

# Propuestas andinas

Diálogo Andino  
entre la Ciencia y la Política



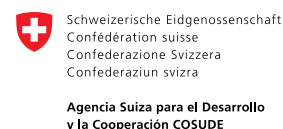
## Climate change policies in the Andes:

dialogue between scales and knowledge for adaptation

# Climate change policies in the Andes:

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The Andean region faces critical challenges due to the growing pressures on landscapes and ecosystems, which are increasingly affecting its outstanding natural patrimony and its diverse socioecosystems. These challenges are further aggravated by the effects of climate change (CC). During the last decade, the region's States have been consolidating their climate policies at the national/subnational level, including nationally determined contributions (NDCs), plans, strategies and laws for adaptation to CC, and sectoral regulations on the subject. At the regional level, the Andean Mountain Initiative (IAM) is in a process of consolidation as a key space for the discussion and coordination of CC and adaptation policies focused on mountain socioecosystems. In this context, the Andean Forests Programme (CONDESAN-Helvetas-SDC) and the Adaptation at Altitude Programme (CONDESAN-SDC) have promoted a synthesis of knowledge at the regional level to provide an update of the current situation of the regulatory framework and climate policies in the Andean countries. This process has been conducted with a multisectoral perspective from the point of view of mountain socioecosystems, with an emphasis on CC adaptation plans and strategies.





Metropolitan Region, Chile.

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# Conceptual and methodological framework

The main question guiding this synthesis process is: **What are the institutional challenges and local perceptions regarding the implementation of climate change adaptation policies in the Andean countries?** To answer this question, the study is organized around two main objectives (Table 1):

1) Review and analyse the regulatory, institutional and policy framework related to CC, as well as current international commitments on the subject. To this end, a **multiscale governance and institutional gap analysis approach** is adopted to synthesize and compare policies, strategies, plans and programmes relevant to CC adaptation as a crosscutting issue. It also includes advances in monitoring and evaluation of adaptation, and takes into account policies and programmes in different sectors (environment, risk management, water, agriculture, forestry and

other land uses, energy and health, among others).

2) Analyse synergies and opportunities as well as possible tensions and resistance that may be generated by the implementation of CC adaptation policies in the territories, among diverse stakeholders. To this end, we use the approach of **co-production of knowledge and policies** involving public authorities at different levels, civil society organizations, international cooperation, academia and the private sector. This analysis is carried out through seven case studies that reflect both the progress and challenges in the implementation of CC adaptation policies in the territories.



Chile.

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**Table 1.** Key concepts and indicators of the study.

Key Concepts	Indicators	Sub indicators
<b>Multiscalar Governance</b>	Interinstitutional coordination	Institutional rules, levels of jurisdiction, decentralization mechanisms.
	Intersectoral coordination	Multisectoral interaction, CC adaptation/mitigation links, interaction with ecosystems.
	Institutional gaps	Effectiveness / legitimacy, inclusion of beneficiaries in decision-making processes / capacity building, information / accountability mechanisms, political stability over time, financing management.
<b>Knowledge co-production</b>	Opportunities	Collaborative processes, co-management / multi-stakeholder networks, social participation, visibility and recognition.
	Local perceptions	Discourse production, professionalization.
	Territorial resistance	Power relations, inequalities among stakeholders.

A qualitative and inductive methodology was used to collect first- and second-hand data through: (a) reviewing grey and academic literature, (b) conducting a survey of national decision makers and experts in the region, (c) conducting a workshop in the framework of the International Mountain Day (December 2020), and (d) conducting 22 semi structured interviews with key actors

at the territorial level: subnational public authorities, non-governmental (NGO) and civil society organizations, representatives of local and indigenous communities, and academia. A mapping of national policy tools on CC adaptation was also conducted as a starting point for the study (Table 2).

**Table 2.** Mapping of key CC adaptation policy tools at the national level.


<p><b>Argentina</b></p>	<ul style="list-style-type: none"> <li>• Act Nº 27,520 on Minimum Budgets for Adaptation and Mitigation to Global CC, 2019; National Plan for Adaptation and Mitigation to CC, 2019.</li> <li>• National Climate Change Cabinet; Federal Environmental Council (COFEMA), National Climate Change Information System.</li> <li>• 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.</li> </ul>
<p><b>Bolivia</b></p>	<ul style="list-style-type: none"> <li>• 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).</li> <li>• National Mechanism for Adaptation to Climate Change, 2007; Plurinational Authority of Mother Earth (APMT); Territorial Plans for Integral Development (PTDI).</li> <li>• Sectoral CC adaptation programmes, National Forest and Climate Change Strategy, National Basins Plan 2013-2020, Mother Earth Life Systems, Sectoral Plans for Integral Development (PSDI).</li> </ul>
<p><b>Chile</b></p>	<ul style="list-style-type: none"> <li>• National Action Plan on Climate Change 2017-2022, National Climate Change Adaptation Plan, Proposed Framework Law on Climate Change (PLMCC).</li> <li>• Council of Ministers for Sustainability and Climate Change (CMSCC), Inter-agency Technical Team on Climate Change (ETICC), Regional Climate Change Committees (CORECC).</li> <li>• National Policy Proposal for Sustainable Mountain Management and Action Plan 2030, National Strategy for Climate Change and Vegetation Resources (ENCCRV), CC adaptation plans by sector.</li> </ul>

<p><b>Colombia</b></p>	<ul style="list-style-type: none"> <li>• Act Nº 1,931 on Climate Change, 2018; National Climate Change Adaptation Plan (PNACC).</li> <li>• 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.</li> <li>• 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.</li> </ul>
<p><b>Ecuador</b></p>	<ul style="list-style-type: none"> <li>• National Climate Change Strategy (ENCC 2012-2025), Draft National Climate Change Adaptation Plan (PLANACC), National Climate Finance Strategy Proposal (EFIC).</li> <li>• 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).</li> <li>• Regional Climate Change Strategies (ERCC); National Forest Restoration Plan 2019-2030.</li> </ul>
<p><b>Peru</b></p>	<ul style="list-style-type: none"> <li>• Act Nº 30,754 Framework Law on Climate Change, 2018; General Environmental Act Nº 28,611; Act Nº 28,245 Framework Law on the National Environmental Management System; National Climate Change Strategy (ENCC); Proposed National Climate Change Adaptation Plan.</li> <li>• Climate Change Adaptation and Mitigation Action Plan (PAAMCC), 2010; Organic Law of Regional Governments; Regional Climate Change Strategy; Regional Environmental Commissions (CAR); Municipal Environmental Commissions (CAM).</li> <li>• 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).</li> </ul>
<p><b>Venezuela</b></p>	<ul style="list-style-type: none"> <li>• Homeland Plan 2019-2025; Draft Bill on Climate Change, 2016; Organic Law on the Environment, 2006; Criminal Law on the Environment, 2012.</li> <li>• National Climate Change Office.</li> <li>• National Strategy for the Conservation of Biological Diversity 2010-2020 (ENCDB) and its National Action Plan (PAN).</li> </ul>

# A perspective from the global scale to the Andean region



Chimborazo volcano, Ecuador.

 @ Emilie Dupuits



At the global level, CC adaptation policies have advanced over the last five years in terms of: (a) supporting countries in formulating their national adaptation plans and nationally determined contributions (NDCs), (b) launching new climate financial instruments for developing countries, and (c) global reporting and assessment of progress on CC adaptation. One of the major achievements through the international negotiations has been to make available to countries, alongside national efforts, relevant information and funds to accelerate adaptation to CC (Bárcena et al. 2020).

In the Andean region, several countries have received support from various international bodies for the formulation or implementation of their NDCs. One example is the LatinoAdapta Project—funded by Canada's International Development Research Centre (IDRC)—which seeks to strengthen government capacities to implement NDCs (Argentina and Chile). Another example is the EU-funded EUROCLIMA+ project, which provides support for the design of national climate laws and strategies, as well as NDC planning (Chile and Ecuador). In addition, several instruments have been created for developing countries (e.g., the Global Ecosystem-based Adaptation Fund), aimed at strengthening CC adaptation policies in the Andean region. Finally, over the last five years, several spaces have been consolidated at the global level for updating and

evaluating progress on CC adaptation (e.g., the Adaptation Committee of the United Nations Framework Convention on Climate Change, UNFCCC; the High-Level Political Forum on Sustainable Development Goals, SDGs; the World Summit for Climate Action). Through these advances, it is evident how the Andean region has made efforts to assume its international commitments.

On the other hand, at the global level, a major challenge is the complexity of the institutional architecture, which translates into pressure to formulate national policies and the difficulty of monitoring their concrete implementation. It is therefore a priority to consolidate regional instruments and platforms in the Andes that can promote articulation between the different levels and generate common goals and indicators that are comparable between countries in the region. The development of several regional CC adaptation projects in Andean mountain socioecosystems demonstrates the relevance and priority of the environmental agenda for international and regional cooperation agencies and national governments (Table 3).

**Table 3.** Examples of recent CC adaptation instruments and platforms at the Andean regional level.

- Scientific Research Network on Climate Change (RICCC) - Pacific Alliance 2014.
- Andean Disaster Risk Management Strategy for the period 2017-2030 (CAPRADE) - CAN 2017.
- Strategic Agenda on Climate Change Adaptation in the Andes Mountains - IAM 2018.
- Andean Environmental Charter – CAN 2020.
- Andean Environmental Technology Platform Project – CAN 2020.
- XXII Forum of Environment Ministers of Latin America and the Caribbean - CELAC 2021.

The Andean Mountain Initiative (IAM) is integrated by the seven countries that share the Andes: Argentina, Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela. It was created in 2002 with the objective of generating and strengthening a space for regional dialogue aimed at the development of coordinated actions in the sub-region. The IAM has been consolidated as a space for regional integration on sustainable mountain development and CC over the last five years. The IAM Strategic Agenda on Climate Change Adaptation was published in 2018 with the participation of official representatives and experts from the seven countries of the region. Its main objectives are to reduce the vulnerability of the groups most affected by CC; to strengthen the adaptation and resilience processes of communities through sustainable agriculture, grazing and food production; and, to promote adaptive water management under extreme climate conditions, among others.

On the other hand, a proposal for the Adaptation Fund, which would be managed by the IAM, is currently in the design phase. CONDESAN, in its role as Technical Secretariat for the IAM, is currently working on the design of a research agenda for long-term integrated monitoring of socio-environmental indicators and in the development of a platform to facilitate access to this information in the Andes. In addition, a major challenge is to move towards the formalisation of platforms such as the IAM, which are not binding yet.

The declaration of the Andean Environmental Charter in 2020 reaffirms the potential of the Andean Community (CAN)—Bolivia, Colombia, Ecuador and Peru—as a regional cooperation body for the definition of environmental indicators and CC mitigation and adaptation measures. This regional environmental agenda is linked to the CAN's track record in promoting research and monitoring activities in the Tropical Andes, under

the priority areas of CC, biodiversity and integrated water resource management (Cuesta et al. 2012). In addition, starting in the 2000s, CAN contributed to the implementation of several pioneering projects in the area of CC adaptation, such as the Project for Adaptation to the Impacts of Glacial Retreat (PRAA), the Climate Change and Environment Project in the Economic and Social Cohesion sector (ANDESCLIMA) and support for regional socio-environmental monitoring schemes through regional

monitoring networks such as GLORIA-Andes (Maldonado et al. 2012, Cuesta et al. 2017, Llambí & Garcés 2020).

Although the countries of the region have made progress in incorporating environmental protection into decision-making processes, they still face difficulties in coordinating climate policies, on the one hand; and development, land-use planning and sectoral policies, on the other (Bárcena et al. 2020).

## Andean Mountain Initiative

MEMBER COUNTRIES



# Comparative analysis

## in the Andean countries



Laguna de Pozuelos Biosphere Reserve, Argentina.

 @ Kimon Berlin

An accelerated dynamic can be highlighted in the last five years in the adoption of climate policies in the Andean countries within the framework of the UNFCCC objectives, compared to the situation prior to 2015 (Maldonado et al. 2012, Schoolmeester et al. 2016). This is evidenced by the recent adoption of specific policy tools on CC adaptation through the approval and implementation of NDCs and their updates, as well as CC plans, strategies or legislation. In these documents, the competences of public institutions on CC are delimited and inter-institutional arrangements for managing the issue are consolidated. Another important advance is the design and approval of policies specifically focused on mountain socioecosystems and CC, as is the case in Argentina (Committee for the Sustainable Development of Mountain Regions), Chile (Proposal for a National Policy on Sustainable Mountain Management and the 2030 Action Plan), Colombia (Act N° 1,930 on Paramos) and Peru (Proposal for a National Policy on Glaciers and Mountain Ecosystems). Mountain working groups have also been established in several countries (e.g., Argentina, Chile, Peru, Venezuela).

On the other hand, the Paris Agreement poses the challenge of moving from a stage of designing CC adaptation policies to a stage of effective implementation and monitoring through the participation of various

stakeholders. Perceptible and demonstrable results are expected, which require the design of evaluation and monitoring systems for CC adaptation measures. To this end, it is essential to use mechanisms for social participation and co-creation of local and techno-scientific knowledge in order to legitimise the information, which will contribute to the prioritisation of investments and reduce power asymmetries and socio-environmental conflicts (Mills-Novoa et al. 2020).

Based on the literature review, the survey conducted and interviews with key stakeholders, three central axes were identified that reflect the progress and challenges of CC adaptation policies in the Andean region in the last five years (Table 4): (a) integration and visibility of mountain socioecosystems, (b) intersectoral coordination mechanisms, and (c) social participation processes and opportunities for institutionalisation of local knowledge.

**Table 4.** Summary of progress, challenges and opportunities of adaptation to CCA policies in the Andean countries.

<b>SUMMARY OF PROGRESS, CHALLENGES AND OPPORTUNITIES</b>	
<p><b>Inter-institutional Coordination</b></p>	<p><b>PROGRESS</b></p> <p>All countries have defined the competences of a national authority for CC management, which strengthens the interinstitutional coordination on adaptation policies. All seven countries have adopted climate policies (plans, strategies and/or legislation) at national level and have formulated at least their first NDCs. In addition, four countries have submitted their updated NDCs in 2020 and have formulated long-term strategies to 2050, demonstrating ambitious CC targets (Argentina, Chile, Colombia, Peru).</p> <p><b>CHALLENGES AND OPPORTUNITIES</b></p> <p>Some countries are still in the process of approving their national plans, strategies or laws on adaptation to CC due to mandates, economic or political priorities. The challenge is then to get these policies approved in order to advance in their concrete implementation and have a real impact at the territorial level. One opportunity is to learn from the progress made by some countries in fulfilling international commitments to update NDCs and formulate long-term CC strategies.</p>
<p><b>Intersectoral Coordination</b></p>	<p><b>PROGRESS</b></p> <p>Most countries have formulated sectoral CC adaptation plans (Argentina, Bolivia, Chile, Colombia, Ecuador, Peru) and two countries have specific institutions for multi-sectoral coordination at the national level (Intersectoral Commission on Climate Change -COMICC, Colombia; High Level Commission on Climate Change - CANCC, Peru). In addition, two countries have sectoral planning tools at sub-national level (Bolivia and Colombia).</p> <p><b>CHALLENGES AND OPPORTUNITIES</b></p> <p>A major challenge is the consolidation of multi-sectoral platforms at the national level and the concrete application of these instruments to address the recurrent challenges of coordination between the environmental and agricultural sectors in terms of adaptation to CC. On the other hand, several national or subnational CC policies have been built around an integrating cross-cutting transversal theme (water, forests or sustainable agriculture), which represents an opportunity for coordination.</p>
<p><b>Assessment and Monitoring</b></p>	<p><b>PROGRESS</b></p> <p>Three countries are developing national mechanisms for evaluating and monitoring CC adaptation measures (Argentina, Chile, Colombia) through national systems of environmental indicators, monitoring boards or specific targets set out in their NDCs. Another advance is the ongoing process for the formulation of the National Policy on Glaciers and Mountain Ecosystems in Peru.</p>


	<p><b>CHALLENGES AND OPPORTUNITIES</b></p> <p>On the one hand, a major challenge is that these mechanisms are still in the design stage, so concrete data are not yet available. On the other hand, there are opportunities for regional collaboration for the discussion and exchange of experiences on long-term integrated monitoring of socio-environmental indicators and follow-up of CC adaptation measures that complement national efforts (e.g., Research Agenda and Platform for Integrated Monitoring and Analysis of Socio-environmental Indicators in the Andes - CONDESAN, Proposal for an Andean Environmental Technology Platform - CAN Environmental Charter).</p>
<p><b>Mountain Policies and CC</b></p>	<p><b>PROGRESS</b></p> <p>Four countries have adopted or are formulating specific national policies on mountain socioecosystems and CC, around high Andean wetlands and glacial and periglacial systems (Argentina), mountains (Chile and Peru) and paramos (Colombia). In addition, Colombia is working on the Strategy for the Integrated Monitoring of High Andean Ecosystems (EMA). Moreover, the NDCs of several countries are directly or indirectly linked with mountains (e.g., sustainable management in mountain watersheds, glacier retreat, early warning systems and risk management).</p> <p><b>CHALLENGES AND OPPORTUNITIES</b></p> <p>A key challenge is to increase the visibility of the ecological, socio-productive and cultural diversity of mountain socioecosystems. This can be achieved for example through the strengthening of mountain focal points as spaces for collaboration at the national level. There is an opportunity for regional exchange of experiences and policies on mountain ecosystems and adaptation to CC due to the similar characteristics and challenges faced by the Andean countries. The IAM can play a key role in this context, but it may be necessary to evolve to more formal binding mechanisms.</p>
<p><b>Social Participation and Knowledge-based Dialogue</b></p>	<p><b>PROGRESS</b></p> <p>All the countries mention social participation in their national climate policies as a guiding principle, through citizen consultation mechanisms (Argentina, Chile), territorial planning (Bolivia) or subnational coordination roundtables (Colombia, Ecuador). An innovative experience is, for example, the creation of the Platform of Indigenous Peoples of Peru to address CC (PPICC).</p> <p><b>CHALLENGES AND OPPORTUNITIES</b></p> <p>The biggest challenge is the effective implementation of platforms and mechanisms to link civil society with decision-making processes. Potential opportunities that promote this effective coordination of civil society include the Water Summits in Bolivia, Biosphere Reserves, Model Forests, among others. In addition, a key opportunity is to enhance co-production processes between techno-scientific and local knowledge on CC, both for the scaling up of local knowledge on CC and for local training on the use of technical and scientific tools.</p>

# Case studies:

## dialogue between scales and perspectives on climate adaptation



Sierra Nevada of Santa Marta, Colombia.

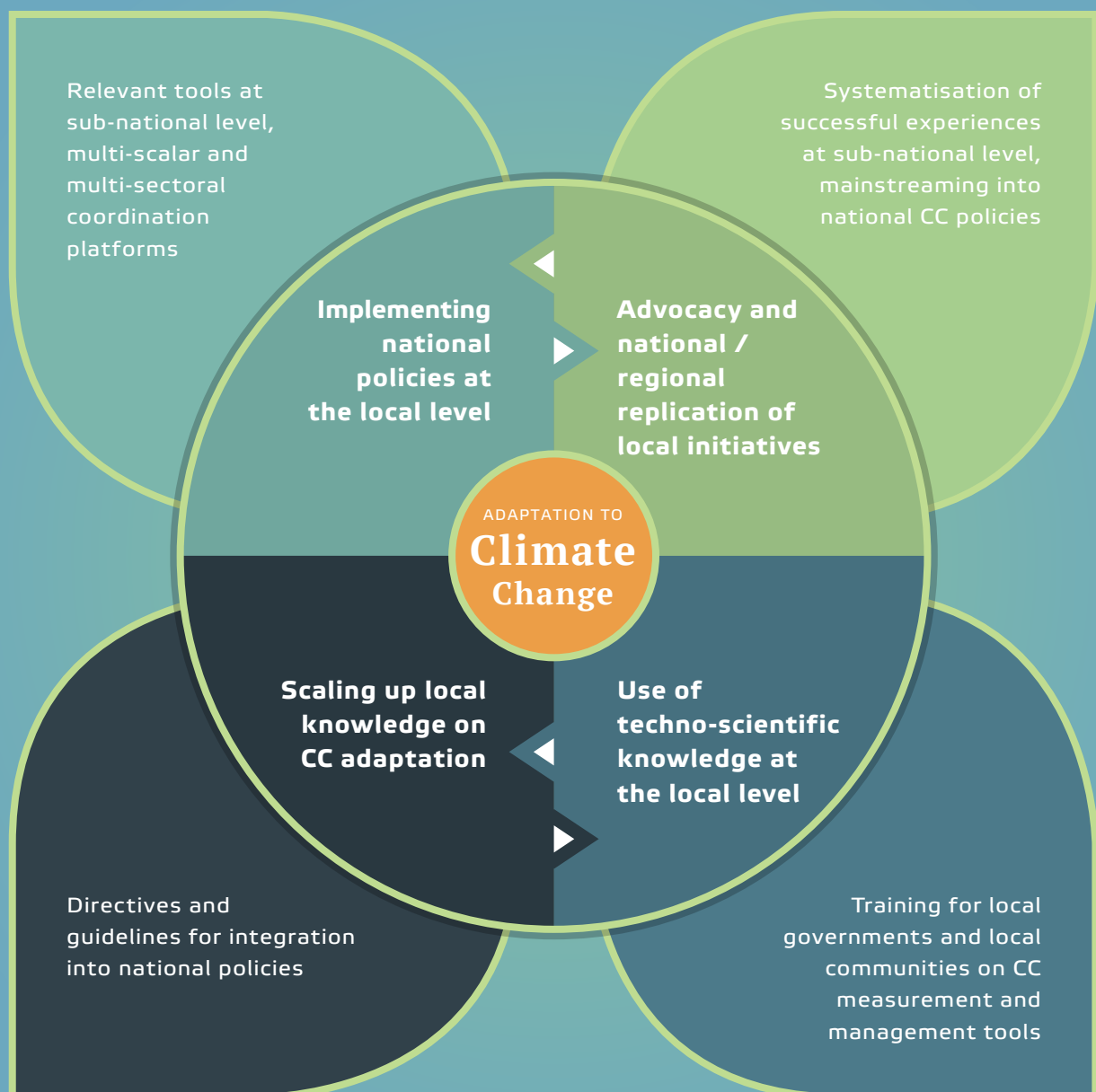
 @ Frank Kehren



Seven case studies were selected at provincial/local level, in an attempt to capture the diversity of socio-environmental, ecosystemic and institutional contexts across the Andes, in order to analyse—on the one hand—common patterns in the implementa-

tion processes of national CC adaptation policies in local contexts, and—on the other hand—opportunities for national advocacy and regional replication of local initiatives (Figure 1).

**Figure 1.** Dynamics for the dialogue of scales and knowledge for adaptation to CC.



# Location and characteristics of the case studies

## 01 Claro River Basin, Los Nevados National Park, Colombia (*glacier, Andean paramo, wetlands and high Andean forests*)

- Environmental restoration, water management, sustainable uses, environmental monitoring.
- Pilot Integrated Monitoring Strategy for High Andean Ecosystems (EMA) - IDEAM, IAvH, CONDESAN

📷 @ Andrew Neild

## 02 Kayambi Community Water Protection Area, Ecuador (*Andean paramo*)

- Community management of water and the paramo.
- Proposal for a Plurinational Water Fund - Confederation of the Kayambi people, Municipality of Cayambe, IEDECA.

📷 @ Cecilia Puertas

## 03 Andean Chocó Biosphere Reserve, Ecuador (*Andean forests*)

- Conservation, reforestation, sustainable farming and livestock management.
- Model of sustainable rurality (Ordinance 137) and Model Forest Network – Andean Chocó Association, Environmental Secretariat of the DMQ.

📷 @ Emilie Dupuits




SOUTH AMERICA

#### 04 Cañete River Basin, Nor Yauyos Cochas Landscape Reserve, Peru (*wet puna*)



- Environmental conservation, reforestation, peasant agriculture, hydrological services.
- Conservation and Sustainable Use of High Andean Ecosystems through Payment for Environmental Services (MERESE-FIDA) - SERNANP.

 @ Michell León / MERESE

#### 05 Municipalities of Titora and Tiraque, Cochabamba, Bolivia (*humid puna, yungas, valleys*)



- Sustainable management of agrobiodiversity, community-based adaptation and ancestral knowledge.
- Proposal for a Municipal Law for the Protection of Water Recharge Zones - Titora Life System, APMT, AGRECOL Andes.

 @ Wanderley Ferreira

#### 06 Laguna de Los Pozuelos Biosphere Reserve, Argentina (*high Andean wetlands, puna*)



- Sustainable livestock management, environmental restoration, water management.
- Conserving High Andean Wetlands in alliance with local communities - Wetlands Foundation, Secretariat of Family Agriculture of the Province of Jujuy.

 @ Ron Knight

#### 07 Municipality of San José de Maipo, Chile (*High Andean mountains, lakes, glaciers*)



- Sustainable agriculture, regenerative farming, sustainable livestock management.
- Municipal capacity building for the protection and monitoring of Mountain Biological Corridors (GEF-Mountain) - MMA, Municipality of San José de Maipo.

 @ GEF-Montaña

The following is a synthesis of the analysis of the seven case studies, focusing on the two key concepts of knowledge co-production and multiscale governance, and their related variables: inter-institutional and intersectoral coordination, social participation, productive alternatives, production and access to information (Table 5). These five dimensions appeared as the most central and problematic throughout the study at the territorial scale, in terms of the creation of spaces for

collaboration, conflict resolution between sectors and stakeholders' interests, and coordination between scales and stakeholders' knowledge systems. This comparative analysis illustrates, on the one hand, the institutional challenges and local perceptions of the people interviewed regarding the implementation of CC adaptation policies in their territories and, on the other hand, the potential for replication of local initiatives at the national and regional levels.

**Table 5.** Summary of the results about the socio-political analysis of case studies.

VARIABLE	CASE STUDIES
<p><b>Inter-institutional Coordination</b></p>	<p><b>PROGRESS</b></p> <p>The most relevant and effective CC policy tools at the local level are those that have a specific thematic dimension or design elements that allow them to adapt to variation in local contexts. The following are examples that include one of these attributes:</p> <ol style="list-style-type: none"> <li>1) Water resources: Law on Mechanisms for the Remuneration of Ecosystem Services, Peru; Organic Law on the Use and Exploitation of Water Resources, Ecuador.</li> <li>2) Protection of wetlands and paramos: Act Nº 1,930 for the Comprehensive Management of Paramos, Colombia; Bill on Wetlands, Argentine.</li> <li>3) Environmental restoration: National Plan for Ecological Restoration, Rehabilitation and Recovery of Degraded Areas, Colombia.</li> </ol> <p><b>CHALLENGES AND OPPORTUNITIES</b></p> <p>In most cases, local initiatives are not explicitly linked to CC strategies or policies at the national level, revealing the limits of the 'climatisation' process (Dupuits 2020a). This suggests the need to link local tools more explicitly to national CC adaptation policies by recognising that everything related to socioecosystem management contributes to adaptation. Strategies for more effective coordination include the design of guidelines for the further integration of subnational and local socioecosystem management instruments into national CC policies—e.g., municipal ordinances, land-use plans, etc.—and the creation of spaces for capacity building and joint work between national and local authorities—e.g., territorial multi-thematic roundtables.</p>

Governance spaces or instruments have been created around CC adaptation at the sub-national level, which should be strengthened in national policies—e.g., Regional Action Plans on Climate Change, Chile; Manual of Good Municipal Practices for Biodiversity Management, Chile; Platform for Good Governance (PBG) of the Cañete Basin, Peru; Grouping of Municipalities of the Andean Chocó, Ecuador.

## Intersectoral Coordination

### PROGRESS

Policy instruments have been created at the sub-national level or through pilot programmes, which have the potential to improve intersectoral coordination around CC, especially between the environment and agriculture sectors, which face recurrent tensions—e.g., the Soil, Water and Forest Conservation District, Ministry of Agriculture, Chile; the Strategy for Integrated Monitoring of High Mountain Ecosystems in Colombia (EMA), Colombia; EMAPA Pilot Plan of Interventions, Cañete, Peru.

### CHALLENGES AND OPPORTUNITIES

An opportunity for replication and learning is linked to the implementation or proposal of instruments focused on specific sectors such as wetland protection, family and peasant agriculture and forest restoration, which include the issue of CC adaptation in a cross-cutting basis and promote cross-sectoral mechanisms—e.g., Bill on Wetlands, Argentine; Ministerial Resolution Nº 464 on Peasant, Family and Community Agriculture, Colombia; National Forest Restoration Plan and Native Forest Conservation Programme, Ecuador (Wiegant et al. 2020).

## Social Participation

### PROGRESS

Three types of mechanisms for social participation at the territorial level are highlighted, which should be strengthened in national CC policies:

1. Management plans and committees for natural protected areas, landscape reserves and biosphere reserves: Management Plan for the Laguna de Los Pozuelos Natural Monument and Biosphere Reserve (MNLPR), Argentine; Municipal Environmental Ordinance, San José de Maipo, Chile; Management Committee of the Andean Chocó Biosphere Reserve, Ecuador; Master Plan for the Nor Yauyos Cochabamba Landscape Reserve, Peru.
2. Master plans, municipal laws, grouping of municipalities and ordinances at the sub-national level: Municipal Bill for the Protection of Water Replenishment Areas, Totorá, Cochabamba, Bolivia; Conservation District Master Plan, San José de Maipo, Chile.
3. Civil society summits and networks: Water Summit, Cochabamba, Bolivia; Forest School Network of the Andean Chocó Grouping of Municipalities, Ecuador.

### CHALLENGES AND OPPORTUNITIES

In terms of challenges, planning and policy implementation horizons do not match local-level processes—e.g., agroecological transitions, restoration of eco-

system functions. In addition, a focus on urban-rural links in the Andes could facilitate incentive mechanisms for conservation, restoration and sustainable production through access to better markets, payment for ecosystem services, among others.

There are coordination efforts between local spaces for social participation and the national level, which can be replicated through their participation and decision-making mechanisms—e.g., Platform for Good Governance of the Cañete River Basin, Peru; Proposal for the creation of a governance platform for the Chocó Andean Biosphere Reserve, Ecuador.

### **Productive-adaptive Alternatives**

#### **PROGRESS**

The implementation of sustainable and adaptive-productive alternatives for agricultural and livestock production is a central point in most CC adaptation plans and programmes at the local level. It highlights the key role of municipalities in partnership with local communities for the implementation of these productive and adaptive CC alternatives:

- Sustainable Livestock Grazing Management Plan, and Plan for the Management and Restoration of Meadows, Laguna de los Pozuelos, Argentina.
- Livestock Pilot Plan with the community of Las Tórtolas, Municipality of San José de Maipo, Chile.
- Conservation and Sustainable Use Areas (ACUS), Ecuador.
- Metropolitan Ordinance Nº 137; Special Plan for the Use and Occupation of the Land of the Andean Chocó Grouping of Municipalities, Ecuador.
- Municipal Ordinance Nº 04-CMC-2020 for Land Use and Management Plan of Cayambe Canton, Ecuador.
- Pilot Plan for Interventions in the Peasant Community of Miraflores, Peru.

#### **CHALLENGES AND OPPORTUNITIES**

There is an important challenge of sustainability in the implementation of these productive alternatives, which must be guaranteed with the consolidation of governance spaces from the State, such as the grouping of municipalities. Another challenge is to recognise the links between the context in which production measures are implemented and their influence on adaptation to CC, and to understand the effect of changes in land use on socioecosystem services.

### **Production and Access to Information**

#### **PROGRESS**

Co-production between technoscientific and local knowledge is key for managing and monitoring adaptation to climate change (Lara and Vides-Almonacid 2014, Mathez-Stiefel 2016). On the one hand, there are attempts to scale up ancestral climate knowledge into national public policy—e.g., Bioindicators and Pachagramas, Cochabamba, Bolivia. On the other hand, municipalities can ask local stakeholders to make better use of techno-scientific knowledge to validate their community demands—e.g., Proposal for a Plurinational Water Fund, Cayambe, Ecuador.

## CHALLENGES AND OPPORTUNITIES

The main challenge is the difficulty for some local actors in producing information on CC according to the technical and scientific parameters required by public entities, which leads to their marginalisation from decision-making processes at the (sub)national level (Dupuits 2020b). One opportunity to resolve this limitation is to strengthen alliances between academia and local communities to cross-validate relevant ancestral/technical knowledge on CC, to train local actors in the use of techno-scientific tools for climate measurement or management and improve the knowledge of scientists and technicians on traditional perspectives and views.

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Cotopaxi province, Ecuador.

 @ Emilie Dupuits



# Suggested action steps



Cotopaxi province, Ecuador.

📷 @Emilie Dupuits



## For decision-makers at the national level

- ▶▶ Develop and strengthen spaces, processes and mechanisms for the **participatory and territorial construction of national CC adaptation policies**, which allow capitalising on the regulatory tools most used by local stakeholders (e.g., municipal ordinances and laws, land use plans, community or municipal conservation areas), and the most relevant sectoral policies (e.g., guidelines for addressing forestry and agroforestry in National Adaptation Plans, FAO).
- ▶▶ Systematise **tools and identify sub-national and local spaces that adopt a cross-sectoral and ecosystemic approach** to inform and influence national public policies and their effective implementation (e.g., municipal ordinances; land-use plans; territorial zoning with integrated landscape approaches, biodiversity, socio-cultural dynamics, CC, land use and hydrology, among others).
- ▶▶ Build **spaces for training and collaborative work** between national and local authorities (e.g., territorial multi-thematic roundtables).

## For experts in international and regional cooperation

- ▶▶ Design strategies for **assessment and monitoring** of international cooperation programmes and CC adaptation policies to ensure the transition to sustainable production practices and ecosystem and community-based adaptation (e.g., capacity building for municipalities and local communities, validation of mechanisms like grouping of municipalities or other long-term multi-stakeholder governance platforms).
- ▶▶ Promote **integrated monitoring** approaches, understanding the integrity of the territory as part of the socioecosystem context of the site where measures are implemented, as well as biodiversity-water-soil interactions (e.g., Strategy for the Integrated Monitoring of Colombia's High Mountain Ecosystems, EMA).
- ▶▶ **Strengthen regional platforms** such as the IAM to take advantage of **international funding and cooperation opportunities** (e.g., Global Ecosystem-based Adaptation Fund, UNFCCC Adaptation Committee, High Level Political Forum on the SDGs, Global Climate Action Summit).
- ▶▶ Consolidate **international initiatives and funds focused on CC management research in mountain socioecosystems** (e.g., The Nairobi Work Programme, United Nations University;

International Research and Training Programme on Sustainable Management of Mountain Areas, Mountain Partnership Secretariat of the Food and Agriculture Organization of the United Nations, FAO).

## For civil society and academia stakeholders

- ▶▶ Build mechanisms and spaces for **co-production between techno-scientific and local/ancestral knowledge** on CC adaptation (e.g., directives and guidelines for mainstreaming local knowledge into national climate policies, guidelines for monitoring ecological processes or water quality).
- ▶▶ Promote **tools for local stakeholders to make better use of techno-scientific knowledge in land management** that respond to local needs and priorities, and strengthen their resilience to CC (e.g., implementation of easily-accessible, user-friendly and cost-effective technologies for local communities; small-scale infrastructure projects managed by communities).
- ▶▶ Bridge academic research with policy processes of **institutionalisation of relevant local and ancestral knowledge**, to assess environmental sustainability and adaptive value in CC scenarios of traditional management practices and strategies—e.g., Participatory Action Research (PAR) methodologies; inclusion of economic assessment, loss and damage referents; Andean Climate Conception Project, Universidad Mayor de San Simón in Cochabamba, Bolivia.



## For private sector stakeholders

- ▶▶ Integrate private sector stakeholders into collaborative multi-stakeholder spaces that provide CC adaptation solutions (e.g., water funds with financial contributions from private or public hydropower or drinking water companies).

## REFERENCES

- Bárcena A., Samaniego J.L., Peres W. & Alatorre J.E. 2020. *La emergencia del cambio climático en América Latina y el Caribe: ¿Seguimos esperando la catástrofe o pasamos a la acción?* [The climate change emergency in Latin America and the Caribbean: Are we still waiting for a catastrophe or are we taking action?] CEPAL Books, Nº 160 (LC/PUB.2019/23-P), Santiago: CEPAL.
- Cuesta, F., Bustamante, M., Becerra, M.T., Postigo, J. & Peralvo, J. (Eds.) 2012. *Panorama andino de cambio climático: Vulnerabilidad y adaptación en los Andes Tropicales* [Andean Climate Change Landscape: Vulnerability and Adaptation in the Tropical Andes]. Lima: CONDESAN, SGCAN.
- Cuesta F., Muriel P., Llambí L.D. et al. 2017. Latitudinal and altitudinal patterns of plant community diversity on mountain summits across the tropical Andes. *Ecography* 40(12): 1381-1394.
- Dupuits E. 2020a. Reversing Climatisation: transnational grassroots networks and territorial security discourse in a fragmented global climate governance. *International Politics*, <https://doi.org/10.1057/s41311-020-00256-2>
- Dupuits E. 2020b. *Naviguer à contre-courant? Les mobilisations transnationales pour une gouvernance communautaire de l'eau et des forêts en Amérique Latine* [Sailing against the stream? Transnational mobilisations for community governance of water and forests in Latin America]. Rennes: Presses Universitaires, <http://www.pur-editions.fr/detail.php?idOuv=5005>
- Lara, R. & Vides-Almonacid, R. (Eds.) 2014. *Sabiduría y adaptación: El valor del conocimiento tradicional en la adaptación al cambio climático en América del Sur* [Wisdom and adaptation: The value of traditional knowledge in adapting to climate change in South America]. Quito: UICN.
- Llambí, L.D. & Garcés, A. 2020. *Adaptación al cambio climático en los Andes: Vacíos y prioridades para la gestión del conocimiento* [Adaptation to Climate Change in the Andes: Gaps in understanding and opportunities for knowledge management]. Quito: A@A, CONDESAN, SDC.
- Maldonado G., Becerra M.T. & Cuesta F. 2012. Marco institucional y normativo en los países de la subregión Andina para abordar el tema de cambio climático en el marco de la Convención Marco de Naciones Unidas sobre Cambio Climático [Institutional and regulatory framework in the countries of the Andean sub-region to address the issue of climate change in the framework of the United Nations Framework Convention on Climate Change], pp. 221-261. 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* [Andean Climate Change Outlook: Vulnerability and Adaptation in the Tropical Andes]. Lima: CONDESAN, SGCAN.
- Mathez-Stiefel S.L. 2016. *Agroforestería para la adaptación al cambio climático en los Andes: Aprendiendo de los conocimientos locales* [Agroforestry for climate change adaptation in the Andes: Learning from local knowledge]. Policy Brief Nº 36. Lima: ICRAF.
- Mills-Novoa M., Boelens R., Hoogesteger J. & Vos J. 2020. Governmentalities, hydrosocial territories & recognition politics: The making of objects and subjects for climate change adaptation in Ecuador. *Geoforum* 115, pp. 90-101, <https://doi.org/10.1016/j.geoforum.2020.06.024>
- 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.
- Wiegant D., Peralvo M., van Oel P., Dewulf A. (2020) *Five scale challenges in Ecuadorian forest and landscape restoration governance*, Land Use Policy, Vol. 96, Art. 104686. <https://doi.org/10.1016/j.landusepol.2020.104686>

## EXTERNAL LINKS

-  [Proceedings of the roundtable on climate change policies and adaptation strategies in the Andes: a multisectoral view from the mountains - Condesan \(In Spanish\)](#)
-  [Map of Case Studies | weADAPT | Climate change adaptation planning, research and practice](#)

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