hotspot

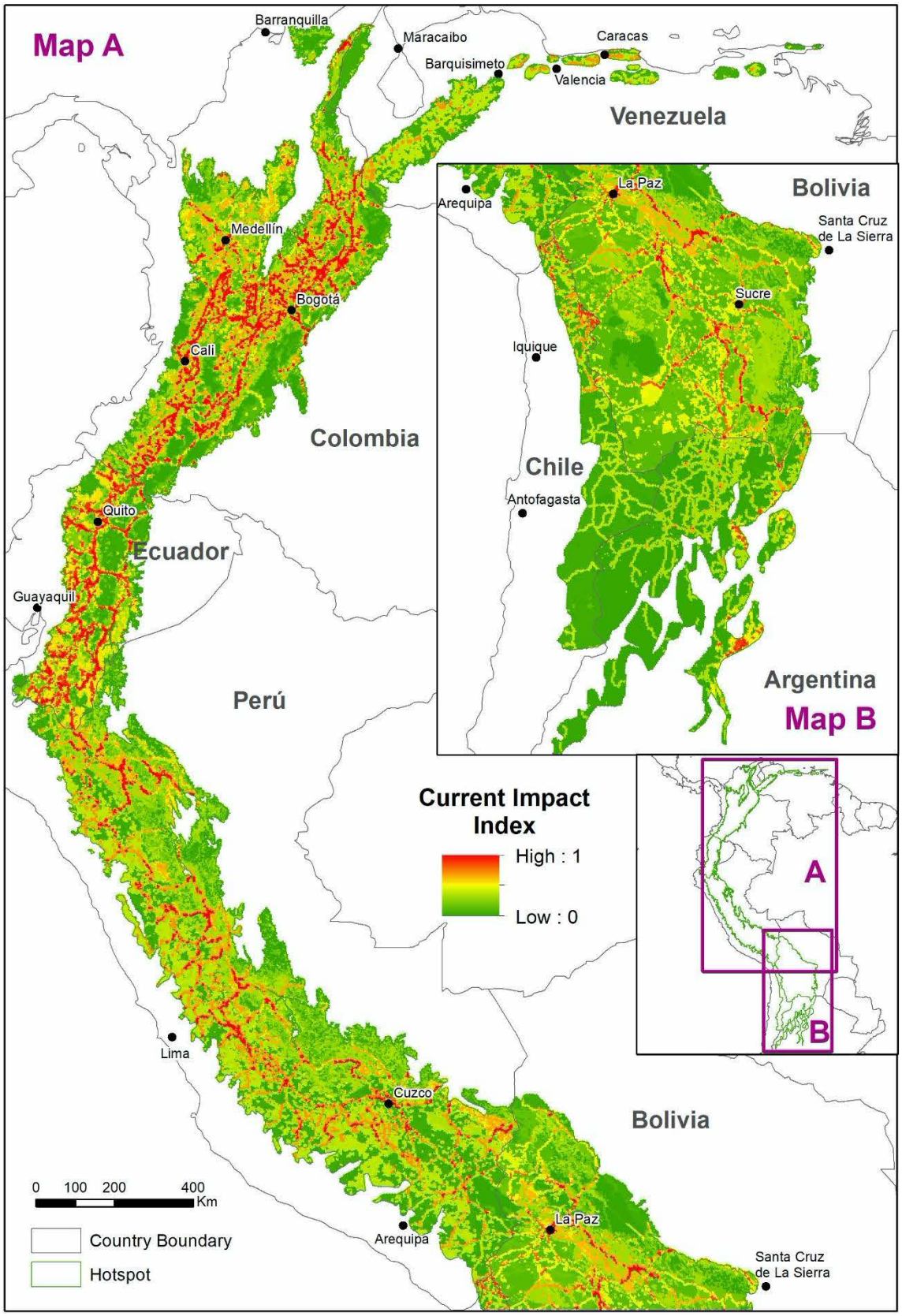


Table 6.1 Update of the Prevalence of Threats in KBAs and Corridors by Country according to the Opinion of 146 Experts

Threat category	Argentina	Bolivia	Chile	Colombia	Ecuador	Peru	Venezuela	Relative importance of threats
Climate change								22
Mining								22
Deforestation								21
Agricultural encroachment								21
Illegal occupancy and insecure land rights								20
Hunting and wildlife trafficking								20
Illegal logging								20
Colonization								19
Infrastructure (roads and dams)								19
Livestock grazing								19
Urban expansion								18
Illegal crops								17
Insecurity and violence								17
Industrial agriculture								16
Firewood collection								15
Unorganized or expanding tourism								15

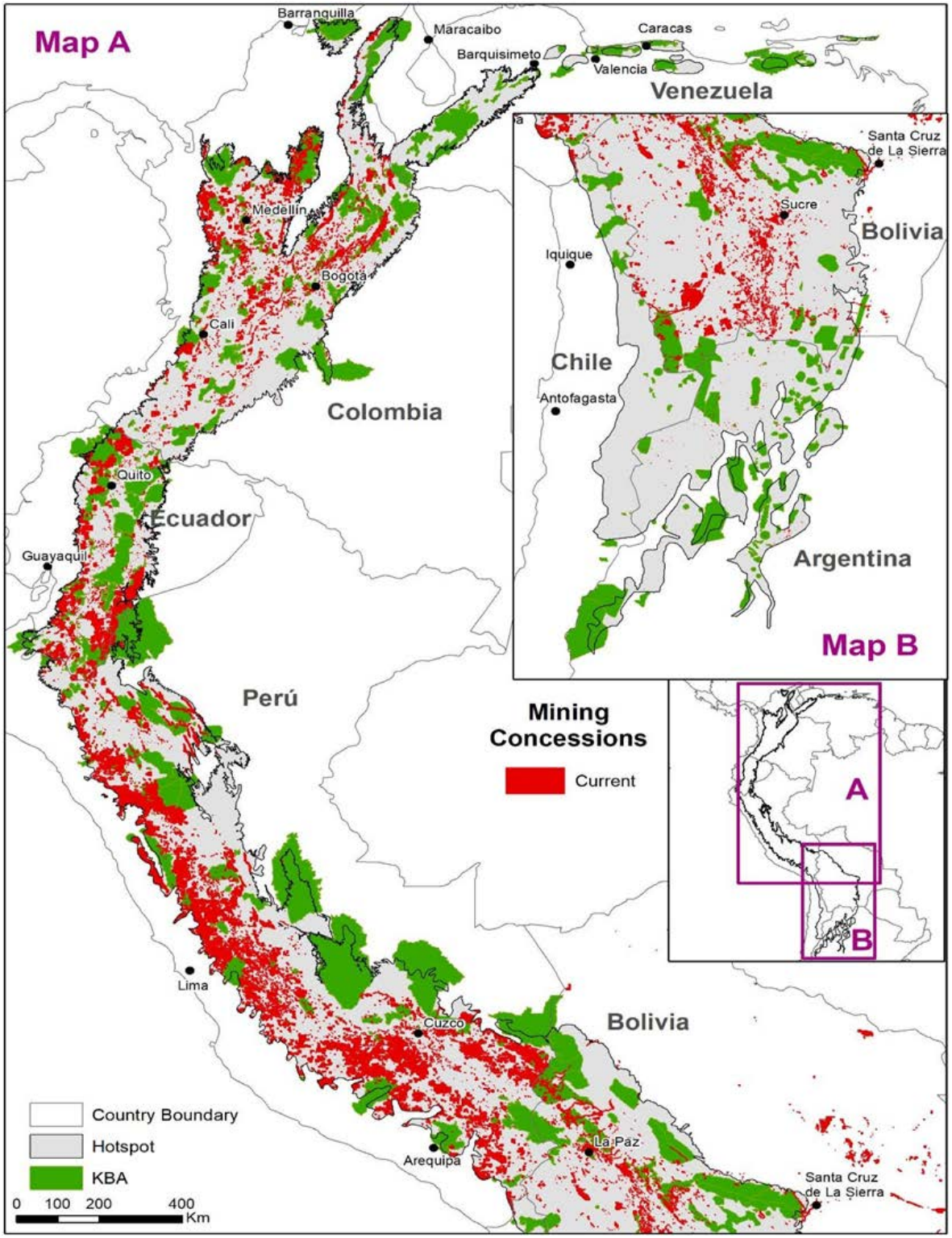
Source: National Consultation Surveys, 2020. *Purple is of very high importance; red is of high importance; orange is of medium importance; and yellow is of low importance.

Illegal hunting and wildlife trafficking is another major threat to the hotspot's exuberant biodiversity. All four national workshops identified KBAs suffering from this problem, including those that are protected areas. The COVID-19 pandemic has highlighted the importance of this threat, not only to wildlife, but also to human health. The implementation and coordination of actions, such as strengthening the capacities of local authorities and CSOs related to the issue, improving the understanding of the dynamics of wildlife trafficking and incorporating society in educational processes on the issue, will contribute to strengthening actions for the reduction of wildlife trafficking in the region, in order to prevent future negative impacts on the health and welfare of people, the economy and ecosystems.

Similarly, the COVID-19 pandemic has exacerbated the hotspot's traditional threats, such as mining and timber exploitation, mainly due to the lack of control and

surveillance in protected areas. This situation is expected to worsen due to the economic crisis caused by the pandemic.

Figure 6.2. Distribution of Mining Concessions in the Tropical Andes Hotspot



7. SOCIOECONOMIC CONTEXT OF THE HOTSPOT

The ecosystem profile estimates that about 59.7 million people live in the Tropical Andes Hotspot and many millions more outside the hotspot depend on its environmental services and functions. Colombians make up 50 percent of the hotspot's inhabitants. Nearly two-thirds of all Colombians (29.8 million people) and more than half of all Bolivians (6.1 million) reside in the hotspot, as do about one-third of Ecuadorians (7.3 million) and Peruvians (9.3 million). Fifteen percent of Venezuelans (5.1 million), 4 percent of Argentines (2 million) and 0.8 percent of Chileans (160,000) live within the hotspot.

The Andes are characterized by their great cultural diversity. Populated mainly by Spanish-speaking mestizos, more than 50 indigenous groups are found in the Andes. The indigenous population in the seven Andean countries constitutes 10 percent of the total, but their territories occupy at least 21 percent of the hotspot's area. Afro-descendants also contribute to the multiethnic composition of the hotspot, although they are more abundant in the coastal regions of the Andean countries. Bolivia is the country with the highest percentage of indigenous population (41.5 percent of its population), while only 2 percent of Argentines recognize themselves as indigenous.

In recent decades, all Andean countries have experienced a marked trend of rural-to-urban migration and, to a lesser degree, rural-to-rural migration. The hotspot contains at least 29 cities of more than 200,000 inhabitants, including the capital cities of Caracas, Bogota, Quito and Sucre, which together account for 58.2 percent of the hotspot's population. The rural population has experienced a negative growth rate in all countries except Bolivia. Major cities outside the hotspot, such as Lima, Guayaquil, Barranquilla or Santa Cruz, depend on water emanating from the hotspot to supply their large populations.

Although income redistribution has improved in the region since 1990, some countries are among the most unequal in the world, both in terms of income and access to services. In the hotspot countries, income inequality was lower in 2018 compared to 2000. Bolivia has reduced inequality the most. Within the hotspot, there are large disparities in the distribution of wealth and human well-being. Poverty reduction measures have resulted in an increase in the middle class and its consumption capacity. Even so, the national poverty rate ranges from 16.8 percent in Peru to 33.2 percent in Bolivia, which in rural areas rises to 33.8 percent in Ecuador and 55.5 percent in Bolivia as extreme values. Unfortunately, the economic downturn brought about by the pandemic is reversing progress of past decades in poverty eradication.

In rural areas, especially in remote areas where KBAs are typically located, poverty and inequality are more extreme. People living in these areas have limited or no access to basic services and are located at long distances from markets, secondary schools and health clinics. This situation makes conservation actions more difficult.

Economic Trends

The economic slowdown in the region, which dates back to 2015 due to the fall of commodity prices, suffered a severe blow in 2020 as a result of COVID-19. For South American countries as a whole, in 2020 ECLAC projects an average drop in GDP of 7.7 percent due to the effect of the pandemic. In 2020, the economy contracted by 30.0 percent in Venezuela, 12.9 percent in Peru, 10.5 percent in Argentina, 9.0 percent in Ecuador, 8.0 percent in Bolivia, 7.0 percent in Colombia and 6.0 percent in Chile.

Until 40 to 50 years ago, all Andean countries had economies based primarily on natural resources, including agriculture, forestry, and fisheries, which continue to be important today. All Andean countries experienced major economic growth in the 1990s with a marked shift towards the export of non-renewable resources, causing great concern due to their social and environmental impacts.

Agriculture and Forestry

Agriculture is an important economic component in all hotspot countries. The sector contributed 7.6 percent of the Andean countries' GDP in 2017 and accounted for approximately 22 percent of jobs in the region. The agriculture sector (including livestock and forestry) accounts for one of the largest contributions to GDP in Ecuador (10.6 percent), Bolivia (10.5 percent), and Argentina (7.3 percent).

Most remaining natural forests with forest species with high commercial value occur in the most productive Amazonian regions (Venezuela, Colombia, Ecuador, Peru and Bolivia) and the Chocó (Colombia and Ecuador) and, to a lesser extent, the humid temperate forests (Chile). For this reason, most commercial logging operations in these countries operate outside the Tropical Andes Hotspot. In the hotspot, high levels of informality and unsustainable forestry practices persist, usually resulting in forest degradation that affects virtually all KBAs with forests between 500 and 2,000 m above sea level.

Extractive Industries

Non-renewable resource extraction activities, particularly hydrocarbons (e.g., coal, crude oil and natural gas) and mining, are important economic sectors in all hotspot countries. The Andean region is home to major reserves. Venezuela is the largest oil producer with 1.5 million barrels per day and ranks 13th in the world. Chile remains by far the world's largest copper producer, followed by Peru. In 2019, Ecuador reported the discovery of a major mineral deposit in the hotspot with great potential for gold, copper and silver. Due to its size, this new deposit would be among the largest in the world. Global lithium resources are dominated by Bolivia. Gold mining has negative environmental impacts or threatens KBAs in all hotspot countries, as all have significant reserves of this mineral. Peru is among the top 10 producers in the world. The explosive growth of gold mining has been driven by the increase in gold prices and exacerbated by the COVID-19 pandemic, where the price per ounce of gold surpassed $2,000, an all-time high. This situation has led to an extraordinary growth in illegal mining, which is well known to ignore basic social and environmental safeguards.

Tourism

The performance of the tourism sector has been variable in most hotspot countries, with increases between 2010 and 2018 of 11.1 percent and 9.6 percent in Argentina and Peru, to declines of 21.1 percent in Chile or 34 percent in Venezuela in this time period. The signing of the peace agreements in Colombia allowed for a moderate but sustained increase in the flow of tourists, including in protected areas. The tourist offerings are varied: bird watching, nature tourism, rural tourism, adventure, cultural and extreme sports. However, COVID-19 caused a dramatic decrease in the number of visitors. In Argentina and Colombia, for example, there was a 99 percent decrease in arrivals in the first half of 2020. However, as the pandemic ends, the sector is expected to have a strong recovery, requiring tourism ventures to adopt biosecurity measures.

8. POLITICAL CONTEXT OF THE HOTSPOT

The governments of the hotspot countries represent a diverse spectrum of political and economic systems and visions. Venezuela, Ecuador, Bolivia and Argentina have focused on increasing state control over key sectors, while Colombia, Peru and Chile have emphasized private investment and the market economy. Despite the political diversity of the region's governments, all Andean countries are heavily dependent on exporting natural resource and agricultural products as the engine of economic growth. Starting in 2015, with the problems derived from the instability of raw material prices such as gas, oil, copper and agricultural export products, the economic situation of the countries deteriorated between 2018 and 2019, and become acute in 2020 with the COVID-19 pandemic.

Another aspect that the hotspot countries have in common is their chronic political instability. In one week in November 2020 Peru had three presidents, the same as Bolivia between November 2019 and November 2021.

Violence against environmental leaders has increased in the hotspot countries, mainly due to threats coming from illegal mining, deforestation, or drug trafficking. Sixty-four environmental defenders were killed in Colombia in 2019, the highest number globally. Far from being solved, the problem persisted in 2020 and 2021 in both Colombia and Peru.

Biodiversity Financing Policies

The seven hotspot countries show a clear commitment to biodiversity conservation. To this end, they have developed a variety of mechanisms and instruments for financing the conservation and sustainable use of biodiversity. The region, with emphasis on Colombia, Ecuador, Peru and Chile, has a robust catalog of financial solutions adapted to national circumstances, which are being applied by the countries to close identified financial gaps and meet national biodiversity conservation objectives.

Financing strategies for climate change management developed in the hotspot countries, as part of the fulfillment of their Nationally Determined Contributions (NDCs) under the Paris Agreement, are equally important. Thus, climate finance constitutes a new window of opportunity to achieve common objectives between the global agendas pursued by the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).

Protected Area Management

All Andean countries have made significant progress in establishing and consolidating their national protected area systems in recent decades. Although each country has established different categories, standards and nomenclature for their protected areas, most of these are compatible with the categories established by IUCN. All countries have legal frameworks favorable to protected areas and national agencies responsible for conducting conservation policy, regulation, control, and administration of protected area systems. While countries such as Venezuela and Chile have regional agencies and offices in charge of protected areas, the other hotspot countries have a central agency that coordinates the management of subnational protected areas with regional, provincial, or municipal jurisdictions. With some exceptions, mechanisms have been developed throughout the hotspot to incorporate community and civil society participation in conservation actions, with particular importance in Colombia, where the profile

recognizes almost 700 private protected areas in the hotspot. Peru is perhaps the most innovative country and has applied a variety of management instruments, including public land grant mechanisms for long-term conservation managed by private companies, NGOs or communities. All countries have mechanisms for shared management with indigenous and/or local communities where protected areas overlap collective territories.

Regarding the decentralization of environmental management, particularly of conservation policies, some countries have assumed decentralization as part of an administrative process of efficiency and modernization of the State, while others have maintained an orientation towards the construction of citizen power. This difference in approaches is reflected in the institutional design which, in some cases, such as Chile or Colombia, explicitly incorporates the collaboration of consultative councils and other mechanisms for citizen participation in the management of public policies.

Despite the progress, protected areas throughout the region are still vulnerable to development pressures from private and public projects, including road construction, mining, oil, logging and hydro-generation concessions. Although significant progress has been made, the integration of protected areas into territorial development models remains a pending task, as do numerous cases of overlapping tenure and unfinished demarcation processes.

Infrastructure and Development Strategies

All hotspot countries have national development plans that emphasize poverty reduction and economic growth to guide their policies. Although development plans and strategies make reference to the environment, the actual integration of environmental sustainability with other development priorities remains a challenge. From the perspective of regional integration, infrastructure connectivity (roads, border crossings, telecommunications, electric power) within and between countries is still quite poor. Within the Union of South American Nations (UNASUR) framework, South American countries established a series of ministerial-level sectoral councils, one of which is the South American Council for Infrastructure and Planning Council (*Consejo Suramericano de Infraestructura y Planeamiento - COSIPLAN*). Despite the factual dissolution of UNASUR, the countries of the region continue, within their jurisdictions, in the implementation of the main infrastructure projects that were born within the framework of the Integration of Regional Infrastructure in South America (IIRSA by its acronym in Spanish).

For 2017, COSIPLAN's project portfolio recorded a total of 562 projects with an estimated investment of $198.9 million. The portfolio of 147 projects that are part of the Andean and Capricorn axes, which are the ones impacting the hotspot, reached an estimated total investment of $33.795 million. The projects completed in the two axes represent a total investment of $3.948 million that would have been executed up to 2017. These roads affect dozens of KBAs in the hotspot.

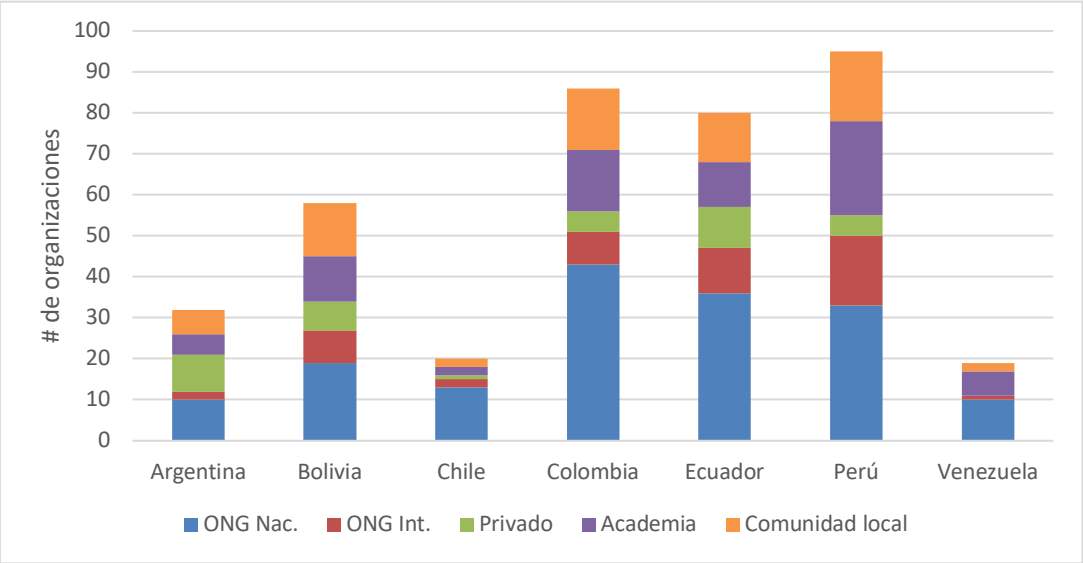
Between 2015 and 2020, Chinese investment in seven strategic sectors in the hotspot countries increased to at least $25.1 billion. This figure is an underestimate and still 40 times higher than the total conservation investment in the hotspot between 2015 and 2019.

9. CIVIL SOCIETY CONTEXT OF THE HOTSPOT

CSOs working on environmental issues have played a prominent role in the countries of the Tropical Andes for decades. In addition to the day-to-day operational difficulties of working in the conservation sector in the hotspot, starting in 2020, NGOs had to deal with a sharp decline in funding opportunities brought on by the COVID-19 pandemic.

The ecosystem profile identifies 390 CSOs contributing to biodiversity conservation in the hotspot, distributed among national NGOs, international NGOs, private universities, and local community-based groups (Figure 9.1). In addition, the profile identified 82 citizen networks and their associations, which were often based in extractive activities, and 60 indigenous organizations.

Figure 9.1. Types of Civil Society Organizations Identified in Hotspot Countries (Total = 390)



All hotspot countries have government agencies in charge of registering CSOs, although there is not necessarily a formal process for monitoring and evaluating their performance. While in Ecuador and Bolivia, CSO registration takes place in institutions dependent on the central government (National Secretariat of Policy Management in Ecuador, Vice-Ministry of Autonomies of the Ministry of the Presidency in Bolivia); in Colombia, registration takes place with the Chamber of Commerce, while in Peru it takes place in the municipalities. Consultations reveal the perception that Chile and Peru are the most favorable for the legal incorporation and registration of CSOs.

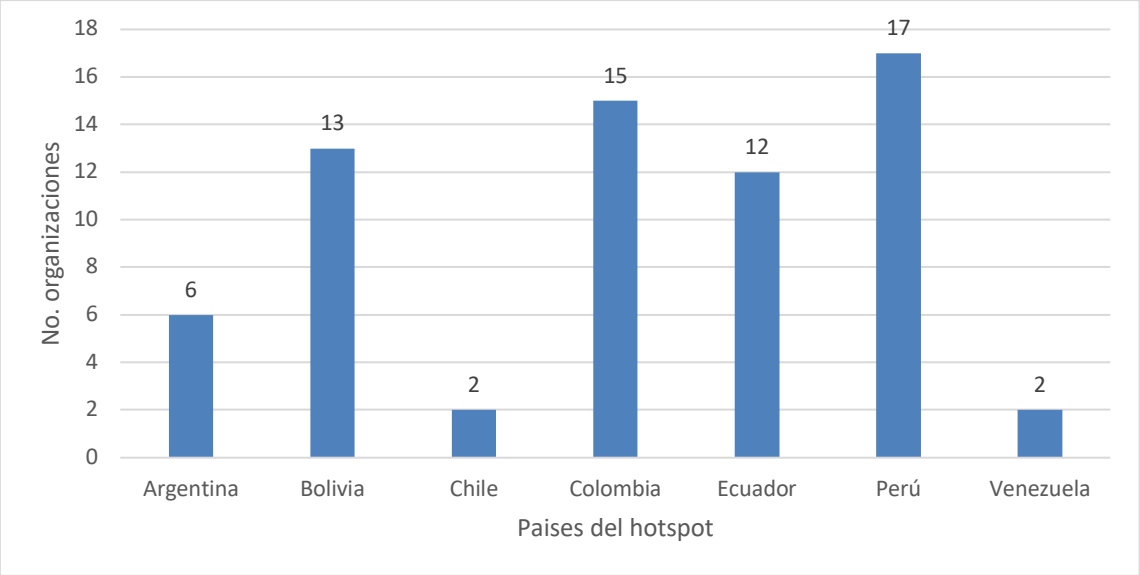
In all hotspot countries, CSO missions and objectives are well aligned with the priorities established in national development and sectoral policy plans. As subnational and local governments strengthen their capacities and gain prominence in conservation efforts, CSOs are required to establish formal mechanisms for collaboration with these subnational public entities. Despite the good progress, additional attention is still needed for CSOs to engage in the design and management of public policies. Consultations reveal that CSOs are not engaged in a meaningful way in policy development in sensitive sectors, such as extractive industries and infrastructure. Colombia shows a markedly unfavorable security environment and guarantees for citizen oversight, while Bolivia and Peru demonstrate somewhat more favorability for CSO engagement, which Ecuador is incipient with respect to CSO engagement.

Indigenous Peoples and Community Organizations

The hotspot is inhabited by some 10 million indigenous people belonging to more than 50 nationalities and occupying at least 21 percent of the hotspot's surface area. The forms of organization of indigenous communities, peoples and nationalities in the hotspot reflect the diversity of cultures, visions, interests and survival strategies. However, interculturality, plurinationality and self-determination continue to be the main axes of the political action of indigenous movements and community-based organizations in the hotspot.

The profile identifies 67 community and indigenous organizations of second and third level working in the hotspot (e.g., federations and confederations) (Figure 9.2). This figure is only referential, as several hundred community-based organizations are located in the hotspot.

Figure 9.2. Number of Community and Indigenous Organizations Identified in the Hotspot



Civil Society Organizations' Capacities

As in the previous profile, most NGOs focus on traditional conservation activities and less on emerging areas, although approaches and methodologies related to climate change management, sustainable production and economic instruments for conservation are beginning to gain ground. The ecosystem profile shows that all countries have a wide variety of NGOs, with sufficient human resources and good to very good institutional capacity. The main gaps relate to financial resources (Table 9.1). In contrast, community-based and indigenous organizations reported insufficient human and financial resources and good to limited institutional capacity. NGOs have strengthened their capacities in recent years, mainly in technical and operational management aspects, as well as in inter-institutional coordination mechanisms. However, there are still capacity gaps related to promoting social dialog towards achievement of negotiated agendas with the public and private sectors. Faced with the so-called "new normal" triggered by the global health crisis, CSOs also note the need to strengthen their capacities in the management of digital platforms, both in technological aspects and in the skills needed to make efficient use of them. A third priority for capacity building is in financial sustainability. While Andean countries have advanced in establishing innovative financial mechanisms, further effort is required to attract investment from the private and finance sectors, and from the international donor community.

Table 9.1 Institutional Capacity of NGOs consulted in the Hotspot Countries

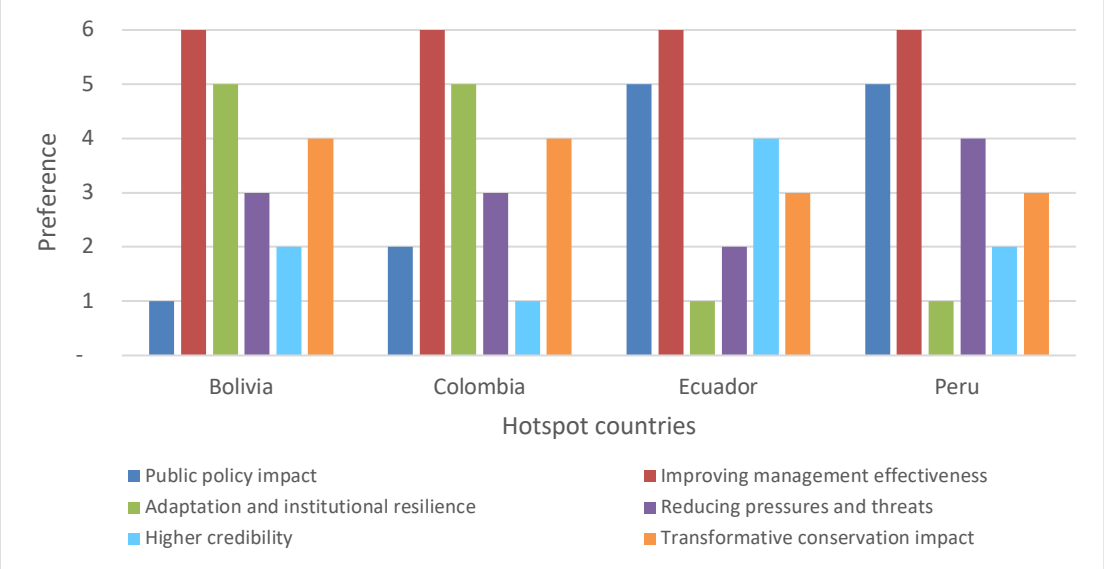
Country	Has Sufficient Human Resources			Has Sufficient Financial Resources			Institutional Capacity		
	Yes	Partial	No	Yes	Partial	No	Very Good	Good	Limited
Argentina									
Bolivia									
Chile									
Colombia									
Ecuador									
Peru									
Venezuela									

Source: 2020 consultation process.

> 60% of people consulte between 20 and 60% of people consulted < 20 % of people consulted

Most CSOs in Peru, Ecuador and Bolivia have a gender policy and thus an explicit institutional mandate to incorporate gender in their projects. In turn, on analyzing how these capacities developed by the CSOs have allowed them to achieve impact objectives, it is observed that all the countries agree that the strengthening processes developed in the last five years, in many cases with the support of CEPF, have made it possible above all to improve the effectiveness of the organizations' management. Secondly, Ecuador and Peru indicate that this strengthening has contributed to CSOs having a greater impact on public policies, while in Colombia and Bolivia, it has allowed them to develop greater capacity for adaptation and institutional resilience in the face of the adverse context in which the organizations have had to operate (Figure 9.3).

Figure 9.3. Impacts of CSO Capacity Building



Note: A value of 6 indicates a high preference, while 1 indicates a low preference of the people who participated in the national consultation workshops

Impact of COVID-19

Financial survival and sustainability are an ever-present concern of all Andean CSOs, which arises from the region's longstanding economic uncertainties. This concern has come to the fore over the last year with the dramatic economic downturn during the pandemic. Stakeholders expect that economic recovery in 2021 will require greater attention to development approaches and capacities to diversify the range of funding sources to increase their resilience.

10. CLIMATE CHANGE ASSESSMENT

The Andes are home to a wide variety of climates that are a product of their rugged topography, their location along the western edge of South America, the influx of waters from the southeastern Pacific, cold in the south and warm in the north, and the continental trade wind system. The combination of varied climates and stable climate shelters has contributed to the high diversity and endemism seen today in the Tropical Andes.

Land surface temperatures have increased throughout the Tropical Andes region since the 1970s, albeit at a slower rate than the global average. Although precipitation has also changed in the Andes, climatologists have so far detected no consistent pattern to the changes.

Projected Impacts of Climate Change on Human Populations and Biodiversity

The Tropical Andes Hotspot stores 314,291,735 tons of irretrievable carbon and is the second most important hotspot in the world for irretrievable carbon. That is, carbon stocks that are potentially vulnerable to release by human activity and, if lost, could not be restored by 2050, the year in which the population needs to reach net zero emissions to avoid an unprecedented climate crisis.

The impacts of climate change are already noticeable in Andean biota. Birds, mammals, reptiles, fish, plants and even insects are susceptible to habitat loss, changes in precipitation, temperature and humidity, and increased water temperature, among other disturbances. The retreat of glacier masses is undoubtedly the most evident change. In the Tropical Andes, the rate of glacier retreat since 1950 has exceeded the global average, with a marked increase after 1970. At this rate, Venezuela will be the first country on the continent to lose all its glaciers.

The ecosystems most vulnerable to climate change, the páramos and cloud forests, are those that have had the relatively shortest history of human intervention. Aquatic systems are also very sensitive to changes in precipitation patterns, as well as to the reduction in runoff caused by a decrease in glacial mass in the Andes.

Human populations are also affected by climate change. The availability of water, whether too much or too little, is a major concern. Higher evaporation rates in lakes and other wetlands are expected due to temperature increases. Similarly, accelerated glacier melt will lead to increased surface runoff and decreased water reserves stored in glacier ice. Changes in the seasonality of the rainy season, floods, droughts, landslides, hailstorms, cold or heat waves are the most widespread meteorological events. In Bolivia, for example, droughts caused the declaration of national emergency in 2016 and 2020. Diseases such as dengue, zika and chikungunya, as well as malaria and yellow fever show a tendency to increase their incidence

in the countries of the region. The increase in global average temperature would extend the breeding area of the *Aedes aegypti* mosquito and thus increase the possibility of more people contracting these diseases. Climate change has been implicated in the spread of fungal diseases in maize, potato, wheat and bean crops in Peru. The vulnerability of crops to disease has led to great concern about the future food supply for Latin America's growing population.

Maintaining the health of terrestrial and aquatic ecosystems is crucial to mitigating climate change, as they act as major greenhouse gas (GHG) sinks, absorbing nearly 50 percent of global emissions. This is particularly relevant for páramos, Andean forests and wetlands, which represent the largest carbon reservoirs in the Tropical Andes. For this reason, strengthening management and declaring new protected areas are excellent strategies for meeting climate change goals.

Bioclimatic diversity is a measure of vulnerability to climate change, so the ecosystem profile assesses a parameter for determining the resilience of hotspot corridors based on the diversity of current climate regimes. Some of the hotspot corridors, mainly in areas of high relative biodiversity value in Colombia and Ecuador, show medium-low diversity, which makes them vulnerable to this phenomenon.

Policy Responses

All countries in the hotspot have joined the United Nations Framework Convention on Climate Change (UNFCCC). One of the agreements signed by them in the context of said convention is the Paris Agreement, which came into force in 2016 and aims to prevent the increase in the planet's average global temperature from exceeding 2°C above pre-industrial levels and also seeks to promote additional efforts that will make it possible for global warming not to exceed 1.5°C. To achieve this, each country has prepared Nationally Determined Contributions (NDCs) that set out measures to reduce GHG emissions (mitigation) and promote actions to increase adaptive capacity, strengthen resilience and reduce vulnerability, as all countries are facing the impacts derived from the increase in global temperature. To emphasize its commitment, Chile chaired COP 25 in December 2019.

Role of Civil Society

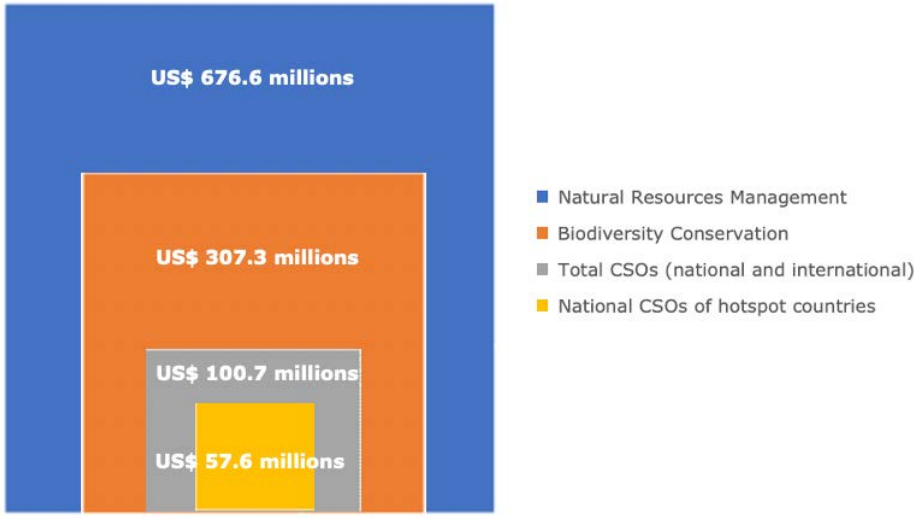
Civil society groups have developed capacities at multiple levels by promoting technical assistance to regional and national governments and local communities in Colombia, Ecuador, Peru and Bolivia. Of particular interest are the multi-stakeholder REDD+ working groups including the REDD+ roundtables in Colombia, Ecuador and Peru. Civil society has also played a particularly important role in the development of offset projects for the voluntary carbon market since the beginning of the forest carbon market, with most REDD+ projects in and outside the hotspot led by local and international NGOs. At the regional level, several CSO networks are actively involved in climate change and REDD+ issues. Despite all these advances, local NGOs in the region expressed difficulties in participating in funding projects related to climate change goals.

11. SUMMARY OF CURRENT INVESTMENT

The ecosystem profile shows that between 2015 and 2019, national governments and international donors channeled $676.6 million through 1,229 natural resources management investments in the Tropical Andes Hotspot. Of this amount, $307.3 million went to activities that had biodiversity conservation as their main objective. Within the context of the large size of the hotspot, these investments appear diluted,

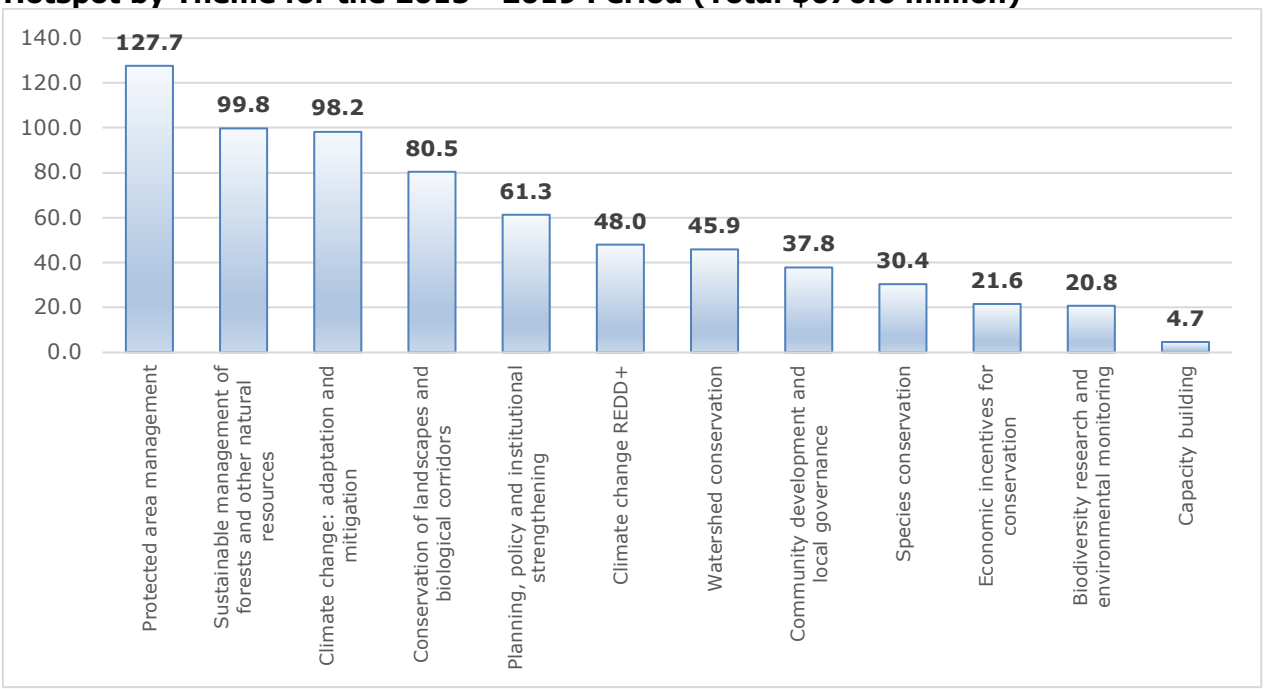
with $0.38 invested per hectare of the hotspot per year in biodiversity conservation. International donor funding for civil society groups amounted to $100.7 million, of which $57.6 million was executed by national CSOs while $43 million was executed by large international CSOs (Figure 11.1).

Figure 11.1. Breakdown of Investment for Natural Resources Management and Biodiversity Conservation in the Hotspot, 2015 -2019



Funding for natural resources management was spread across 12 thematic areas (Figure 11.2). Five thematic areas directly funded biodiversity conservation: protected area management, landscape and biological corridor conservation, climate change-REDD+, species protection, and biodiversity research. Funding for protected areas was not available for all countries, and for those for which information was obtained, it was very disparate. Colombia invested the most, followed by Peru.

Figure 11.2. Investment in Natural Resources Management in the Tropical Andes Hotspot by Theme for the 2015 - 2019 Period (Total $676.6 million)



Sources of Investment

National and subnational governments represented the largest source of funding for natural resources management, contributing almost 37 percent of the total investment, followed by multilateral donors with 22.9 percent and bilateral agencies with 32.8 percent and the private sector (Table 11.1). More than two-thirds (77.6 percent) of all conservation investment were shared by Peru (28.4 percent), Colombia (25.6 percent) and Ecuador (23.7 percent), while the other four countries together received 10.6 percent: Bolivia (10 percent), Venezuela (0.24 percent), Chile (0.02 percent) and Argentina (0.005 percent). Regional or multi-country investments totaling $78.8 constituted the remaining 11.6 percent of total investment.

Table 11.1. Investment in Natural Resources Management by Source of Financing, 2015-2019

Investment sources	Donors	Total Investment ($million)
National governments	Gov'ts Colombia, Peru, Ecuador and Bolivia	249.5 (36.9%)
Bilateral Agencies	Germany, United States, European Union (EU), Switzerland, Norway, Belgium, Japan, France, Denmark, Canada, Australia and Spain.	221.9 (32.8%)
Multilateral Donors	Global Environment Facility (GEF), World Bank (WB), Inter-American Development Bank (IDB), Development Bank (IDB), GEF Small Grants Program (GEF SGP), Green Climate Fund, Critical Ecosystem Partnership Funds (CEPFs), United Nations Development Programme (UNDP), Nordic Development Fund (NDF), Food and Agriculture Organization (FAO), United Nations Environment Programme (UNEP), UN-REDD Programme (UN-REDD), International Tropical Timber Organization (ITTO)	155.0 (22.9%)
Foundations	Moore Foundation, Rainforest Trust, Andes Amazon Fund, John D. and Catherine T. MacArthur Foundation, Tinker Foundation, Rainforest Alliance, Overbrook Foundation, The Conservation Fund, Mohamed bin Zayed, JRS Biodiversity Foundation, The Nature Conservancy, Mohamed bin Zayed, JRS Biodiversity Foundation, Tinker Foundation, World Wildlife Fund, InterAmerican Foundation and others	45.8 (6.8%)
Others	Walt Disney, Verde Canande,	4.4 (0.7%)
Total		676.6

Conservation Endowments

To cover the long-term costs of protected areas and biodiversity conservation, four Andean countries have established conservation endowments. These private or mixed and legally independent donor institutions provided $27.6 million between 2015 and 2019 to public agencies and civil society groups for a wide range of activities within the hotspot. They are often funded through debt swaps or grants. Colombia's two endowments, Fondo Patrimonio and Fondo Acción accounted for 38 percent of all trust funding, followed by Ecuador's Fondo de Inversión Ambiental Sostenible, with 35 percent. Peru and Bolivia's endowments together accounted for the remaining 26 percent of total funding.

Investments in Civil Society

Civil society organizations, particularly local and subnational groups, had limited access to conservation funding and relied on private foundations as an important source of funds. The sum of all direct funding to CSOs in the hotspot amounts to $100.7 million. However, the total value executed by local CSOs is $55.9 million over a five-year period. This figure is a minimum, as it does not include funds directed to civil society through government contracts, subgrants from international NGOs or endowments for conservation. In any case, this estimate is indicative of the limited amount of funds available to local and sub-national groups.

During the ecosystem profile workshops, participants highlighted the challenges that national and local groups routinely face in securing funds from bilateral and multilateral donors. This situation has undoubtedly been exacerbated by the COVID-19 pandemic. Project funding for CSOs for all countries in the hotspot has come almost exclusively from international donors (97.9 percent), while only 2.1 percent has been funded by public agencies, which paradoxically invested the most in the hotspot. CSOs have received most funding from private foundations ($38.1 million, 38.5 percent), followed by multilateral donors ($31.7 million, 32 percent), and bilateral sources ($23.3 million, 23.6 percent). Foundations include the Moore Foundation ($16.9 million) and Rainforest Trust ($10.7 million). CEPF ($7.5 million[1]) and the GEF Small Grants Program ($9.7 million) are the two multilateral donors that directly fund local and national groups.

Gaps and Funding Opportunities

Public sector agencies are important sources of funding for protected areas, and they are highly dependent on international donor funding. In addition, planning documents on the sustainability of protected area systems have shown that in most of them there are still huge gaps for their economic and environmental sustainability. This fact, added to the fact that $33.9 million less has been allocated for this area, would indicate the need to increase funding for protected areas in the hotspot for the next funding period. It should also be noted that there is no in-depth assessment of the efficiency of the investments, in the sense that not only more funding, but also greater efficiency is needed.

Climate change has been identified as one of the greatest threats to the integrity of the Hotspot. Thanks to international cooperation and large climate funding agencies such as GCF, GEF and IKI, funds for climate change adaptation and mitigation increased by $7.1 million over the previous period. For the next funding period, it would be beneficial to enhance the linkage of REDD+ projects to the conservation of landscapes, corridors and protected areas, increasing public investment in these areas. The return of the United States to the Paris Agreement and the firm commitment of the European Union to climate change goals augur an increase in the funds available for this issue, so it is strategic for Andean CSOs to strengthen themselves to be able to manage this type of project.

CSOs had very limited access to conservation funding. National CSOs based in one of the hotspot countries were only able to access $57.6 million for the period 2015 to 2019 (8.1 percent of total investment in the hotspot). However, if the ten largest projects (over $1 million each) are not taken into account, funding for the remaining 400 plus CSOs with 575 projects has been only $36.1 million, which is equivalent to $18,050 per CSO per year. These CSOs, on the other hand, are backbone entities of the territory since they are in direct contact with the local population and know the territory where they are often located. For this reason, it would be of utmost importance to dedicate more funds to financing projects

[1] The amount would be $9.5 million if the execution of projects for the entire Phase II CEPF implementation of period 2015 to 2021 is considered.

implemented by national CSOs based in the hotspot territories.

The extraordinarily threatened biodiversity of the Tropical Andes Hotspot is not matched by the resources needed for its conservation, as only 4.5 percent of the resources allocated to the entire hotspot are earmarked for species-specific conservation projects. CEPF can help reduce this gap.

The $676.6 million funded in the hotspot in the period 2015 to 2019 is a very low amount in relation to large mining or infrastructure projects, which cause multiple impacts on the environment. As a comparison, for 2017, COSIPLAN's portfolio of road infrastructure projects registered a total of 562 projects with an estimated investment of $198 billion.

12. CEPF INVESTMENT NICHE

In light of the urgent needs created and/or exacerbated by the COVID-19 crisis, the CEPF niche for Phase III in the Tropical Andes channels support to civil society organizations to foster the long-term sustainability and resiliency of the results achieved through previous CEPF investments and to replicate the best conservation practices piloted to date to benefit those new sites of exceptional levels of biodiversity that have crucial conservation needs required to ensure their survival.

The niche builds on experience from the first two investment phases by focusing on approaches that have demonstrated success, moving from pilot projects to longer-term interventions, and integrating results more concretely into public policy and private sector practice. It has been developed in consultation with local experts though national and regional consultations. The niche also supports with the recommendations of the long-term vision for of the Tropical Andes hotspot.

Phase III continues CEPF support to four of the seven Andean countries: Colombia, Ecuador, Peru and Bolivia. KBAs in Argentina and Chile are excluded because of their KBAs have significantly lower relatively biodiversity values in comparison to KBAs located in their northern neighbors. KBAs in Venezuela are excluded from consideration due to the challenging operating environment in the country. However, civil society organizations from Argentina, Chile and Venezuela will be invited to participate in virtual capacity building and networking activities to be able to take advantage of CEPF support.

The niche seeks to support those critical enabling conditions required for sustainable and resilient approaches to curb the loss of global biodiversity at three levels: species, sites, and corridors. In the short term, the niche seeks to support local communities to cope with impacts of the pandemic and to stem environmental degradation impacting the priority KBAs by supporting secure land tenure, fostering sustainable livelihoods, and combating wildlife trafficking and hunting. For the long term, pursuing sustainability and resiliency objectives are front and center of the niche, by solidifying the technical and project management capacities of local civil society, diversifying funding streams for conservation over the long term, and institutionalizing conservation outcomes into public and private sector strategies and practice. Strengthening of indigenous and environmental civil society groups is also a high priority. Climate change was identified as the most important threat in the hotspot, and it offers the opportunity for funding future conservation projects. For these reasons, the new niche puts a stronger focus than in previous investments periods on integrating climate change mitigation and adaptation and strengthening alliances with larger private sector companies.

Recognizing that CEPF investment cannot realistically respond to the full range of

conservation issues at play in the hotspot, the CEPF niche focuses on actions where civil society organizations can add the greatest value, and addresses gaps in the overall landscape of donor funding for conservation. The niche calls for working closely with public and private conservation donors to ensure complementarity of funding priorities and to identify opportunities for synergies.

The Phase III investment strategy builds on the significant accomplishments achieved by CEPF and partners to date in the hotspot, while setting a new stage toward greater resiliency and sustainability over the long term. Although ambitious, the investment strategy is realistic. It represents an important opportunity to realize the potential of civil society in the hotspot to help overcome the current challenges of the hotspot, and to make a lasting contribution to the conservation of the Tropical Andes' unique and irreplaceable biodiversity and ecosystem services of global importance. It also presents an opportunity to incorporate climate change mitigation and adaptation.

13. CEPF INVESTMENT STRATEGY

CEPF aims to leave a long-term legacy in which civil society groups can serve as effective stewards and advocates to safeguard the hotspot's globally outstanding biological diversity, while ensuring the health of its vital ecosystem services, its resilience in the face of global climate change, and the welfare of its people. The investment strategy described in this chapter lays out an investment strategy to achieve this ambitious mission over the 2021 to 2026 period.

The strategy is based on the three planning exercises described in Section 2. This strategy reflects the priorities and aspirations of Andean civil society groups in the four countries eligible for funding under Phase III: Colombia, Ecuador, Peru and Bolivia. It is based on a rigorous methodological process to identify conservation outcomes, analysis conducted in chapters 3 to 11, complemented by a participatory process that engaged 264 stakeholders from civil society and government agencies throughout the hotspot. This chapter, therefore, presents CEPF's investment strategy in recognition of these three planning processes.

KBA and Corridor Prioritization

Of the 474 KBAs identified in the hotspot, 52 KBAs have been selected as priorities for funding under the investment strategy (see Table 13.1). These 52 KBAs cover 4,040,579 hectares, which equals 12.4 percent of the 32.5 million hectares that fall within the boundaries of hotspot's KBAs. Collectively, the 52 KBAs represent the sites with the highest biological value, are under the most threat, are in urgent need of management improvement, are safe to work in, are locations where with CSOs are present, and where promising opportunities exist for conservation at a landscape-scale. In addition, they fulfill national conservation priorities, and they demonstrate important opportunities to build on and consolidate previous CEPF investments.

Table 13.1. Priority Conservation Corridors for CEPF Investment in the Tropical Andes Hotspot

Corridor	KBA	KBA area (has)
Paraguas-Munchique/Páramo de Urrao-Tatamá (Colombia)	**Corridor priority KBA area**	**825,103.39**
	Alto de Pisones	1,380.61
	Bosque de San Antonio/Km 18	5,993.74
	Bosques Montanos del Sur de Antioquia	200,574.65
	Enclave Seco del Río Dagua	8,509.33
	La Empalada	10,560.80
	Parque Nacional Natural Farallones de Cali	220,153.48
	Parque Nacional Natural Tatamá	59,414.17
	Parque Natural Regional Páramo del Duende	32,136.29
	Región del Alto Calima	21,917.65
	Serranía de los Paraguas	259,592.27
	Serranía del Pinche	4,870.40
Awá-Cotacachi-Illinizas (Colombia-Ecuador)	**Corridor priority KBA area**	**1,081,787.13**
	Reserva Natural El Pangán	7,726.93
	Reserva Natural La Planada	4,519.83
	Reserva Natural Río Ñambí	8,595.15
	Bosque Protector Los Cedros	5,619.44
	Corredor Awacachi	16,668.80
	Intag-Toisán	63,884.53
	Los Bancos - Milpe	3,316.05
	Maquipucuna-Río Guayllabamba	21,069.58
	Mashpi-Pachijal	39,525.55
	Mindo and Western Foothills of the Pichincha Volcano	94,710.22
	Reserva Ecológica Cotacachi-Cayapas	361,615.47
	Los Illinizas Ecological Reserve and surroundings	169,316.06
	Río Caoní	9,101.37
	Río Toachi-Chiriboga	71,188.00
	Awá Ethnic Territory and surroundings	204,930.15
Northwest (Ecuador)	**Corridor priority KBA area**	**287,301.18**
	Cordillera de Huacamayos-San Isidro-Sierra Azul	169,316.06
	Parque Nacional Sumaco-Napo Galeras	217,629.87
Sangay-Podocarpus (Ecuador)	**Corridor priority KBA area**	**310,691.47**
	1 km west of Loja	672.09
	Abra de Zamora	7,833.86
	Acanamá-Guashapamba-Aguirre	1,994.67
	Alrededores de Amaluza	109,051.44
	Bosque Protector Moya-Molón	12,376.49
	Gualaceo - Limón Indanza	20,315.81
	Montañas de Zapote-Najda	9,699.60
	Parque Nacional Podocarpus	142,945.61

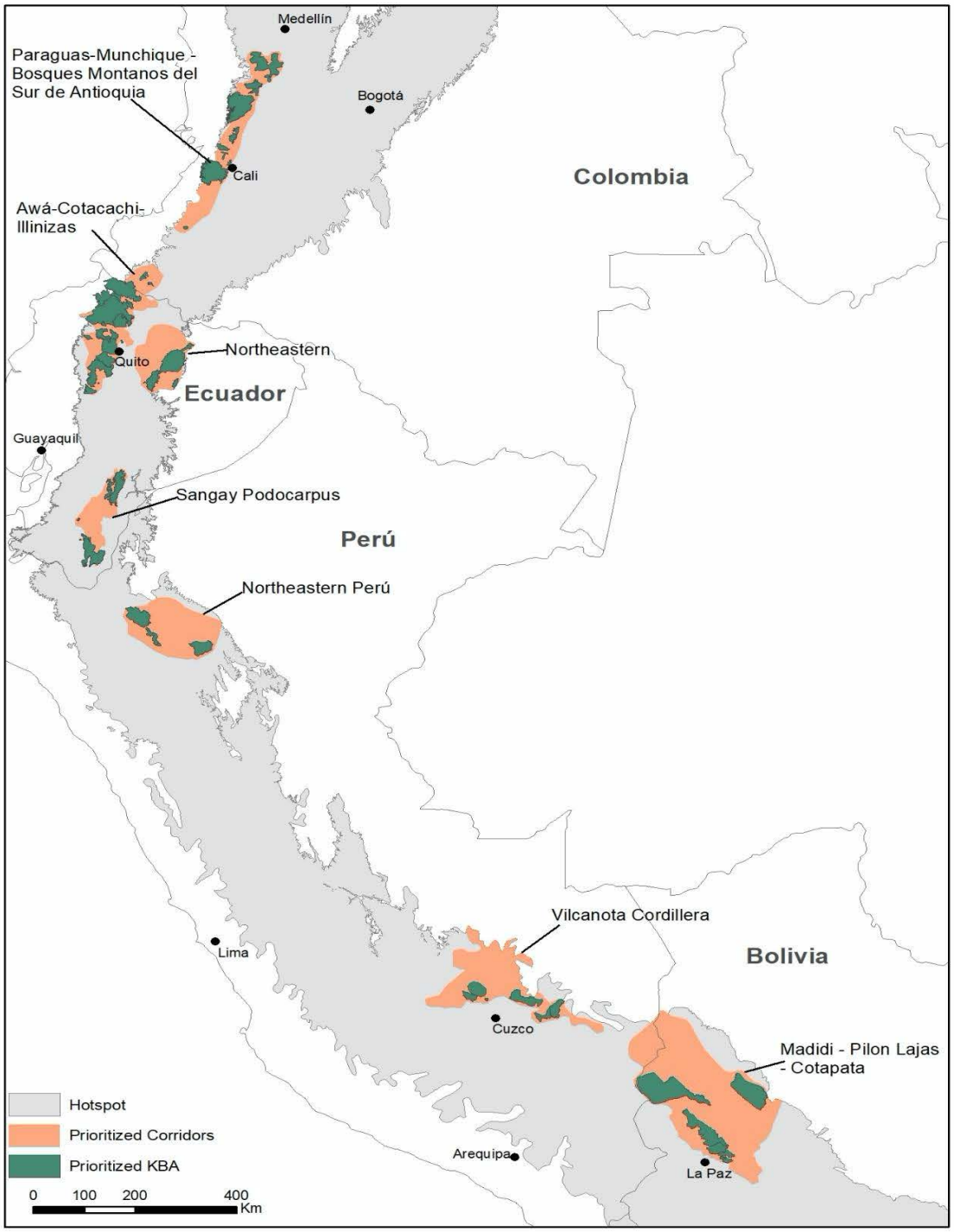
	Reserva Tapichalaca	3,925.89
	Saraguro Las Antenas	1,876.24
Northeast of Peru (Peru)	**Corridor priority KBA area**	**261,935.82**
	Cordillera de Colán	134,874.13
	Moyobamba	91,527.42
	Río Utcubamba	35,534.28
Cordillera de Vilcanota (Peru)	**Corridor priority KBA area**	**298,864.95**
	6 km south of Ocobamba	76,568.58
	Abra Málaga-Vilcanota	31,083.45
	Kosñipata Carabaya	96,492.93
	Lagos Yanacocha	2,439.65
	Quincemil	58,324.08
	Río Azara	33,956.27
Madidi-Pilón Lajas-Cotapata (Bolivia)	**Corridor priority KBA area**	**974,895.62**
	Bosque de Polylepis de Taquesi	3,455.83
	Cotapata	227,549.41
	Parque Nacional y Área Natural de Manejo Integrado Cotapata	57,238.61
	Yungas Inferiores de Pilón Lajas	249,857.65
	Yungas Superiores de Apolobamba	436,794.12
Total	**Priority KBA Area**	**4,040,579,80**

Of the 52 KBAs, 17 sites are protected with more than 80 percent of their area overlapping with a protected area, while 14 KBAs are unprotected with less than 10 percent that overlap with a protected area. The size of these 52 priority KBAs ranges from 672 hectares in 1 km west of Loja in Ecuador to 436,794 hectares in Yungas Superiores de Apolobamba in Bolivia, with the average size being 177,703 hectares. Most priority KBAs provide vital ecosystem services, supplying water to major cities and agricultural areas, while harboring vast tracts of carbon-rich forests. Of the 52 KBAs, 24 KBAs will consolidate processes supported in previous CEPF phases, and 28 KBAs are new sites that offer important opportunities to adopt CEPF best practices within the corridors where CEPF has worked previously.

To maintain the ecosystem services that depend on priority KBAs, CEPF will target management improvements in seven priority corridors, which cover 15,378,844 hectares, or about 19.7 percent of the entire hotspot area. CEPF will invest in seven corridors, with the largest being the Madidi-Pilón Lajas-Cotapata corridor, which traverses the Peru-Bolivia border, at 5,055,482 hectares. The smallest corridor is the Sangay-Podocarpus Corridor in Ecuador at 927,212 hectares.

Most of the 52 priority KBAs are in Ecuador (24 KBAs) and Colombia (14 KBAs), with fewer in Peru (9 KBAs) and Bolivia (5 KBAs). Several factors account for the higher prioritization scores in the hotspot's northern countries, with the most influential factor being the presence of more threatened biodiversity in the KBAs of Colombia and Ecuador. The priority list does not include KBAs in Argentina, Chile or Venezuela. Sites in Argentina and Chile have low relative biodiversity values compared to their northern counterparts. In Venezuela, low operational feasibility makes CEPF engagement difficult.

Figure 13.1. Priority KBAs and Corridors for CEPF Investment in the Tropical Andes Hotspot



Priority Species and Taxa

To maximize CEPF's contribution to conserve globally significant biodiversity, the investment strategy calls for targeted interventions to safeguard the most globally threatened species, which include species categorized as Critically Endangered (CR) and Endangered (EN) as well

as selected genera. CEPF seeks to enable investments for those globally threatened species whose conservation needs cannot be adequately met by general habitat protection alone. The profile shows that within the hotspot 1,451 species are globally threatened in the categories of Critically Endangered (CR), Endangered (EN) and Vulnerable (VU), of which 183 species are priorities for CEPF based on their locations within priority corridors and KBAs.

Strategic Directions and Investment Priorities

To respond to current crisis and to address longstanding threats to biodiversity and their root causes, the Phase III investment strategy builds on the achievements and lessons learned from previous phases by supporting five strategic directions and 22 investment priorities, as presented in Table 13.2. The strategy seeks to address short-term conservation needs while putting the hotspot on the trajectory toward achievement of the hotspot long-term vision, to building local conservation capacity for civil society, securing more stable and diversified sources of funding, institutionalize conservation outcomes, and foster strong private sector engagement for conservation. It also seeks to take advantage of the opportunities that will emerge in a post-COVID world. Building on the multi-stakeholder alliances established and strengthening in previous investments, Phase III fosters multi-sectoral collaboration between local communities, civil society, government, and the private sector.

The strategy adopts five cross-cutting themes regarded as essential to achieve CEPF's overall conservation objectives: 1) revival of COVID-19 impacted sites and economies based on green objectives; 2) mainstreaming of gender equality into conservation strategies and projects; 3) strengthening of capacities of indigenous peoples and local civil society; 4) fostering long-term financial sustainability; and 5) contributing to climate change adaptation and mitigation. CEPF will seek proposals that emphasis one or more of these themes.

The investment strategy is ambitious while also being realistic. The scale of the challenge ahead is more than CEPF by itself can support alone. For this reason, CEPF will support projects that demonstrate a high value for money and that demonstrate opportunities for leverage.

Table 13.2. CEPF Strategic Directions and Investment Priorities for the Tropical Andes Hotspot

Strategic Directions	Investment Priorities
1. Strengthen protection and management of 52 priority KBAs to foster participatory governance, green recovery from COVID-19, climate change resilience, species conservation, and financial sustainability.	1.1 Facilitate the establishment, upgrading, and/or expansion of public and private protected areas.
	1.2 Prepare and implement participatory management plans and other relevant KBA management instruments that support broad stakeholder collaboration.
	1.3 Strengthen land tenure, management, and governance of indigenous territories and campesino communities.
	1.4 Enable local communities to enter and remain in incentive programs that benefit biodiversity conservation.
	1.5 Promote and strengthen bio-enterprises that support biodiversity conservation and provide gender-equitable benefits to local communities.
2. In the seven priority corridors, collaborate with	2.1 Support participatory land-use and development plans and governance frameworks to foster a shared vision of conservation and sustainable development to guide future investments.

public and private sector stakeholders to enable biodiversity conservation, a green recovery from COVID-19, and environmental, financial, and social sustainability, in benefit of the priority KBAs.	2.2 Support the preparation of policies, programs, and projects that foster biodiversity conservation, particularly at sub-national levels, and that leverage funding for their implementation.
	2.3 Support the dissemination and integration of the conservation outcomes (threatened species, KBAs and corridors) in the strategic plans and public policies of governments, donors, and the private sector.
	2.4 Establish and strengthen traditional and innovative financial mechanisms and leverage financing initiatives for conservation, including payments for ecosystem services, carbon credits and compensation mechanisms.
	2.5 Promote and scale up bio-enterprises to benefit communities, biodiversity, connectivity and ecosystem services.
	2.6 Promote private sector actors and their associations to integrate conservation into their business practices and to implement corporate social responsibility policies and voluntary conservation commitments.
	2.7 Integrate biodiversity conservation objectives into policies and programs related to mining and infrastructure and promote related demonstration projects.
	2.8 Strengthen local capacity, facilitate public consultation, and support partnerships to implement mitigation measures (assess, avoid, mitigate and monitor impacts) in projects that present a risk to priority KBAs, with a focus on mining and infrastructure.
3. Safeguard priority globally threatened species.	3.1 Prepare, implement, and institutionalize conservation action plans that include climate change resilience for 183 Critically Endangered (CR) and Endangered (EN) species, and for select genera, presented in Appendix 13.3.
	3.2 Support strategies and information campaigns to combat illegal wildlife trafficking and hunting.
4. Cultivate a well-trained, well-coordinated and resilient civil society sector at the local, corridor, and hotspot levels to achieve CEPF's conservation outcomes.	4.1 Strengthen the institutional capacities (administrative, financial, fundraising, communications, governance, and project management) of CEPF's strategic partners to implement biodiversity conservation programs.
	4.2 Strengthen the technical knowledge and skills of civil society through short-term courses to implement practical conservation actions based on an evaluation and training strategy.
	4.3 Support a security strategy and alliance to safeguard at-risk environmental and indigenous defenders.
	4.4 Strengthen the strategic communication capacity of the media and civil society networks to create conservation awareness among the public and decision makers.
	4.5 Strengthen the capacities and involvement of women in CEPF initiatives.
	4.6 Improve stakeholder cooperation and strengthen alliances, and foster information exchange and lessons learned.
5. In the hotspot, provide strategic leadership and effective coordination of CEPF investment through a regional implementation team (RIT).	5.1 Create a broad community of civil society groups working across institutional and geographic boundaries, to strengthen their capacities and promote their long-term resilience, to support CEPF's mission and conservation goals.

14. LOGICAL FRAMEWORK

Portfolio Objective	Targets	Means of Verification	Important Assumptions
Engage civil society in the conservation of globally threatened biodiversity through targeted investments with maximum impact on the highest conservation and ecosystem services priorities.	At least 60 CSOs, including at least 50 domestic organizations, actively participate in conservation actions guided by the ecosystem profile. At least 2.0 million hectares have new or strengthen management in 30 priority KBAs. At least 250,000 hectares of production landscapes with strengthened management of biodiversity. At least 50 alliances and networks formed among civil society actors to avoid duplication of effort and maximize impact in support of the CEPF ecosystem profile. At least 3 corridor development plans or policies integrate biodiversity conservation goals. At least five sustainable funding mechanisms established or strengthened, to leverage $1.0 million in sustainable funding for the conservation outcomes. At least 5,000 women and 5,000 of men receive direct socioeconomic benefits through increased income, food security, resource rights or other measures of human wellbeing. At least eight indigenous and/or Afro-descendant territories and their communities under improved land management and governance. At least 200 communities, totaling at least 12,500 people, receive non-cash benefits from the management of their biological resources.	Grantee and RIT progress reports Annual portfolio overview reports; portfolio mid-term and final assessment Protected Areas Tracking Tool (SP1 METT)	COVID-19 restrictions on travel and meetings do not significantly limit conservation action in the KBAs and corridors. Social, economic and political stability facilitate implementation of conservation initiatives and provide a safe operating environment for civil society. The CEPF grants portfolio effectively guides and coordinates conservation action in the Tropical Andes Hotspot. Stakeholder interests remain stable or increase with respect to working in partnership with CSOs to achieve the CEPF conservation outcomes. Regulatory and institutional environment for conservation, environmental protection, and civil society engagement remains stable or improves. Investments by other donors support complementary activities that reduce threats to priority corridors, sites and species and improve the operating environment for civil society.

Intermediate Outcomes	Intermediate Targets	Means of Verification	Important Assumptions
Outcome 1: Strengthen protection and management of 52 priority KBAs to foster participatory governance, green recovery from COVID-19, climate change resilience, species conservation, and financial sustainability. **$6,500,000**	At least 6 unprotected or partially protected KBAs, covering at least 300,000 hectares, under new or expanded protection. At least 15 protected areas experience, on average, an improvement of at least 10 points in their METT score. 15 protected areas experience a 10% improvement in their participatory management, based on performance in questions 22 to 25 of the METT. Co-management mechanisms that enable community participation in site management and governance developed and/or strengthened for at least 5 KBAs. Climate change resilience integrated into 100% of KBA-level management plans and related management instruments. 10 *planes de vida* prepared and/or updated as development and empowerment plans for indigenous communities. 6 KBAs with improved indigenous and campesino land tenure. At least 15 KBAs support successful small and medium-level conservation enterprises with gender-equitable sustainable livelihoods for communities. In at least 5 KBAs, 30 communities receive cash benefits from incentive schemes for the effective management of biodiversity.	Grantee and RIT progress reports CEPF Secretariat supervision mission reports Protected Area Management Effectiveness Tracking Tool (SP1 METT) Formal legal declarations or community agreements designating new protected areas Management plans and reports on management activities Monitoring reports linked to incentive programs and bio-enterprises with gender-equitable benefits to local communities. World Database of KBAs Third-party impact evaluation reports.	Government agencies are supportive of civil society efforts to conserve KBAs and corridors. Protected area managers are receptive to involving local communities in zoning, management and governance. Local communities are willing to play an active role in site-based conservation. Indigenous and campesino communities are receptive to form alliances with CSOs to improve land tenure. Government policies provide for community management of natural resources. CSOs have adequate capacity and are interested in engaging in conservation and management of KBAs and corridors. Suitable and sufficient funding sources are available for conservation incentives models. Appropriate, cost-effective site-based monitoring protocols for biodiversity and human wellbeing impacts can be developed.

Outcome 2: In the seven priority corridors, collaborate with public and private sector stakeholders to enable biodiversity conservation, a green recovery from COVID-19, and environmental, financial, and social sustainability, in benefit of the priority KBAs. **$2,600,000**	At least 5 local development plans, projects, policies, and tools mainstream biodiversity, ecosystem services, and nature-based climate solutions, with a focus on tourism, mining, unsustainable agriculture, and infrastructure development. Climate change resilience integrated into 100% of sub-national development plans and policies supported by CEPF. At least five sub-national public entities in five priority corridors mainstream conservation tools and outcomes into their policies and operations. At least four sub-national governments in four corridors provide funding or in-kind support to CEPF-funded projects. Boundaries of KBAs in CEPF focal countries are updated, disseminated, and integrated into local and national public and donor conservation strategies. Long-term sustainable financing mechanisms in place for at least two CEPF priority KBAs and/or corridors. At least 10 conservation-friendly enterprises support local community monetary and/or non-monetary incentives for biodiversity in five corridors. At least 3 demonstration projects created and/or replicated with co-financing from the private sector, that integrate conservation, ecosystem services, and/or irrecoverable carbon into their production practices. At least two businesses and/or business associations influenced to better incorporate biodiversity, ecosystem services and irrecoverable carbon in their business and production practices, strategies, and policies in two corridors. At least three mining or infrastructure projects in two corridors integrate and co-finance social and	Grantee and RIT progress reports CEPF Secretariat supervision mission reports Official land-use and development plans and policies covering the priority corridors. Integrated management plans Subnational government reports and budgets for conservation in priority corridors. Private sector reports. Public-private partnership agreements	Decision-makers are receptive to working with CSOs and sympathetic to conservation and sustainable development of the priority KBAs and corridors. Private companies in key natural resource sectors appreciate the business case for better environmental and social practices. CSOs with sufficient capacity to engage in advocacy and decision-making. CSOs are committed to maintaining lines of collaboration and communication with the private sector. Suitable and sufficient funding sources will be available for conservation incentives models. Markets for sustainably produced commodities from the hotspot exist or can be built.

	environmental safeguards to prevent and/or mitigate environmental hazards in their operations. At least three mining or infrastructure projects in two corridors implement and finance monitoring protocols before and after their adoption of improved environmental and social practices.		
Outcome 3. Safeguard priority globally threatened species. **$1,600,000**	Conservation attention focused on at least 50 globally Endangered and Critically Endangered species and/or their genera to improve their threat status. Conservation action plans developed, approved, and implemented for at least 20 priority Critically Endangered and Endangered species, with in-kind or monetary support provided by governmental and/or private sector entities to promote their sustainability after CEPF support. Action plans developed, approved, and implemented in two corridors to combat illegal wildlife trade and hunting, with in-kind or monetary support provided by governmental and/or private sector entities to promote their sustainability after CEPF support.	Grantee and RIT progress reports CEPF Secretariat supervision mission reports IUCN Red List species accounts Species conservation plans Strategic plans to combat illegal wildlife trade and hunting.	Adequate capacity to implement species-focused conservation exists among civil society or can be built. Governments and international donors remain committed to species conservation and are able to provide financial support for long-term programs. Innovative funding sources for species and site conservation (e.g., private companies, high net worth individuals, etc.) can be identified and accessed. National and international laws provide an appropriate basis for species-focused conservation action.

Outcome 4. Cultivate a highly-trained, well-coordinated and resilient civil society sector at the local, corridor and hotspot levels to achieve CEPF's conservation objectives. **$1,200,000**	At least 80 percent of local CSOs demonstrate improved capacity and performance on their CSTT and GTT. 100 percent of CEPF projects working with communities incorporate gender considerations and capacity building to achieve gender equitable benefits. CSO sustainable financing strategies developed and implemented by at least 10 partners, leveraging at least $100,000 in sustainable funding. At least 5,000 people, with 50 percent targeting women, receive structured training. One capacity needs assessment undertaken and implemented to support capacity building on priority conservation topics of direct relevance to implementation of the CEPF investment strategy. Baseline and final evaluation of virtual technical and administrative courses demonstrate improved capacity of at least 250 Andean conservation practitioners to implement conservation projects and secure new financing. A security strategy to reduce threats to at-risk environmental and indigenous defenders developed and promoted to attract a broad coalition to support strategy implementation. Five of media outlets (newspapers, radio and television stations, magazines) increase their capacity and coverage on the importance of biodiversity, ecosystem service values, and carbon stocks. At least 2 communication campaigns implemented to link the KBAs and their ecosystem services with climate resilience and human welfare. Awareness of local conservation issues and rights and opportunities related to natural resource management raised among local communities within at least 5 priority sites.	Grantee and RIT progress reports and site visits CEPF Secretariat supervision mission reports CEPF's gender tracking tool CEPF's civil society organizational capacity tracking tool National and regional policy documents	The operating environment for civil society will remain constant or improve across the hotspot. Key capacity limitations of CSOs can be addressed through grant support. Civil society actors are able to work collaboratively to respond to conservation challenges. Key media outlets demonstrate interest in working with civil society to improve conservation reporting. Sufficient civil society capacity to undertake biodiversity mainstreaming exists or can be built.

Outcome 5. In the hotspot, provide strategic leadership and effective coordination of CEPF investment through a regional implementation team (RIT). **$2,100,000**	At least 60 CSOs, including 50 domestic organizations, actively participate in conservation actions guided by the ecosystem profile. At least 20 CSOs leverage new funding to promote the sustainability of CEPF grants. At least 50 small grants and 50 large grants successfully achieve their main conservation objectives. At least 30 small grantees and 20 large grants consisting of grassroots and indigenous CSOs demonstrate improvements in their CSTT and GTT scores following CEPF support. One communication mechanism supported to enable active sharing of CEPF results, reports, best practices, and lessons learned among CSOs throughout the hotspot. At least one alliance of CEPF partners in each of the seven conservation corridors and/or focal countries coordinates conservation and sustainable development projects to achieve synergies. At least 2 participatory assessments undertaken and lessons learned and best practices from the hotspot are documented and disseminated.	RIT progress reports CEPF Secretariat supervision missions and monitoring Post-project evaluation forms Civil society organizational capacity tracking tool	Qualified organizations will apply to serve as the RIT in line with the approved terms of reference and the ecosystem profile. The CEPF call for proposals will elicit appropriate proposals that advance the goals of the ecosystem profile. CSOs will collaborate with each other, government agencies, and private sector actors in a coordinated regional conservation program in line with the ecosystem profile.
Total Budget:	**$14,000,000**		