



ADAPTATION FUND

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Adaptation Fund Board
Project and Programme Review Committee
Thirty-third Meeting
Bonn, Germany, 16-17 April 2024

PROPOSAL FOR ARGENTINA, CHILE, COLOMBIA, PERU



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Pre-Concept for a Regional Project

Countries/Region:	Argentina, Chile, Colombia, Peru	
Project Title:	AdaptAndes: Enhancing socio ecosystems resilience, knowledge management and regional cooperation and governance across the Andes	
Thematic focal area:	Multisector	
Implementing Entity:	United Nations Environment Programme (UNEP)	
Executing Entities:	Consortio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), Technical Secretariat of the Andean Mountain Initiative, with the support of the countries' Ministries of Environment	
AF Project ID:	AF00000383	
IE Project ID:		Requested Financing from Adaptation Fund (US Dollars): 13,915,000
Reviewer and contact person:	Hugo Remaury	Co-reviewer(s): Patricia Marcos Huidobro
IE Contact Person(s):	Jessica Troni	

Technical Summary	<p>The project "AdaptAndes: Enhancing socio ecosystems resilience, knowledge management and regional cooperation and governance across the Andes" aims to increase the resilience of the Andean socio ecosystems and communities by integrating ecosystem based adaptation and community based adaptation approaches to reduce climate risks, to improve knowledge and information management around climate change adaptation, and to consolidate the regional governance and cooperation through the Andean Mountain Initiative for concerted and long-term adaptation action. This will be done through the three components below:</p> <p><u>Component 1:</u> Livelihood and ecosystem resilience through EbA and CbA (USD 6,500,000)</p> <p><u>Component 2:</u> Regional knowledge management around CCA (USD 3,000,000)</p> <p><u>Component 3:</u> Regional governance for concerted adaptation (USD 2,000,000)</p> <p><u>Requested financing overview:</u> Project/Programme Execution Cost: USD 1,150,000 Total Project/Programme Cost: USD 12,650,000</p>
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	<p>Implementing Fee: USD 1,265,000 Financing Requested: USD 13,915,000</p> <p>The proposal includes a request for a project formulation grant of USD 20,000.</p> <p>The initial technical review raises some issues, such as the length of the proposal note which exceeds the limitation set for pre-concept notes, some inconsistencies on the number of countries that would be involved, and the need to describe the process through which the concrete adaptation interventions would be identified, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CAR) raised in the review.</p>
Date	25 January 2024

Review Criteria	Questions	Comments
Country Eligibility	1. Are all of the participating countries party to the Kyoto Protocol, or the Paris Agreement?	Yes.
	2. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change?	Yes. In all four countries, Andean communities face high levels of poverty that are exacerbated by adverse climate change-induced impacts such as droughts, floods and landslides, water insecurity and rainfall variability.
Project Eligibility	1. Have the designated government authorities for the Adaptation Fund from each of the participating countries endorsed the project/programme?	Yes. As per the Endorsement letters dated 8 August 2023 (Argentina), 31 July 2023 (Chile), and 16 August 2023 (Colombia and Peru).
	2. Has the pre-concept provided necessary information on the problem the proposed project/programme is aiming to solve, including both the regional and the country perspective?	Partly. CAR1: Please reduce the length of the pre-concept to ensure compliance with maximum length requirements (5 pages for part I to III). CR1: Please ensure that country-specific perspectives are reflected in the “project/programme background and context” section.

	<p>3. Have the project/programme objectives, components and financing been clearly explained?</p>	<p>Mostly.</p> <p>CAR2: While the proposal indicates that only four countries would be involved, as reflected in the number of endorsement letters provided, the pre-concept note mentions five countries and/or watersheds in multiple sections. Please kindly revise the proposal throughout to confirm the number of countries and watersheds that would be involved.</p> <p>CR2: Please provide an estimate on how the total project financing requested is to be allocated between countries, and on which basis/criteria, especially for these outputs marked “Regional – Andean Mountain Initiative”.</p> <p>CR3: Please briefly explain the process and associated criteria through which the project would select the project beneficiaries.</p> <p>CR4: Please elaborate on how the proposed output 2.1.1 would complement the findings of the AMI study dated 2023 in identifying and planning the EbA and CbA interventions.</p>
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	<p>4. Has the project/programme been justified in terms of how:</p> <ul style="list-style-type: none"> - it supports concrete adaptation actions? - it builds added value through the regional approach? - it promotes new and innovative solutions to climate change adaptation? - it is cost-effective? - it is consistent with applicable strategies and plans? - it incorporates learning and knowledge management? - it will be developed through a consultative process with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund? - it will take into account sustainability? 	<p>Partially.</p> <p>CAR3: Please kindly describe how the consultative process to be undertaken during project preparation will take into account interests and concerns of vulnerable groups, and how the consultation will be made gender-responsive to ensure compliance with the AF Gender Policy.</p> <p>CR5: Given the relatively low proportion of funding allocated to concrete (i.e. visible and tangible) interventions measures please kindly consider reallocating further financial resources towards output 1.1.1.</p> <p>CR6: Please describe the process through which the proposed EbA and CbA adaptation interventions (output 1.1.1) would be identified, keeping in mind that such activities will have to be formulated at a point where adequate risk identification is possible before being submitted for funding to comply with the ESP, and outline how the project will ensure that these interventions are innovative compared to other adaptation options. Please also refer to the Fund's guidance on unidentified sub-projects (USP)</p> <p>CR7: The proposal should describe how risks of maladaptation would be managed when identifying and selecting the EbA and CbA adaptation interventions.</p> <p>CR8: Please outline how the proposed adaptation interventions planned under output 1.1.1 would be sustained beyond the project lifetime.</p> <p>CR9: Please clarify the rationale for limiting the project to four target countries only, when all 7 Andean Mountain Initiative countries face similar challenges and would benefit</p>
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		<p>from the active participation of all countries, particularly in components 2 and 3.</p> <p>CR10: Please consider designing and including “gender-responsive” measures, rather than “gender-sensitive” measures as per the Fund’s Gender Policy.</p>
	<p>5. Does the pre-concept briefly explain which organizations would be involved in the proposed regional project/programme at the regional and national/sub-national level, and how coordination would be arranged? Does it explain how national institutions, and when possible, national implementing entities (NIEs) would be involved as partners in the project?</p>	<p>Partially.</p> <p>CR11: The proposal should clarify whether it envisages to involve any AF National Implementing Entities as part of its implementation arrangements.</p> <p>CR12: The proposal should clarify the extent to which national/sub-national institutions may be involved in project execution, given that only the endorsement letter from Argentina indicates the involvement of a national institution (Ministry of Environment and Sustainable Development of Argentina) while the proposal cover page states that the project would be executed “with the support of the countries’ Ministries of Environment”.</p> <p>CR13: The proposal should describe how coordination will be ensured across the IE and the EEs.</p>
Resource Availability	<p>6. Is the requested project / programme funding within the funding windows of the programme for regional projects/programmes?</p>	<p>Yes.</p>
	<p>7. Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 10 per cent of the project/programme for implementing entity (IE) fees and at or below 10 per cent of the project/programme cost for the execution costs?</p>	<p>Yes.</p>
Eligibility of IE	<p>8. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?</p>	<p>Yes.</p>



ADAPTATION FUND

PRE-CONCEPT FOR A REGIONAL PROJECT/PROGRAMME

PART I: PROJECT/PROGRAMME INFORMATION

- Title of Project/Programme:** AdaptAndes: Enhancing socioecosystems resilience, knowledge management and regional cooperation and governance across the Andes.
- Countries:** Argentina, Chile, Colombia, Peru
- Thematic Focal Area¹:** Food security, DRR, innovation in adaptation finance.
- Type of Implementing Entity:** International/Multilateral
- Implementing Entity:** United Nations Environment Programme (UNEP)
- Executing Entities:** Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), Technical Secretariat of the Andean Mountain Initiative, with the support of the countries' Ministries of Environment
- Amount of Financing Requested:** 13,915,000 (in U.S Dollars Equivalent)
- Project Formulation Grant Request:** Yes No
- Amount of Requested financing for PFG:** 20,000 (in U.S Dollars Equivalent)
- Letters of Endorsement (LOE) signed for all countries:** Yes No

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: <https://www.adaptation-fund.org/apply-funding/designated-authorities>

Stage of Submission:

- This pre-concept has been submitted before
- This is the first submission ever of the pre-concept

In case of a resubmission, please indicate the last submission date:

Please note that pre-concept should not exceed 5 pages (in addition to this first cover page)

Project/Programme Background and Context:

1. The Andes extend over c. 7000 km along South America and are the longest mountain range on Earth, covering 2.15 million km² of seven countries including Argentina, Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela. The wide latitudinal extent and complex topography (elevations reaching above 6000 m) have resulted in an outstanding diversity of cultures, land use histories, climatic regimes and ecosystems, including three global biodiversity hotspots. These ecosystems serve as key carbon stocks and sinks and regulate water provision for more than 68 million rural and urban inhabitants, including many large cities such as Bogotá and La Paz, and lowland cities such as Lima depending on water from the Andes². Andean rural populations face high levels of poverty and are extremely vulnerable to climate change (CC) impacts, due to their high dependence on subsistence agriculture, limited access to markets, decision-making and public services, and limited local government capacities for adaptation. These factors disproportionately affect vulnerable demographic groups including women and indigenous populations (Schoolmeester et al. 2016). According to the Sixth Evaluation Report of the IPCC (AR6), the Andes face five of the eight key climate risks identified for South America, including risk of food insecurity due to droughts, risk to people and infrastructure due to floods and landslides and risk of water insecurity due to declining snow cover, shrinking glaciers and rainfall variability (Castellanos et al. 2022).
2. Global warming is particularly fast in most of the Andean region, with available data indicating temperature increases of up to 0.4 °C per decade above 3000 m (Vuille et al. 2018). Changes in precipitation are more complex, with projected variations during this century ranging from -50% to +30% depending on the specific territory and strong reductions in areas such as the northeastern Andes, altiplano and Patagonia (AMI 2023). In particular, the tropical Andes are considered a global hotspot for cryosphere change, and since the 1970s glaciers have lost more than 50%³ of their area and many below 5000 m have disappeared. Melting modifies water regulation regimes in extensively glaciated mountain regions, with a significant reduction in water provision during the dry season documented in several glacial Andean watersheds (INAIGEM 2018; Vuille et al. 2018; Cuesta et al. 2019).
3. High Andean biodiversity is particularly vulnerable given a high proportion of endemic species dependent on low temperatures with narrow thermal niches. In turn, Andean landscapes are being transformed, including a contraction of the potential distribution of puna and paramo biomes and degradation/loss of critical ecosystems such as *Polylepis* forests and high Andean wetlands (Cuesta et al. 2019, 2020). Climate change is also directly impacting livelihood activities, especially agriculture, livestock production and tourism (Anderson et al., 2011; AMI 2023). For agriculture, documented and projected impacts include altitudinal displacement and reduced yields for strategic crops such as potatoes, quinoa and corn, as well as increased incidence of pests, diseases and frost damage, impacting the food security in the region (AMI 2023; Postigo et al. 2012; Tito et al. 2017). For livestock systems (e.g. bovines and camelids), key threats include reduced water availability and productivity/degradation of pastures and Andean wetlands. Finally, glacier shrinkage, reduced water provision and increased disaster risk is impacting community-based and commercial touristic activities in the Andes, including hiking, climbing, and skydiving (AMI 2023).
4. All these risks imposed and exacerbated by climate change require the implementation of adaptation strategies combining different approaches at multiple spatial scales. In this project we propose integrating Ecosystem-based Adaptation (EbA) and increased resilience of local populations through Community based Adaptation (CbA) in strategic watersheds with the strengthening of knowledge management and science-based governance of climate change adaptation (CCA) at local, national and regional scales. There have been substantial advances in the last two decades in the implementation of EbA strategies in several Andean countries⁴, but the systematization and evaluation of their impacts have lagged behind (Llambí and Garcés 2021, Dupuits et al. 2023). Research and monitoring of CC impacts across the Andes has also advanced significantly, including the establishment of regional long-term monitoring initiatives on climate, hydrology, glaciers and biodiversity (e.g. GLORIA-Andes⁵, Bosques Andinos⁶, IMHEA⁷, etc). However, recent assessments have identified challenges regarding an integrated understanding of changes in biodiversity, ecosystem services (water regulation, carbon accumulation) and human welfare under climate and land use change, including the modelling of prospective scenarios. Other key challenges include promoting more participatory approaches, the sustainability of monitoring processes and explicit mechanisms for science-policy dialogues allowing the integration of available evidence into planning and decision-making (Llambí and Garcés 2021, Carilla et al. 2023). The same can be said of CCA policies, with significant progress during this decade in the formulation of national CC adaptation strategies and plans (NAPs) and institutional capacity at the national level (Dupuits et al. 2022). At the regional level, the Andean Mountain Initiative⁸, a regional platform that gathers the seven Andean states, has made significant progress, including the formulation of a Strategic Agenda for Adaptation to Climate Change in the Andes, a Five-year Action Plan (2022-2026) and a Road Map for Strengthening Governance. However, there is a need to articulate these regional and national policies with local CCA experiences, platforms, and strategies, to promote more effective multi-actor and multiscale CC adaptation and promote increased resilience of Andean populations and socio-ecosystems (Dupuits

- et al. 2022). Additionally, achieving synergies between mitigation, adaptation, biodiversity, and combating desertification is supported by international frameworks and technical bodies, promoting regional coordination efforts for greater impact. The IPCC and the UNCCD's Science-Policy Interface (SPI) have highlighted the importance of thematic convergences to promote the implementation of integral solutions at the territorial level.
5. In this context, the AMI (2023) has recently developed a detailed diagnosis of CC vulnerability of Andean socio-ecosystems as a basis for this proposal, and selected strategic watersheds in Argentina (subwatershed Bermejo), Chile (Maipo), Colombia (Sogamoso river) and Perú (Santa) based on a multicriteria analysis, including their national strategic value, climatic risks, environmental conflicts, and vulnerability of local populations. In the selected watersheds, poverty levels range between 44% in Santa and 4% in Maipo (although rural poverty is probably higher in this case). The percentage of the population living in the high Andean area of the watersheds is higher in the northern Andes (Sogamoso 69%; Chama-Motatán 43%) and lower in the south (Bermejo 9%; Maipo 2%). All watersheds show projected temperature increases for 2030 (RCP 8.5) varying between +3.2 °C in Santa and +0.83 °C in Sogamoso, while rainfall projections vary depending on the sector (from -50% in Chama-Motatán to +40% in Sogamoso). The high Andean areas in all watershed share the presence of glaciated areas (from 37% in Santa to less than 1% in the northern Andes of Sogamoso and Santa-Motatán), high Andean wetlands and bofedales, and a diversity of high Andean ecosystems (e.g. páramos, punas, shrublands, Andean steppes) and population dedicated to subsistence and commercial agriculture, livestock management (bovines, ovines, and camelids) and mountain tourism. In all watersheds, the impacts of climate change are evidenced in fast glacial retreat (which will soon completely disappear in Venezuela), reduced water quantity and quality (including acidification of glacial streams in the case of Santa), decreased productivity of pastures and degradation of wetlands, affecting livestock production and tourism. Key crops such as potatoes exhibit reductions in yields associated with increased rainfall and fungal diseases incidence (Sogamoso), while in Santa significant reductions in water quantity and quality pose an important risk to subsistence agriculture without irrigation (AMI 2023), threatening food security.
 6. According to the Sixth Evaluation Report of the IPCC (AR6) addressing climate risks in mountain areas requires targeting the root causes of vulnerability, which are often socioeconomic in origin and can include poverty, marginalization, and inequitable gender dynamics. Low-regret adaptation options for the Andean region would include the integration of EbA and CbA, water/ecosystem conservation efforts (i.e. restoration and protection of vulnerable ecosystems), and regional cooperation and transboundary governance in mountain regions, supported by multi-scale knowledge networks and monitoring programmes (Adler et al. 2022; Castellanos et al. 2022). This project proposes working in all those areas in the Andean region: 1) on-the-ground adaptation implementation, 2) knowledge and information management, and 3) regional governance and cooperation. In a context where risks transcend geographic boundaries, AdaptAndes can enable concerted actions to foster transformative adaptation and increase the socio-ecological resilience and adaptive capacities of Andean communities.

Project/Programme Objectives:

7. The project's objective is to increase the resilience of the Andean socioecosystems and communities by integrating EbA and CbA approaches to reduce climate risks, improving knowledge and information management around climate change adaptation, and consolidating the regional governance and cooperation through the Andean Mountain Initiative for concerted and long-term adaptation action. The project will integrate practical knowledge and socio-environmental information into effective regional platforms for coordination and investment to advance cost-effective adaptation measures at community-level in the Andes. This objective will be achieved via:
 - A) Increasing livelihood and ecosystem resilience through EbA and CbA in response to climate change and variability in high-mountain areas of the Andes.
 - B) Effectively managing knowledge and information to support decision-making and foster climate change adaptation in high-mountain areas of the Andes.
 - C) Strengthening regional governance and cooperation in the Andes for concerted adaptation action.
8. The project's objective is in alignment with the Adaptation Fund Results Framework, in particular Outcome 2 (Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses), Outcome 3 (Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level) and Outcome 4 (Increased adaptive capacity within relevant development sector services and infrastructure assets).

Project/Programme Components and Financing:

Project Components	Expected Outcomes	Expected Outputs	Countries	Amount (US\$)
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1. Livelihood and ecosystem resilience through EbA and CbA	1.1 Local, national and regional institutions upscale and replicate EbA and CbA experiences and lessons learned in 5 strategic watersheds for resilience building in the Andean region.	1.1.1 Resilience of the agriculture, livestock, and tourism-based livelihoods of vulnerable rural communities is strengthened in 5 strategic watersheds of the Andes through the implementation of EbA and CbA.	Argentina, Colombia, Chile, Peru	6,500,000
		1.1.2 Capacities of key community, private and public sector stakeholders are improved to support the implementation of EbA and CbA.		
		1.1.3 Financial products and strategies are evaluated and aligned with international funding mechanisms to support the implementation of adaptation interventions.		
2. Regional knowledge management around CCA	2.1 National and regional institutions whose capacities have been improved are integrating climate knowledge and information into decision-making for climate adaptation.	2.1.1 Climate risk prospective modelling is implemented for the identification and planning of EbA and CbA interventions in 5 strategic watersheds.	Argentina, Colombia, Chile, Peru	3,000,000
		2.1.2 Ongoing regional initiatives are strengthened for integrated and participatory climate change monitoring.	Regional - Andean Mountain Initiative	
		2.1.3 Science-policy exchanges are consolidated to promote knowledge-based adaptation decision-making and planning at local, national and regional levels.		
3. Regional governance for concerted adaptation	3.1 Andean countries are taking concerted actions for regional adaptation to climate change.	3.1.1 North-south and south-south cooperation between Andean countries is strengthened to advance on NDC implementation and the consolidation of mountain-specific policies and strategies.	Regional - Andean Mountain Initiative	2,000,000
		3.1.2 Regional governance and institutional capacities are strengthened for concerted adaptation action in the Andes, in line with national adaptation instruments and international commitments.		
		3.1.3 Key stakeholders are mobilized for the adoption of regional agreements integrating adaptation and sustainable development in the Andes.		
6. Project/Programme Execution cost				1,150,000
7. Total Project/Programme Cost				12,650,000
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)				1,265,000
Amount of Financing Requested				13,915,000

Project Duration: 4 years

PART II: PROJECT/PROGRAMME JUSTIFICATION

9. The project is designed in three components. **Component 1 “Livelihood and ecosystem resilience through EbA and CbA”** focuses on field implementation. The Andean mountains are home to essential ecosystems in South America that play a vital role for both local communities and downstream populations. The ecosystem services they provide include hydrological regulation, provision of fresh water that sustains food production, carbon sequestration, among many others. However, changes in temperature, rainfall, snow and glacial melt as a result of climate change reduce their capacity to cope. Enhancing local communities’ adaptative capacity and contributing to the recovery of healthy mountain ecosystems is therefore essential in the midst of climate crisis. Flagship projects in Andean countries such as Mountain EbA⁹, AICCA¹⁰ and Adaptation at Altitude¹¹ have made the case for EbA as a cost-effective approach to adapt to climate change in the Andes. We propose to draw from the experience and best practices of emblematic CC adaptation solutions that have been implemented across the region (many of which have been systematised by Adaptation at Altitude’s solutions portal¹²), which have emphasised strengthening of local community-based and governance capacities, including sustainable watershed management strategies in glacial (e.g. Glaciares+ Project in Perú¹³) and non-glacial watersheds (e.g. Adaptation to Climate Impacts Project in Colombia¹⁴), the restoration of ancestral water management practices (EbA project in

Peru⁹), the restoration, sustainable management and participatory monitoring of high Andean pastures and wetlands with local communities (e.g. PPA in Venezuela¹⁵; Mountain Institute Program in Peru¹⁶; Tungurahua Fund in Ecuador¹⁷; PPA in Colombia¹⁵) and the reconversion using climate resilient practices of intensive agricultural production and cattle grazing systems and revalorization of more resistant native crops (e.g. AITAB in Colombia¹⁸; GCI Project in Ecuador¹⁹; FORECCSA in Ecuador²⁰), among many others. Despite progress, on-the-ground EbA measures are still not widely implemented with a regional vision that highlights the need of working in the mountain range as a whole, including the Northern, Central and Southern Andes.

10. Building on Component 2's climate modelling output, Component 1 will implement concrete EbA and CbA in 5 watersheds (one per country) to address identified climate risks and help build resilience for the livelihoods of vulnerable rural communities. The EbA approach is accepted and promoted through various territorial and sectoral planning instruments in all 5 countries. The prioritized watersheds are strategic spaces for the implementation of EbA and CbA interventions, selected by the governments using common criteria considering the potential for experience and lessons sharing among countries. Exchange and joint learning will facilitate the identification of EbA, CbA and other adaptation measures that integrate a gender perspective, improve multistakeholder participation -including private sector engagement- and facilitate the monitoring of measures.
11. Component 1 is divided into 3 main outputs. Output 1.1.1 will include activities such as evaluating and selecting, in a participatory and gender-sensitive way, cost-effective EbA measures to respond to the context in each watershed. EbA and CbA implementation will focus on three livelihood strategies: agriculture, livestock and tourism, seeking to strengthen the links between them to promote resilient value chains. Output 1.1.2 will build local governments and the private sector's ability to support and foster climate change adaptation and EbA and CbA. Workshops will also be organized to enhance the knowledge and technical capacities of Andean communities and private companies located in these territories for EbA. Output 1.1.3 aims to achieve the capitalization of international funds to a local level. Implementing EbA and CbA in the Andes will have benefits that go beyond adaptation, potentially contributing to mitigation and biodiversity initiatives. If efforts are aligned, the adaptation finance gap can be reduced. As part of this output, a mapping of relevant financial products, strategies and international funds will be executed to identify opportunities for alignment and capitalization of funding. It will also include the design of a financial strategy for the sustainability of the measures implemented and the generation of a solid knowledge and empirical basis that incentivize the compensation for adaptation co-benefits (e.g. carbon storage).
12. Table 1 exemplifies some of EbA, CbA and other adaptation measures that have proven effective in Andean ecosystems and that could be implemented in this project. Interventions will aim for the conservation and sustainable recovery of ecosystems and the promotion of strategies to guarantee water and food security and contribute to disaster risk reduction in local livelihoods.

Table 1. EbA, CbA and other adaptation options in high mountain areas.

Climate hazards	Climate impacts	EbA, CbA & other adaptation options and enabling conditions	Benefits
<ul style="list-style-type: none"> • Flooding. • Landslides. • Droughts. • Alluviums. • Glacier retreat. • Frosts. 	<ul style="list-style-type: none"> • Water runoff. • Decreased water regulation. • Decreased agriculture and livestock-related production, and scenic beauty (tourism). • Food insecurity. • Decreased water supply and quality. • Ecosystems degradation. 	<ul style="list-style-type: none"> • Protection and restoration of wetlands and high mountain ecosystems. • Climate resilient irrigation strategies. • Climate-smart and agroecological practices in strategic crops and livestock grazing. • Natural pasture and agro-productive systems management. • Animal load reduction and rotation. • Traditional hydro infrastructure rehabilitation. • Climate resilient agro- and eco-tourism. • Water sowing and harvesting. • Use of mechanisms of reward for ecosystem services to implement interventions for conservation, recovery, and sustainable use of water resources. 	<ul style="list-style-type: none"> • Improved ecosystem resilience and functionality. • Increased adaptive capacity. • Enhanced water regulation, infiltration and provision. • Increased water security and availability during dry season (for both communities in the watersheds and downstream). • Increased vegetation cover. • Runoff reduction contributing to reduce mudslides or landslides. • Control of erosion and sediment entrainment. • Maintenance of scenic beauty. • Decreased pressure on vulnerable ecosystems. • Reduced climate-related losses and damages • Enhanced food security. • Enhanced relations with the other stakeholders and sectors. • Enhanced community organization.

		<ul style="list-style-type: none"> • Early Warning Systems in watersheds vulnerable to climate change. • Sustainable practices for watershed ecosystem conservation in Natural Protected Areas (NPAs) • Sector-specific guidelines for EbA and CbA implementation (agriculture²¹, livestock and tourism). • Capacity building and promoting local self-organization. 	<ul style="list-style-type: none"> • Active women and youth involvement. • Active private sector engagement, improving its productivity and competitiveness. • Diversified sources of income. • Increased connectivity between local value chains.
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Source: Adapted from UNDP (2015), MINAM (2022).

13. In **Component 2 “Regional knowledge management around CCA”**, the use of state-of-the-art approaches for climate risk prospective modelling (identified as key knowledge gap in the Andes, Llambí and Garcés 2021) in the selected watersheds will provide an evidence-based foundation for the design and implementation of EbA strategies and integrated risk management (identifying specific risks for agriculture, livestock raising, tourism and local welfare). Moreover, this includes important co-benefits in terms of understanding how CC risks impact water regulation and carbon stocks, which will provide much needed evidence to strengthen the capacity of national governments to engage the private sector in these initiatives, access international funding, new market and incentive opportunities for compensation for these adaptation co-benefits (e.g. increase carbon sinks or reduce emissions). This will, in turn, be linked with ongoing national and regional initiatives for research and long-term monitoring of CC impacts (working for more than 10 years in the 7 Andean countries), which are providing the only available cutting-edge evidence on biodiversity / ecosystem services dynamics of Andean ecosystems using standardized global protocols at a continental scale (e.g. GLORIA-Andes, Bosques Andinos, IMHEA). The recent creation of the Network of Socio-Ecological Observatories for the Andes (ROSA for its Spanish acronym), which is bringing together several of these existing monitoring initiatives by some of the most recognized research groups in South America, will provide an outstanding opportunity to achieve a more integrated approach linking social and environmental monitoring in a series of learning sites across the region, as well as an explicit effort to develop participatory/citizen science methods and integration of monitoring evidence (including indicators co-design) into local and regional policy planning and co-management.
14. Supporting the sustainability of these existing networks constitutes a very cost-effective strategy, as they use low-cost monitoring methods, and already have co-financing (e.g. from the Adaptation at Altitude program, SDC) and an established institutional basis. CONDESAN currently serves as a facilitating institution or partner in most of these Andean research platforms and networks. Additionally, they serve as the Technical Secretariat of the AMI, and will be the executing entity for this project. This triple role will guarantee an effective articulation of research and monitoring with regional decision-making, consolidating science-policy dialogue and exchange, for which there are already valuable pioneer experiences to build upon (e.g. the Community of Practice Adaptation in the Andes²², the Andean Dialogues on Mountain Sustainability and the Bridges in the Andes²³ online conference, to name a few). Hence, the project strategy is designed to provide a common framework to bring together innovative and cost-effective research and monitoring approaches and regional initiatives to promote knowledge-based adaptation decision-making and planning at local, national and regional levels.
15. **Component 3 “Regional governance for concerted adaptation”** will articulate the efforts by the Andean Mountain Initiative to promote sustainable development in the Andes with on-the-ground implementation of adaptation measures (Component 1) and knowledge management (Component 2) to achieve concerted climate action at the regional level.
16. Achieving CCA in the Andes requires strengthening governance mechanisms, closing institutional gaps and consolidating a multilevel approach that enables interinstitutional and intersectorial coordination for the design, implementation, and monitoring of adaptation policies and practices at regional, national, and local levels (Dupuits 2021). Mountain-governance structures in the Andean countries include the Committee for Sustainable Development of Mountain Regions in Argentina, the National Committee for Mountains in Chile, the Watershed Councils in Colombia and the Technical Mountain Group in Peru, which promote CCA as a cross-cutting axis. Their goal is to drive the implementation of plans, strategies, and adaptation laws at the national level in mountain ecosystems. However, they face the common challenge of articulating efforts both nationally (with other sectors and institutions) and regionally for resilience building in the Andes as a common territory. Therefore, in addition to on-the-ground adaptation (Component 1) and knowledge and information management for decision-making (Component 2), strengthening cooperation, governance, and institutional capacities at the regional level is needed to advance adaptation action, NDC implementation, and achieve mountain-specific policies and strategies aligned with international commitments. Through Component 3, innovative initiatives at the national level could potentially

- be replicated and scaled up in the region by promoting capacity building, science-policy exchanges, and south-south learning.
17. As part of its 2022-2026 Action Plan and Governance Roadmap, the AMI has committed to promoting thematic agreements and collaborations (including with other global mountain platforms, for which an initial exchange with the Alpine and Carpathian Conventions was developed in 2023) to foster the development of common stances and proposals that integrate CCA and sustainable development in the Andes. Working Groups have been already established, which would add up to the kick-off and sustainability of the activities in Component 3.
 18. **Innovative solutions:** As mentioned above, the project is designed to promote innovative and cost-effective solutions and approaches to CCA at the community level. Specific EbA and CbA interventions will be selected based on a solid context-specific climate analysis and through multistakeholder participatory practices that contribute to evidence-based planning and decision-making. The project also aims to add up to innovative and cost-effective adaptation monitoring methods and regional initiatives to promote concerted climate action. Some initiatives are already working with the AMI, recognizing its potential and key role in regional cooperation and governance; however, none of them integrate on-the-ground adaptation measures at that level, which is an innovative approach per se.
 19. **Regional approach supporting cost-effectiveness:** A regional approach is critical for this project in Argentina, Chile, Colombia and Peru to address common climate threats in the Andes, and leverage opportunities for upscaling ecosystem-based adaptation approaches nationally and regionally and enhance climate knowledge management and regional south-south cooperation. Since participating countries are members of the AMI, the project's regional approach will consolidate the initiative's governance while ensuring coordinated planning and implementation of activities in line with the goals of the AMI's Strategic Agenda for Adaptation to Climate Change and national and international climate instruments. Through the regional approach, the project will aim to demonstrate the effectiveness of EbA and CbA interventions at a wider range, allowing innovation, exchange and sharing of experiences and lessons. Some of the outputs of the project are planned to involve all Andean countries and members of the AMI as part of south-south cooperation initiatives, with high potential for scale-up and replication. The administrative and implementation costs compared to individual country projects will be lower, while avoiding duplication of efforts and enhancing the cost-effectiveness of the project.
 20. **Alignment with national strategies and plans:** The Andean countries have adopted climate policies (plans, strategies and/or legislation) at national levels, as observed in Annex 1, and have formulated at least their first NDCs. Argentina, Chile, Colombia and Peru have submitted updated NDCs in 2020 and have formulated long-term strategies to 2050, demonstrating ambitious CC targets (Dupuits 2021). The project aligns with the climate change regulatory and policy frameworks in all 5 countries and will directly contribute to key objectives of their NDCs. In addition, it will contribute to the involvement of the private sector and the participation of communities for future updates of the countries' NDCs and the strengthening of CC policies in the medium and long term.
 21. **Learning and knowledge:** Component 2 will focus on knowledge and information management. As explained above, platforms and networks are in place for monitoring and learning in the Andes. This project will build upon those initiatives and articulate them for capturing, systematizing, and disseminating lessons learned.
 22. **Consultative process:** The development of this pre-concept was done in close collaboration with the 5 governments and the AMI, in particular AMI's focal points from the Ministries of Foreign Affairs and Ministries of Environment. The project's theory of change has been developed over the past years, as the AMI countries were eager to work together on a regional scale. As a matter of fact, the regional study Vulnerability and Adaptation to Climate Change in High Mountain Areas of the Andean Region (AMI 2023) was developed to serve as a baseline for proposal formulation. The study involved multiple government consultations and meetings, as well as interviews with stakeholders from academia. Watersheds prioritized for this project were selected through this process. For concept development, local consultations will be executed, including an initial review of environmental and social impacts, which will be further developed during full proposal formulation into an Environmental and Social Management Framework and Gender Action Plan, in line with the Environmental and Social policy of the Adaptation Fund, respecting Free, Prior, and Informed Consent (FPIC) at all levels.
 23. **Sustainability:** By 2030, the AMI's vision is to become an institutionalized platform for integrated, coordinated, and articulated management of mountain areas in the Andes. By placing the AMI at the centre of this proposal, we're contributing to the achievement of that vision, while promoting country and regional ownership, and phasing of responsibilities from the project to relevant government actors and communities. If the AMI is fully institutionalized in Andean countries, it is more likely to engage with political issues in existing regional adaptation, which, according to the Sixth Evaluation Report of the IPCC (AR6), is a key factor for overcoming barriers to adaptation options in mountain areas long-term (Adler et al. 2022). The fact that this project aims at building upon and articulating existing platforms and networks contributes to its consolidation and the leveraging of funds (opportunities for co-financing), promoting sustainability. Additionally, the project includes the development and updating of sustainability strategies, such as the financial sustainability strategy in Output 1.1.3. Active community participation and ownership will also be promoted through activities to ensure sustainability and transformation beyond project duration.

PART III: IMPLEMENTATION ARRANGEMENTS


24. The project will be implemented by the United Nations Environment Programme (UNEP), providing technical expertise and support for project formulation, implementation, evaluations, and closure. UNEP will implement the project at the regional level from UNEP's Latin America and the Caribbean Office (LACO). Throughout the project, UNEP will ensure that activities are executed in line with the AF and UNEP rules, policies, and requirements.
25. The Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), which serves as the Technical Secretariat of the Andean Mountain Initiative, will be the executing entity at the regional level. Partnerships with local organizations (including NGOs, associations, and community groups) or NIEs will be considered for the execution of the project at the local and national levels. The identification of local partners will be further developed during the concept note formulation, in coordination with participating countries.
26. Watershed committees and academic and research institutions and initiatives will also become key partners for technical and knowledge management support.
27. At the regional level, the Andean Mountains Initiative (AMI) will play a key role in regional coordination and mainstreaming results into national and regional strategies for CCA. The AMI will also facilitate cooperation between countries and project partners and other related initiatives in the region.
28. A Regional Project Steering Committee will be established as part of the implementation arrangements to facilitate cooperation between all project partners and other related initiatives in the region. Further formulation stages will draft a coherent governance/implementation structure. Since the project intends to promote the active participation of multiple stakeholders, including communities and local organizations, local governance structures will be designed to co-lead/design activities on the ground and mobilize communities for greater outreach.

PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government^{xxiv} *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project/programme. Add more lines as necessary. The endorsement letters should be attached as annexes to the project/programme proposal.*

<i>Martin Manuel Illescas, Director of Projects with External Financing of this Ministry, Ministry of Environment and Sustainable Development of Argentina</i>	<i>Date: August 8, 2023</i>
<i>Jenny Mager, Head of the Climate Change Division, Ministry of Environment of Chile</i>	<i>Date: July 31, 2023</i>
<i>María Teresa Becerra Ramírez, Head of the Office of International Affairs, Ministry of Environment and Sustainable Development of Colombia</i>	<i>Date: August 16, 2023</i>
<i>Milagros Sandoval Diaz, General Director of Climate Change and Desertification, Directorate of Climate Change and Desertification of the Ministry of the Environment of Peru</i>	<i>Date: August 16, 2023</i>

B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

<p>I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans for Argentina, Chile, Colombia and Peru and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p>	
<p><i>Name & Signature</i> Implementing Entity Coordinator</p>  <p><small>Mirey Atallah</small></p>	<p>Mirey Atallah Head - Nature for Climate Branch Ecosystems Division UNEP December 7th, 2023</p>
<p>Date: (29 November 2023)</p>	<p>Tel. and email: +254795062; Jessica.troni@un.org</p>
<p>Project Contact Person: Jessica Troni</p>	
<p>Tel. And Email: (+507)6038-8570 jessica.troni@un.org</p>	



República Argentina - Poder Ejecutivo Nacional
1983/2023 - 40 AÑOS DE DEMOCRACIA

Nota

Número: NO-2023-91897597-APN-DGPFYCI#MAD

CIUDAD DE BUENOS AIRES

Martes 8 de Agosto de 2023

Referencia: Endoso Nota de Pre Concepto del Proyecto "AdaptAndes: Mejorando la resiliencia de los socioecosistemas, la gestión del conocimiento y la cooperación y gobernanza regional en los Andes"

A: The Adaptation Fund Board (Email: Secretariat@Adaptation-Fund.org),

Con Copia A: Amparo Quiroga (DGYMP#MAD), Guido Pablo Veneziale (DNPYOAT#MAD), María Celeste Escalada (DGYMP#MAD), María Cecilia Vaquer (DGYMP#MAD),

De mi mayor consideración:

Sres. Fondo de Adaptación

Distinguidos miembros,

En mi calidad de Autoridad Nacional designada para el Fondo de Adaptación en la República Argentina, confirmo que la propuesta de proyecto regional anterior está de acuerdo con las prioridades nacionales del gobierno en la implementación de actividades de adaptación para reducir los impactos adversos y los riesgos que plantea el cambio climático en Argentina.

En consecuencia, me complace respaldar la propuesta de proyecto anterior con el apoyo del Fondo de Adaptación. Si se aprueba, el mismo será implementado por el Programa de las Naciones Unidas para el Medio Ambiente (PNUMA) y ejecutado por el Ministerio de Ambiente y Desarrollo Sostenible de Argentina.

Sin otro particular, aprovecho la oportunidad para expresarles las seguridades de mi más alta y distinguida consideración.

Letter of endorsement from the Government of the Republic of Argentina: Project "AdaptAndes: Enhancing socioecosystems resilience, knowledge management and regional cooperation and governance across the Andes"

The Adaptation Fund Board

Distinguished members,

In my capacity as Designated National Authority for the Adaptation Fund in the Republic of Argentina, I confirm that the above regional project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the Argentinian.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by United Nations Environment Program (PNUMA) and executed by Ministry of Environment and Sustainable Development of Argentina.

Please accept the assurances of my highest consideration and personal esteem.

Sin otro particular saluda atte.

Digitally signed by Gastón Documental Electrónica
Date: 2023.08.08 14:59:02 -03:00

Martín Manuel Illescas
Director General
Dirección General de Proyectos con Financiamiento Externo y Cooperación
Internacional
Ministerio de Ambiente y Desarrollo Sostenible

Digitally signed by Gastón Documental
Electrónica
Date: 2023.08.08 14:59:02 -03:00



ADAPTATION FUND

**Letter of Endorsement by Government
Chile**

July 31th 2023


To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for "AdaptAndes: Enhancing socioecosystems resilience, knowledge management and regional cooperation and governance across the Andes"

In my capacity as designated authority for the Adaptation Fund in Chile, I confirm that the above regional project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the Andean region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Environment Programme (UNEP) and executed by the Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), Technical Secretariat of the Andean Mountain Initiative.

Sincerely,


Ms. Jenny Mager Santos
Head of the Climate Change Division
Ministry of Environment of Chile

Bogotá, D. C. 16 de agosto de 2023 **Radicado: 14002023E2027647**

Señores

FONDO DE ADAPTACIÓN

Correo: Secretariat@Adaptation-Fund.org

ASUNTO: Carta Endoso - Nota de Pre-Concepto. Proyecto: "Vulnerabilidad y Adaptación al Cambio Climático en la Región Andina".

Estimados miembros

En mi calidad de Autoridad Nacional designada ante el Fondo de Adaptación para la República de Colombia, confirmo que la propuesta de proyecto regional denominada: **AdaptAndes, Aumentando la resiliencia socioecosistémica, conocimiento, manejo, cooperación regional y la gobernanza a través de los Andes**", se encuentra acorde a las prioridades de país en materia climática y responde a los compromisos nacionales para la reducción de los impactos adversos, la adaptación y la reducción del riesgo ante el cambio climático en la región Andina.

En consecuencia, me complace respaldar la propuesta de proyecto ante el Fondo de Adaptación. De igual forma, de ser aprobada la iniciativa, será implementada por el Programa de las Naciones Unidas para el Medio Ambiente (PNUMA) y ejecutada por el Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), secretaria técnica de la Iniciativa Andina de Montañas (AMI).

Cordialmente,



Subject: Endorsement for "AdaptAndes: Enhancing socioecosystems resilience, knowledge management and regional cooperation and governance across the Andes".

Distinguished members

In my capacity as designated authority for the Adaptation Fund in Republic of Colombia, I confirm that the regional Project proposal: **"AdaptAndes: Enhancing socioecosystems resilience, knowledge management and regional cooperation and governance across the Andes"**, is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the Andean region.

Accordingly, I am pleased to endorse the above project with support from the Adaptation Fund. If Approved, the project will be implemented by the United Nations Environment Programme (UNEP), and executed by the Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), technical secretariat of the Andean Mountain Initiative (AMI).

Sincerely,



MARÍA TERESA BECERRA RAMÍREZ
Jefe Oficina de Asuntos Internacionales

Proyectó: Jerson Leonardo González Umaña, contratista OAI

Los arriba firmantes declaramos que hemos revisado el presente documento y lo encontramos ajustado a las normas y disposiciones legales y/o técnicas vigentes y, por lo tanto, bajo nuestra responsabilidad lo presentamos para la firma del Remitente





PERÚ

Ministerio
del Ambiente

Viceministerio de
Desarrollo Estratégico de
los Recursos Naturales

Dirección General
de Cambio Climático
y Desertificación

"Decenio de la Igualdad de Oportunidades para mujeres y hombres"
"Año de la unidad, la paz y el desarrollo"

Lima, August 16th 2023

LETTER N° 00086-2023-MINAM/VMDERN/DGCCD

Messrs.

The Adaptation Fund Board

c/o Adaptation Fund Board Secretariat

Washington

United States

Email: Secretariat@adaptation-fund.org

Fax: 202 522 3240/5

Subject : Endorsement for the regional project: "AdaptAndes: Enhancing Socioecosystems Resilience, Knowledge Management and Regional Cooperation and Governance across the Andes".

The Ministry of the Environment of Peru is the governing body of the National Climate Change Strategy of Peru and the Designated Authority for the Adaptation Fund through the General Directorate of Climate Change and Desertification.

On this framework, we received the pre-concept note AdaptAndes: Enhancing Socioecosystems Resilience, Knowledge Management and Regional Cooperation and Governance across the Andes proceeding to assess it. We would like to underline that the project will contribute increasing the resilience of the Andean socio-ecosystems and communities by integrating Ecosystem-based Adaptation (EbA) and Community based Adaptation (CbA) approaches to reduce climate-related risks, improving knowledge and information management around climate change adaptation.

Finally, I am pleased to endorse the pre-concept note mentioned above to apply to Adaptation Fund. If approved, we will ensure that the project is aligned with our climate change adaptation targets and that is duly coordinated between the United Nations Environment Programme (UNEP) and Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN).

We appreciate your attention very much and thank you for your kind consideration.

Sincerely yours,

Milagros Sandoval Díaz

Head of the General Directorate of Climate Change and Desertification

Ministry of the Environment

Designated Authority

CC: VMDERN

File number: 2023421045

This is an authentic printable copy of a document filed in the Ministry of the Environment, applying the provisions of Art. 25 of S.D. 070-2013-PCM and the Third Final Complementary Provision of the S.D. 026-2016-PCM. Its authenticity and integrity can be verified at the website: <https://ecodoc.minam.gob.pe/verifica/view> with the following password: **ku2fn5**

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www.gob.pe/minam



BICENTENARIO
DEL PERÚ
2021 - 2024





Project Formulation Grant (PFG)

Submission Date: August 4, 2023

Adaptation Fund Project ID: N/A

Country/ies: Argentina, Chile, Colombia, Peru

Title of Project/Programme: AdaptAndes: Enhancing socioecosystems resilience, knowledge management and regional cooperation and governance across the Andes.

Type of IE (NIE/MIE): MIE

Implementing Entity: United Nations Environment Programme (UNEP)

A. Project Preparation Timeframe

Start date of PFG	October 2023
Completion date of PFG	December 2024

B. Proposed Project Preparation Activities (\$)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Consultation processes*	Outputs 1-3	7,500
Concept formulation*	Outputs 1-3	12,500
Total Project Formulation Grant		20,000

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation.

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
UNEP		15 December, 2023	Jessica Troni	+254 795 751 062	Jessica.troni@un.org

SOURCES:

Adler, C., P.Wester, I. Bhatt, C. Huggel, G.E. Insarov, M.D. Morecroft, V. Muccione, and A. Prakash. 2022. Cross-Chapter Paper 5: Mountains. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 2273-2318, doi:10.1017/9781009325844.022.

Andean Mountain Initiative (AMI). 2023. Vulnerability and adaptation to climate change in high mountain areas of the Andean region. Regional study organized by the Consortium for the Sustainable Development of the Andean Ecoregion (CONDESAN) and the United Nations Environment Program (UNEP). Prepared by DEUMAN.

Anderson E.P., Marengo J., Villalba R., Halloy S., Young B., Cordero D., Gast F., Jaimes E. & Ruiz D. 2011. Consequences of Climate Change for Ecosystems and Ecosystem Services in the Tropical Andes, pp. 1-19. In: S.K. Herzog, R. Martinez, P.M. Jorgensen & H. Tiessen (Eds.). *Climate Change and Biodiversity in the Tropical Andes*. IAI, SCOPE.

Carilla, J., Araoz, E., Osinaga O, Malizia A, Malizia M, Jiménez J, , Peralvo, M, Garcés A, Lasso G and Llambí, LD. 2023. Long-term environmental and social monitoring in the Andes: state of the art, knowledge gaps and priorities for an integrated agenda. *Mountain Research and Development* 43(2):A1-A9.

Castellanos, E., M.F. Lemos, L. Astigarraga, N. Chacón, N. Cuvi, C. Huggel, L. Miranda, M. Moncassim Vale, J.P. Ometto, P.L. Peri, J.C. Postigo, L. Ramajo, L. Roco, and M. Rusticucci. 2022. Central and South America. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 1689–1816, doi:10.1017/9781009325844.014.

Cuesta F, Llambí LD, Huggel C, Drenkhan F, Gosling WD, Muriel P, Jaramillo R y Tovar C. 2019. New land in the Neotropics: a review of biotic community, ecosystem and landscape transformations in the face of climate and glacier change. *Regional Environmental Change* 19(6):1623–1642. Doi.org/10.1007/s10113-019-01499-3

Cuesta F, Tovar C y Llambí LD, et al. 2020. Thermal niche traits of high alpine plant species and communities across the tropical Andes and their vulnerability to global warming. *Journal of Biogeography* 47(2):408-420. DOI: 10.1111/jbi.13759.

Dupuits E. 2021. Climate change policies in the Andes: Dialogue between scales and perspectives for adaptation. *Propuestas Andinas* № 18. Quito: Adaptation at Altitude, Andean Forests Programme, CONDESAN.

Dupuits E, Llambí LD, Peralvo M. 2022. Implementing climate change adaptation policies across scales: challenges for knowledge coproduction in Andean mountain socio-ecosystems. *Mountain Research and Development* 42(2):A1-A11.

Dupuits E, Garcés A, Llambí LD, Bustamante M. 2023. Strategies for monitoring and evaluation of climate change adaptation: localising global approaches into Andean realities. Preprint-Research Square. DOI: 10.21203/rs.3.rs-2922502/v1.

Iniciativa Andina de Montañas (IAM). 2023. Vulnerabilidad y adaptación al cambio climático en zonas de alta montaña de la región andina. Estudio regional organizado por el Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN) y el Programa de las Naciones Unidas para el Medio Ambiente (PNUMA). Elaborado por DEUMAN.

Instituto Nacional de Investigación en Glaciares y Ecosistemas de Montaña (INAIGEM). 2018. Inventario Nacional de Glaciares: Las Cordilleras Glaciares del Perú. Available in: <https://repositorio.inaigem.gob.pe/items/69842963-64e0-4de9-9c24-f886a5c5a40d>

Llambí, L.D. & Garcés, A. 2021. Adaptation to climate change in the Andes: gaps in understanding and opportunities for knowledge management. Adaptation at Altitude Programm. CONDESAN, SDC. Quito-Ecuador. 62 pp.

Ministerio del Ambiente del Perú (MINAM). 2022. Catálogo de Medidas de Adaptación. Dirección General de Cambio Climático y Desertificación, Viceministerio de Desarrollo Estratégico de los Recursos Naturales.

Postigo J., Peralvo M., López S., Zapata-Caldas E., Jarvis A., Ramírez J. & Lau C. 2012. Adaptación y vulnerabilidad de los sistemas productivos Andinos, pp. 141-172. In: F. Cuesta, M. Bustamante, M.T. Becerra, J. Postigo & J. Peralvo (Eds.) 2012. Panorama andino de cambio climático: Vulnerabilidad y adaptación en los Andes Tropicales. Lima: CONDESAN, SGCAN.

Schoolmeester T., Saravia M., Andresen M., Postigo J., Valverde A., Jurek M., Alfthan B. & Giada, S. 2016. Outlook on Climate Change Adaptation in the Tropical Andes mountains. Mountain Adaptation Outlook Series. Nairobi, Arendal, Vienna, Lima: UNEP, GRID-Arendal, CONDESAN.

Tito R., Vasconcelos H.L. & Feeley K.J. 2017. Global climate change increases risk of crop yield losses and food insecurity in the tropical Andes. *Global Change Biology*, DOI: 10.1111/gcb.13959.

United Nations Development Programme (UNDP). 2015. Generating multiple benefits from Ecosystem-based Adaptation in mountain ecosystems. Learning brief. Global Ecosystem-Based Adaptation in Mountains Programme. Partners: UNEP, IUCN, UNDP, with funding from the Government of Germany.

Vuille, M., Carey, M., Huggel, C., Buytaert, W., Rabatel, A., Jacobsen, D., Soruco, A., Villacis, M., Yarleque, C., Timm, O.E., Condom, T., Salzmann, N., Sicart J.E. (2018). Rapid decline of snow and ice in the tropical Andes—impacts, uncertainties and challenges ahead *Earth-Science Reviews* 176 195–213. <https://doi.org/10.1016/j.earscirev.2017.09.019>.

Annex 1. Key climate change adaptation policy tools at the national level (Dupuits 2021)

Andean country (AMI member)	Mapping of key CCA policy tools at the national level
Argentina	<ul style="list-style-type: none"> • Act No. 27.520 on Minimum Budgets for Adaptation and Mitigation to Global CC, 2019; National Plan for Adaptation and Mitigation to CC, 2019. • National Climate Change Cabinet; Federal Environmental Council (COFEMA), National Climate Change Information System. • National Environmental Planning Program of the Territory, Resolution MayDS 199/23. • National Action Program to Combat Desertification and Mitigation of the Effects of Drought, Resolution MayDS 70/19. • National Sectoral Action Plans; Acts No. 23.919 and No. 25.335: Regional Strategy for the Conservation and Sustainable Use of High Andean Wetlands; Bill on Wetlands; Act No 26.639 on the Protection of Glaciers and the Periglacial Environment; Committee for the Sustainable Development of the Mountainous Regions of the Argentine Republic.
Chile	<ul style="list-style-type: none"> • National Action Plan on Climate Change 2017-2022, National Climate Change Adaptation Plan, Proposed Framework Law on Climate Change (PLMCC). • Council of Ministers for Sustainability and Climate Change (CMSCC), Inter-agency Technical Team on Climate Change (ETICC), Regional Climate Change Committees (CORECC). • National Policy Proposal for Sustainable Mountain Management and Action Plan 2030, National Strategy for Climate Change and Vegetation Resources (ENCCR), CC adaptation plans by sector.
Colombia	<ul style="list-style-type: none"> • Act No. 1.931 on Climate Change, 2018; National Climate Change Adaptation Plan (PNACC). • National Climate Change Council, National Climate Change System (SISCLIMA), Comprehensive Territorial Climate Change Management Plans (PIGCCT), Regional Territorial Climate Change Nodes (NRCC), CONPES 3700: Institutional Strategy for the Coordination of Climate Change Policies and Actions. • Intersectoral Commission on Climate Change (COMICC); Comprehensive Sectoral Climate Change Management Plans (PIGCCS); Strategy for the Integrated Monitoring of Colombia's High Mountain Ecosystems (EMA); Act No. 1.930 for the Comprehensive Management of Paramos; National Plan for Ecological Restoration, Rehabilitation and Recovery of Degraded Areas (PNR), 2015-2035. • Strategy to strengthen the business sector in the management of its climate risks to maintain competitiveness in the Water, Agriculture, Urban Development and Financial sectors.
Peru	<ul style="list-style-type: none"> • Act No. 30.754 Framework Law on Climate Change, 2018; General Environmental Act No. 28.611; Act No. 28.245 Framework Law on the

	<p>National Environmental Management System; National Climate Change Strategy (ENCC).</p> <ul style="list-style-type: none"> • Organic Law of Regional Governments; Regional Climate Change Strategy; Regional Environmental Commissions (CAR); Municipal Environmental Commissions (CAM). • National Plan for Adaptation to Climate Change of Peru: an input for the update of the National Strategy for Climate Change. Ministerial Resolution No. 096-2021-MINAM, June 7, 2021 • Methodological guidelines for the formulation and updating of Regional Climate Change Strategies and their annexes. Ministerial Resolution No. 152-2021-MINAM, August 17, 2021 • Methodological guidelines for the formulation and updating of Local Climate Change Plans and their annexes. Ministerial Resolution No. 196-2021-MINAM, October 18, 2021 • Platform of Indigenous Peoples of Peru to address Climate Change (PPICC); High Level Commission on Climate Change (CANCC); Proposal for a National Policy on Glaciers and Mountain Ecosystems (PNGYEM).
(*)Venezuela	<ul style="list-style-type: none"> • Homeland Plan 2019-2025; Draft Bill on Climate Change, 2016; Organic Law on the Environment, 2006; Criminal Law on the Environment, 2012. • National Climate Change Office. • National Strategy for the Conservation of Biological Diversity 2010-2020 (ENCDB) and its National Action Plan (PAN).
(*)Bolivia	<ul style="list-style-type: none"> • Act No. 071 on the Rights of Mother Earth; Act No. 300 Framework of Mother Earth and Integral Development for Living Well; Act No. 777 of the State's Integral Planning System (SPIE). • National Mechanism for Adaptation to Climate Change, 2007; Plurinational Authority of Mother Earth (APMT); Territorial Plans for Integral Development (PTDI). • Sectoral CC adaptation programs, National Forest and Climate Change Strategy, National Basins Plan 2013-2020, Mother Earth Life Systems, Sectoral Plans for Integral Development (PSDI)
(*)Ecuador	<ul style="list-style-type: none"> • National Climate Change Strategy (ENCC 2012-2025), Draft National Climate Change Adaptation Plan (PLANACC), National Climate Finance Strategy Proposal (EFIC). • Inter-Institutional Climate Change Committee (CICC); Organic Environmental Code (COA); Organic Code of Territorial Organisation, Autonomy and Decentralisation (COOTAD); Decentralised National System of Participatory Planning (SNDPP). • Regional Climate Change Strategies (ERCC); National Forest Restoration Plan 2019-2030.

(*) Andean country and member of the AMI not participating in this project.

Source: Dupuits 2021

ENDNOTES

¹ Thematic areas are: Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

² See <https://indicadores-andinos.condesan.org/>

³ Peru has lost 1,284 km² of glacier surface between 1962 and 2016, which is equivalent to 53.56% of the total area (INAIGEM 2018).

⁴ See <https://adaptationaltitude.org/solutions-portal>

⁵ GLORIA-Andes: Monitoring platform of CC impacts on biodiversity of high mountain Andean ecosystems. See <https://redgloria.condesan.org/>

⁶ Bosques Andinos (Andean Forest Network): See <https://www.bosquesandinos.org/pba/>

⁷ IMHEA: Regional Initiative for Monitoring Andean Ecosystems (IMHEA for its Spanish acronym). See <https://imhea.org/>

⁸ The Andean Mountain Initiative, AMI (or IAM for its Spanish acronym) is a regional platform established in 2007 that gathers the seven Andean states (Argentina, Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela) on a voluntary basis to strengthen regional dialogue and promote sustainable development in the Andes. More information in: <https://iam-andes.org/>

⁹ Global Mountain Ecosystem-based Adaptation (EbA) Flagship Programme in Nepal, Uganda and Peru. UNEP, IUCN and UNDP, sponsored by the Government of Germany.

¹⁰ Andes Adaptation to the Impact of Climate Change in Water Resources Project (AICCA). Development Bank of Latin America (CAF) and Consorcio para el Desarrollo de la Ecorregión Andina (CONDESAN), funded by the Global Environment Facility (GEF).

¹¹ Adaptation at Altitude is a collaborative programme launched and co-supported by the Swiss Agency for Development and Cooperation (SDC). Partners: UNEP, CONDESAN, Mountain Research Initiative, University of Geneva, Stockholm Environment Institute, ZOI Environment Network. See <https://adaptationaltitude.org/>

¹² See <https://adaptationaltitude.org/solutions-portal>

¹³ Glaciares+ - Sustainable watershed management in glacial mountain ecosystems in Peru. See <https://adaptationaltitude.org/solutions-portal/sustainable-watershed-management-in-glacial-mountain-ecosystems-in-peru>

¹⁴ Adaptation to Climate Impacts in Water Regulation and Supply in Colombia. See <https://adaptationaltitude.org/solutions-portal/adaptation-to-climate-impacts-in-water-regulation-and-supply-for-the-area-of-chingaza-sumapaz-guerrero-colombia>

¹⁵ Proyecto Páramo Andino (PPA) in Venezuela, Colombia, Ecuador and Perú. See <https://condesan.org/wp-content/uploads/2017/07/Libro2.pdf>

¹⁶ See <https://mountain.org/>

¹⁷ Funding and implementation of climate change adaptation measures in high mountain indigenous communities through the Fund for the Tungurahua Paramos in Ecuador. See <https://adaptationaltitude.org/solutions-portal/funding-and-implementation-of-climate-change-adaptation-measures-in-high-mountain-indigenous-communities-through-the-fund-for-the-tungurahua-paramos-management-and-the-fight-against-poverty-ecuador>

¹⁸ Reconversion of conventional production systems to traditional - agroecological systems. Asociación Innovadora de Tubérculos Andinos de Boyacá (AITAB). See <https://adaptationaltitude.org/solutions-portal/reconversion-of-conventional-production-systems-to-traditional-agroecological-systems-with-emphasis-on-in-situ-conservation-of-andean-tubers-as-a-climate-change-adaptation-strategy-for-small-producers-in-boyaca-colombia>

¹⁹ Climate-Smart Livestock Production in Ecuador: climate change adaptation for small and medium-sized livestock producers, with special focus on the Imbabura and Loja provinces. See <https://adaptationaltitude.org/solutions-portal/climate-smart-livestock-production-in-ecuador-climate-change-adaptation-for-small-and-medium-sized-livestock-producers-with-special-focus-on-the-imbabura-and-loja-provinces>

²⁰ Enhancing resilience of communities to the adverse effects of climate change on food security, in Pichincha Province and the Jubones River basin. See <https://adaptationaltitude.org/solutions-portal/enhancing-resilience-of-communities-to-the-adverse-effects-of-climate-change-on-food-security-in-pichincha-province-and-the-jubones-river-basin>

²¹ Building on UNEP MEbA's "Microfinance for Ecosystem-based Adaptation: Options, Costs and Benefits". See <https://unepmeba.org/media-resources/>

²² See <https://adaptacionandes.org/>

²³ See <https://puentesenlosandes.condesan.org/>

^{xxiv}Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.