POLICY BRIEF

October 2025

ADAPTATION AT ALTITUDE

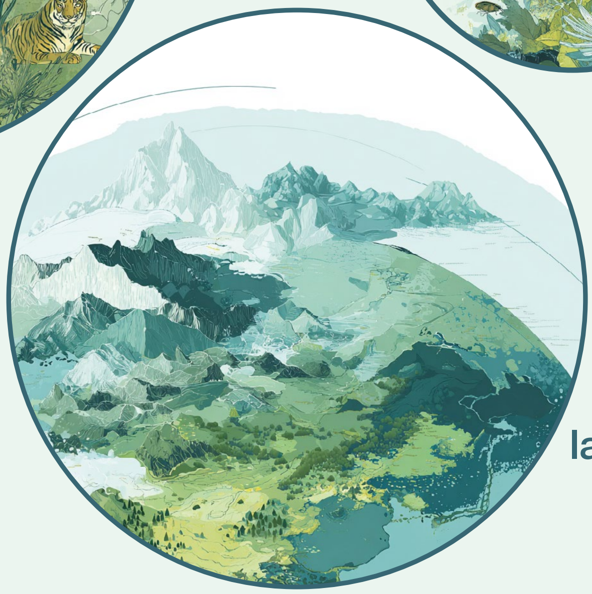
Mountain Ecosystems for a Resilient Future

Policy Pathways under the Conventions on Biological Diversity (CBD) and Climate Change (UNFCCC)

1. Introduction

Mountain ecosystems are among the most sensitive and rapidly changing environments on the planet, facing compounding pressures from climate change and biodiversity loss (Kohler et al. 2009, Knight 2022). Mountains provide vital ecosystem services such as water regulation, carbon storage, and habitats for unique biodiversity and agrodiversity, while supporting the livelihoods of around 1.2 billion people (Parisi et al. 2025), including Indigenous Peoples and local communities. Their conservation and sustainable management are essential for achieving national commitments and global targets under both the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).

The interconnected impacts of climate change and biodiversity loss are especially pronounced in mountain regions, where rising temperatures, changes in precipitation patterns, glacial retreat, shifting species ranges, and land-use changes increase mountain people's vulnerability to climate change (Anderson et al. 2011; Baez et al. 2016; Adler et al. 2022; Cavieres et al. 2025, Marder 2025). At the same time, mountains face a marked demographic shift as people move from rural areas to cities: in 2000, rural residents made up 40% of the global mountain population, a share projected to fall to 33% by 2030, while the urban share rose from 26% to 31% over the same period (Parisi et al. 2025). Addressing these dual crises calls for integrated approaches that acknowledge the interdependence of development, climate and biodiversity action. Ecosystem-based adaptation and nature-based solutions in mountains offer powerful, scalable tools to enhance resilience, support mitigation, and sustain critical ecosystem functions.



Regional governance mechanisms—such as transboundary cooperation platforms and mountain-specific alliances, including the Alpine Convention, Carpathian Convention, Andean Mountain Initiative (AMI), and the East African Community Mountain Stakeholder Platform—along with broader cooperation platforms, intergovernmental organisations and alliances like ICIMOD, the Mountain Partnership, the Scientific Network for the Caucasus Mountain Region, and CONDESAN, provide effective models for cross-sectoral and multilateral collaboration. These "mountain platforms"—understood here as conventions, international agreements, scientific networks, and regional initiatives dedicated to sustainable mountain development—illustrate how coordinated action can address complex, interlinked challenges and offer valuable lessons for scaling up and out efforts across mountain regions worldwide.

Elevating the role of mountains in global climate and biodiversity agendas is essential to ensure these vital regions receive the attention and resources they urgently require. Embedding mountain-specific actions within national instruments, international policy frameworks and financial mechanisms helps countries meet global commitments, mobilizes resources, and ensures that mountain conservation contributes measurably to global biodiversity and climate goals, while ensuring benefits that extend far beyond mountain borders.

In this context, this policy brief first provides an overview of the international agenda on biodiversity and climate change, highlighting recent decisions and processes that elevate mountains as entry points for synergy to advance the goals of the Kunming–Montreal Global Biodiversity Framework (KM-GBF) and the Paris Agreement. It then outlines five key messages—developed in alignment with CBD and UNFCCC frameworks and grounded in scientific evidence and practical experience—that make the case for a joint agenda to halt biodiversity loss, conserve and restore ecosystems, and strengthen community resilience. Together, these messages emphasize mountain conservation and sustainable management as critical enablers of both biodiversity protection and climate action, and showcase how mountain platforms and initiatives can catalyze coordinated responses to interconnected challenges. The final section advances concrete policy recommendations and a proposed way forward to align and reinforce efforts under the CBD and UNFCCC frameworks toward a common objective of conserving and sustainably managing mountain ecosystems, foster cross-regional collaboration, and mobilize transformative action leveraging ecosystem-based approaches and nature-based solutions aligned with their shared objectives.

Mountains on the global agenda: Cooperation among Mountain Platforms

Regional knowledge platforms are the bridge between biodiversity and climate action—aligning evidence, indicators, and policy—so that the mountains agenda is firmly embedded across UNFCCC, CBD and other environmental agreements as a single, interconnected agenda. Since Agenda 21 (1992), mountain platforms and conventions have run joint initiatives—projects, trainings, publications—building cross-regional dialogue that laid the foundation for a common roadmap to elevate mountain issues, aligned with the SDGs and other global processes.

At the global level, initiatives like the Mountain Partnership—a UN alliance of 660+ members, including 73 governments—drives advocacy, capacity building, and knowledge sharing. Regionally, political platforms such as the Carpathian and Alpine Conventions, the AMI, ICIMOD, ARCOS, the East African Community (EAC) and Scientific Network for the Caucasus Mountain Region align priorities, exchange knowledge, and coordinate action to drive joint advocacy, foster interregional learning, and promote the sustainable management of mountain ecosystems.

Within this collaborative landscape, the Adaptation at Altitude programme—initiated and supported by the Swiss Agency for Development and Cooperation (SDC)—stands out as a flagship initiative. The programme enhances the resilience and adaptive capacity of mountain communities and ecosystems by strengthening evidence-based decision-making, supporting regional governance, and promoting knowledge exchange. At the same time, it mobilizes stakeholders to ensure that mountain adaptation is firmly embedded within global climate and biodiversity frameworks.

2. Setting the scene: the conventions

Mountain ecosystems play a pivotal role in bridging the climate and biodiversity agendas, offering a natural entry point for enhancing coherence between the CBD and UNFCCC. Their ecological complexity makes them highly vulnerable to climate change, while also positioning them as critical strongholds of global biodiversity, carbon sinks, and water and climate regulation.

Under the CBD, mountains have long been recognized as priority ecosystems. The Programme of Work on Mountain Biological Diversity, adopted through Decision VII/27 (2004), was the first comprehensive international framework dedicated to conservation and sustainable use of mountain ecosystems. Its initial objective was to significantly reduce the loss of mountain biodiversity by 2010 at global, regional, and national levels, while contributing to poverty alleviation, sustainable development, and the Millennium Development Goals. Although adopted two decades ago, the programme's goals remain highly relevant under the KM-GBF. Its three programme elements—direct actions, means of implementation, and supporting actions—can still provide a useful structure for addressing the unique characteristics, vulnerabilities, and opportunities of mountain ecosystems. In the post-2020 context, Parties and stakeholders have called to elevate mountains across climate and biodiversity action, revising the existing Programmes of Work, including the development of mountain-specific indicators, the promotion of ecosystem-based approaches to adaptation and mitigation, and the integration of priority actions to stop biodiversity loss in mountain ecosystems into National Biodiversity Strategies and Action Plans (NBSAPs).

At COP16 (Cali, 2024), Decision 16/22 on Biodiversity and Climate Change reaffirmed the interdependence of biodiversity loss and climate change and explicitly called for stronger integration for increased synergies between the CBD and the UNFCCC. Within this broader mandate, mountain ecosystems represent a strategic entry point for integrating the two agendas, offering opportunities for rights-based, ecosystem-based approaches and nature-based solutions.

Momentum has also built under the UNFCCC. The first Global Stocktake (2023) recognized the vulnerability of mountain regions and the need for stronger adaptation measures. This was followed by the SBSTA 60 Expert Dialogue on Mountains and Climate Change (Bonn, 2024), which brought together Parties, Indigenous Peoples, scientists, and regional platforms to share region-specific challenges and solutions. The dialogue reinforced momentum generated by the Nairobi Work Programme (NWP), which introduced a thematic focus on mountains, high-latitude areas and the cryosphere in 2022 to strengthen knowledge-sharing and inform adaptation planning. This thematic area provides a critical platform for Parties and observers to ensure that mountain-specific knowledge and evidence are incorporated into NWP outputs in 2025 and beyond, thereby strengthening the relevance of global adaptation planning for high-altitude ecosystems and communities.

Ecosystems and biodiversity were recognized as core elements of the Global Goal on Adaptation (GGA) adopted at COP28 (Dubai, 2023). Decision 2/CMA.5, paragraph 9(d), explicitly references mountains under the ecosystems and biodiversity target, creating a clear entry point for their integration into the GGA framework. Mountain systems could be reflected explicitly across GGA-aligned indicators—including ecosystem extent (covering mountain ecosystems and glaciers), integrity, restoration, climate-resilient management, community-based adaptation, and ecosystem services—while finance and inclusion metrics apply a dedicated "mountain" lens to track targeted allocations and participation. Under the UAE–Belém Work Program, Parties and expert groups are considering the inclusion of mountain-relevant global indicators.

These developments align with the priorities of the COP30 Presidency, which has called for stronger integration of biodiversity considerations into climate action, particularly within NDCs and adaptation plans. Countries such as Colombia and Brazil are actively promoting greater consistency between the CBD and UNFCCC, advocating for joint decisions that embed biodiversity outcomes into climate strategies and vice versa.

By embedding mountain priorities across both conventions, Parties can accelerate progress toward nature-based solutions that deliver climate change adaptation and ecosystem health outcomes. Recognizing the global significance and unique dynamics of mountain ecosystems ensures they are no longer overlooked in international policy frameworks. With 2030 fast approaching, 2025 is a pivotal springboard for countries to accelerate implementation of national plans (NBSAPs, NDCs, NAPs) toward global targets. 2025 coincides with the deadline for countries to submit their revised NDCs under the Paris Agreement, the midpoint of the Five Years of Action for the Development of Mountain Regions (2023–2027), the release of the 2025 United Nations Secretary-General (UNSG) report on sustainable mountain development (A/80/255), the eightieth session of the United Nations General Assembly, and the observance of the International Year of Glaciers' Preservation.

Abra Malaga, Cusco, Peru, © Musuk Nolte

3. Key messages: the role of mountain ecosystems in achieving CBD and UNFCCC goals

1. Mountain ecosystems harbor unique and exceptionally rich biodiversity

Global assessments show that mountain ecosystems disproportionately support the planet's biodiversity, concentrating many narrow-range endemics in tectonically active, topographically complex, and climatically heterogeneous landscapes (Rahbek et al. 2019; Antonelli et al. 2018; Marder et al. 2025). Mountains cover 27 percent of Earth's land surface, encompass 25 of the world's 34 biodiversity hotspots, and contain 30 percent of all Key Biodiversity Areas (IISD 2022). Their richness is shaped by steep elevational gradients that drive rapid species turnover (high beta-diversity), together with diverse topography, varied climates, geographic isolation, cultural diversity, and moderate natural disturbance (Ramírez-Villegas et al. 2014; Cuesta et al. 2017; Körner et al. 2017; Antonelli et al. 2018; Luebert & Müller 2015; Körner 2023; Nagy et al. 2023; Marder et al. 2025). Globally, topographically complex mountains host more species and a higher share of small-ranged taxa, with the species–area/complexity relationship steepest in the wet tropics (Rahbek et al. 2019).

This biological richness is evident across high-elevation systems—e.g. alpine meadows of Central Asia, Carpathian alpine and subalpine belts, South American páramos and puna- and montane cloud forests worldwide. For example, in the Western Himalaya and across Central Asia, mountain ranges support remarkable plant richness between 1,000–3,000 m, alongside emblematic fauna such as the snow leopard and other endemic high-altitude species (CEPF 2024). Likewise, the Albertine Rift in East Africa harbours iconic species—including the mountain gorilla and giant groundsels (Dendrosenecio spp.)—yet faces mounting pressures from land-use change and climate change (Ponce-Reyes et al. 2017). In the Andes, more than 1,000 vascular plant species occur exclusively above 3,000 m, many highly specialized to cold, wet conditions and narrow thermal niches; a mosaic of microclimates, soils, and vegetation underpins exceptional ecological specialization and functional diversity (Báez et al. 2016; Körner 2023; Cuesta et al. 2020; Cavieres et al. 2025).

Virunga National Park, Ituri, Orientale, Democratic Republic of the Congo, © Janos Rautonen

East African Mountains: Climate Change and Biodiversity at a Tipping Point

The East African mountain ranges span five of Africa's biodiversity hotspots and are home to over 25% of the world's mammal species. The Albertine Rift alone harbors more than 7,500 plant and animal species, 15% of which are endemic, while the Eastern Arc Mountains host 14% of Africa's vascular plants on less than 0.25% of its land area (EAC, UNEP, and GRID-Arendal 2016).

Climate change is compounding existing pressures in the region. Rising temperatures, declining fog and cloud cover, and the loss of glaciers—shrunk by up to 80% since 1990 and projected to disappear by 2050— are transforming mountain ecosystems (IPCC 2007). In the Albertine Rift, many species are expected to shift upslope by 2070, threatening habitat availability for species like the critically endangered mountain gorilla. (Ponce-Reyes et al. 2017) Endemic birds in the Rift could lose as much as 350 meters of elevational range by 2085.

Other impacts include forest degradation, increased wildfires, and reduced dew formation—by up to 25%, affecting drinking water availability. (EAC, UNEP, and GRID-Arendal 2016) Combined with land-use change, invasive species, and weak governance, these drivers are accelerating biodiversity loss and ecosystem service decline, especially in pollination and water regulation, putting both wildlife and local communities at increasing risk.

The East African Community (EAC), a regional intergovernmental body of eight countries, is actively working to address these challenges. Through its Sectoral Council on Environment and Natural Resources and the East African Community Mountain Stakeholder Platform, the EAC supports regional cooperation and promotes sustainable management of mountain ecosystems.

2. Mountain biodiversity is essential for climate resilience and ecosystem stability

Mountain biodiversity is a cornerstone of global climate resilience. Cold-adapted, stress-tolerant species underpin long-term ecosystem functioning by stabilizing soils, regulating water, storing carbon, and cycling nutrients—thereby facilitating water retention (Körner 2023; Vento et al. 2023). As climate change and land-use pressures intensify, mountain biota—often confined to narrow ecological niches—serve as early-warning biological indicators of environmental stress and ecosystem degradation (Rahbek et al. 2019; Antonelli et al. 2018).

Mountain ecosystem biodiversity enhances functional redundancy and adaptive capacity, helping sustain critical services under increasing climatic variability (Körner et al. 2017; Marder et al. 2025). Climate-driven upslope migration is increasingly pushing species beyond physiological and ecological thresholds, leading to range contractions and elevated extinction risk, especially for narrow-niche specialists with limited dispersal (Ramírez-Villegas et al. 2014; Cuesta et al. 2020, 2023; Cavieres et al. 2025).

Documented shifts in phenology, distribution, and abundance across many mountain regions underscore the need to maintain elevational corridors and microrefugia to enable movement and long-term persistence (Sevillano 2020; Rahbek et al. 2019; Cuesta et al. 2020). Strong evidence shows that replacement of cold-adapted, high-elevation specialists by generalists from lower elevations alters ecological interactions such as pollination, seed dispersal, and mycorrhizal networks that support regeneration, productivity, and ecosystem stability (Sevillano 2020; Herrera et al. 2020; Tovar et al. 2022).

The Andean Case: Mountain Ecosystem Services Under Threat

The Andes, the richest global biodiversity hotspot in terms of species richness and endemism (Báez et al. 2016), exemplify the role of mountain ecosystems in sustaining both highland and lowland societies. High-elevation systems—such as páramos, puna grasslands, cloud forests, and peatlands—regulate freshwater flows, stabilize soils, store carbon, and provide culturally significant landscapes (Buytaert et al. 2011; Cuesta et al. 2019). These ecosystems supply water to over 60 million people through year-round streamflow that feeds major rivers across the Andes and in the adjacent lowlands (Anderson et al. 2011; Báez et al. 2016; Adler et al. 2022; Vento et al. 2023; Cordero et al. 2024). Mountain agrobiodiversity, including native crops like quinoa and potatoes, contributes to food security and resilience to climate variability (Lozano-Povis et al. 2021).

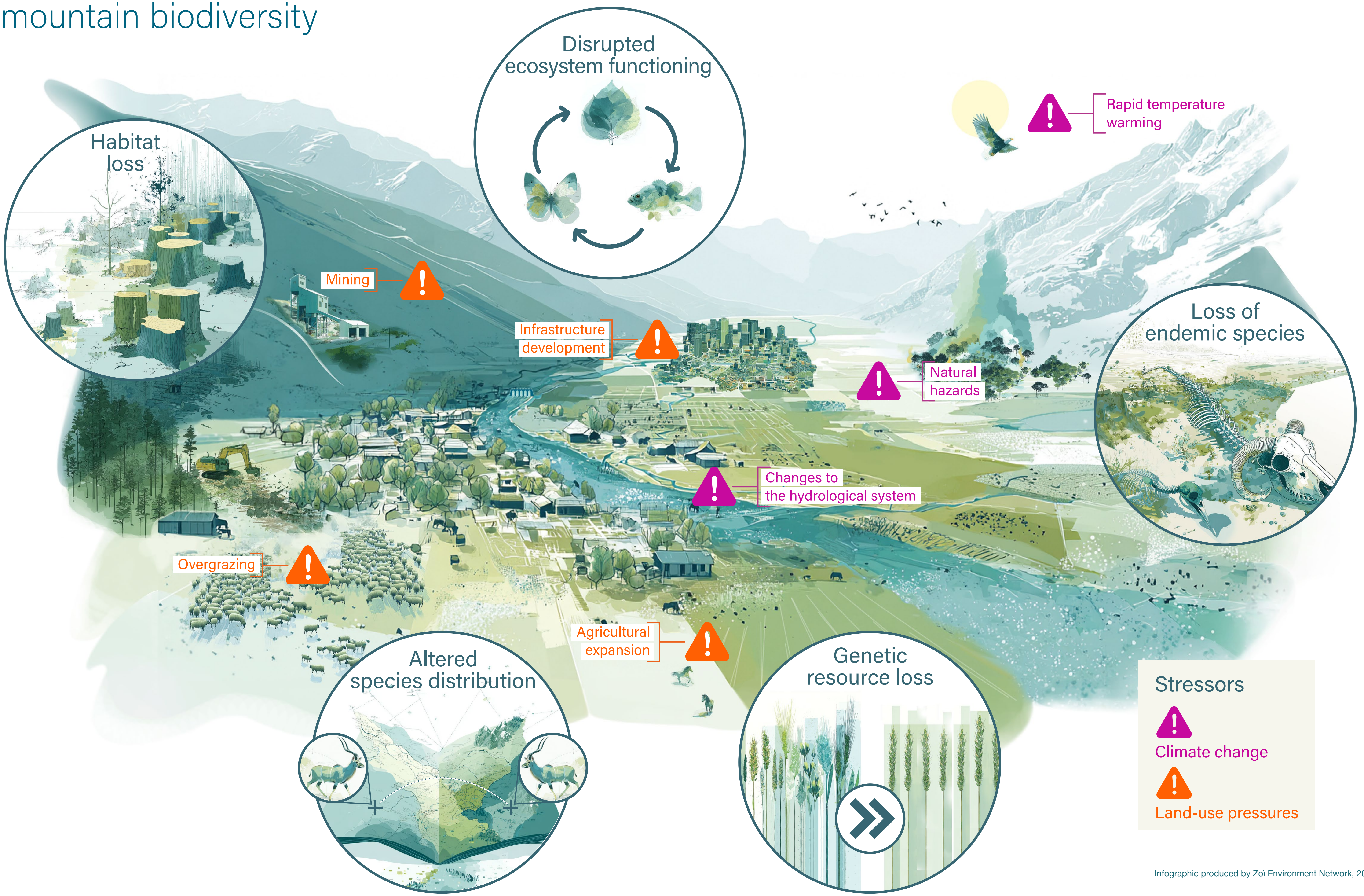
However, these services are under increasing threat. Rising temperatures, glacial retreat, altered precipitation, and unsustainable land use are degrading mountain integrity. Projections indicate that tropical glaciers could lose up to 98% of their extent by the end of this century under high-emission scenarios, undermining dry-season water availability for urban, agricultural, and energy needs (Vuille et al. 2008; Masiokas et al. 2020; Caro et al. 2021). Soil compaction, erosion, and fragmentation—driven by agriculture, grazing, and infrastructure—further reduce infiltration and exacerbate flood risks (Cordero et al. 2024; Adler et al. 2022).

Páramos and peatlands are particularly vulnerable. These ecosystems store up to 1,400 tons of carbon per hectare and are critical for both mitigation and water regulation (Rolando et al. 2017). Yet warming and land degradation accelerate organic matter decomposition, releasing CO_2 and impairing water storage (Gutiérrez-Salazar & Medrano-Vizcaíno 2019; Buytaert et al. 2011). Degraded vegetation cover also diminishes the hydrological buffering capacity of páramos, increasing the likelihood of droughts and floods (Rolando et al. 2017).

To address these challenges, the Andean Mountain Initiative (IAM) provides a regional platform for cooperation and coordinated mountain governance. Formed by Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, and Venezuela, IAM promotes joint actions for the sustainable development and conservation of Andean Mountain ecosystems. Through its Strategic Agenda for Climate Change Adaptation in the Andes (2017) and the Andean Declaration on Mountain Ecosystems (2024), IAM strengthens science-policy dialogue, supports national mountain committees, and advances shared priorities in international negotiations.

Parque Nacional Cajas, Ecuador, © Stefan Boness

Climate change impacts on mountain biodiversity



Infographic produced by Zoï Environment Network, 2025

3. Climate change and mismanagement of natural resources are driving a mountain biodiversity crisis

Mountain ecosystems are at the frontline of the global biodiversity crisis, with climate change, unsustainable land use, alien species, pollution, and inadequate conservation efforts accelerating ecosystem degradation, species loss, and the loss of essential ecosystem services (Urbach et al. 2024). These impacts undermine both ecosystems health and the well-being of millions of people who depend on mountain systems for water, food, energy, and cultural identity (Rahbek et al. 2019; Antonelli et al. 2018).

Rising temperatures, shifting precipitation patterns, glacier retreat, snow cover decline and unsustainable land use are already degrading mountain habitats, driving upslope species migration, and accelerating biodiversity loss. Conservation policies therefore need to move beyond static protection measures toward climate-informed, dynamic approaches. Tools such as species distribution models, elevational connectivity planning, future climate conditions and scenarios and long-term ecological monitoring can support more adaptive and anticipatory strategies (Ramírez-Villegas et al. 2014; Herrera et al. 2020). Yet, mountain systems remain underrepresented in global assessments and climate models (Nagy et al. 2023), and implementation efforts are often fragmented, lacking coordination across administrative and elevational scales (Cuesta et al. 2019; Carilla et al. 2023).

2025 International Year of Glaciers' Preservation

Glacier retreat in mountain regions is accelerating with unprecedented pace

Glacier retreat has been occurring rapidly in recent years due to elevation-dependent warming—a phenomenon where temperature increases are amplified with altitude. This trend is particularly pronounced in the tropical highlands, where glaciers are retreating faster than the global average (Rabatell et al. 2013; Masiokas et al. 2020). With current emissions, the large majority of tropical and low-lying glaciers are expected to disappear by 2100 (Adler et al. 2022).

Accelerated glacier loss poses a major threat to mountains biodiversity; post-glacial ecosystem assembly is notably slow, and positive biotic interactions—such as animal pollination, plant facilitation, and animal-mediated seed dispersal—are often limited in these newly exposed landscapes (e.g. Zimmer et al. 2018; Llambi et al. 2021). This results in the accumulation of a "climatic debt", where species and ecosystems lag the pace of climate change, increasing their vulnerability to further warming (Ficetola et al. 2024).

Rapid warming is driving glacial retreat and snow cover loss, altering hydrological regimes and reducing water availability during dry seasons—placing stress on high-altitude wetlands, peatlands, and grasslands that regulate streamflow, retain soil moisture, and store carbon (Buytaert et al. 2011; Dangles et al. 2017; Vento et al. 2023). As these ecosystems lose structure and function, both biodiversity and downstream communities face increasing risks. These shifts extend beyond species distributions, affecting critical ecological interactions and processes. Disruptions in phenology (e.g. flowering and breeding times) and mismatches between plants and pollinators or prey and predators threaten regeneration and food web stability (Haller 2012; Herrera et al. 2020). Amphibians, birds, and freshwater fish are particularly vulnerable to habitat fragmentation and climatic stress, leading to population declines and functional homogenization (Anderson et al. 2011; Dangles et al. 2017; Tovar et al. 2022).

These climatic changes are shifting species distributions, accelerating upslope tree line migration, and threatening fragile ecosystems such as wetlands and grasslands—habitats for many rare and drought-sensitive species. (Pellissier et al. 2012; Niedrist et al. 2009) Forests, which cover around 66% of the region, including Europe's largest virgin and old-growth forests, are under growing pressure from wildfires, pest outbreaks, and windstorms. Changes in forest composition are already occurring, with spruce trees showing widespread dieback and beech forests declining due to drought, being replaced by more drought-tolerant oak species. (Climate-ADAPT (EEA), Somogyi 2016, Korol et al. 2022). Rapid environmental changes in high-mountain regions amplify multi-hazard risk (Sattar et al. 2025). In High Mountain Asia, the South Lhonak Lake outburst exemplified cascading impacts: ~14.7 million m^3 of frozen lateral moraine collapsed at ~22:12 IST, generating a ~20 m displacement wave and destructive downstream flooding (Sattar et al. 2025). Beyond glacial lakes, warming is intensifying rainfall-triggered geohazards worldwide—heavy precipitation increasingly coincides with landslides, debris flows, and mudflows (Gao et al. 2025). Recent disasters include the rock-and-ice collapse–driven mudflow in Shovi, Georgia (August 2023) (Copernicus EMS 2023).

Land-use pressures—including agricultural expansion, overgrazing, infrastructure development, and mining—compound climate impacts. These drivers degrade habitats, reduce connectivity, and obstruct species migration, further accelerating biodiversity loss and weakening the resilience of mountain ecosystems (Adler et al. 2022; Cordero et al. 2024; Urbach et al. 2024; Cavieres et al. 2025). As ecosystem services such as water regulation, nutrient cycling, and soil fertility decline, so does the well-being of Indigenous and rural communities, who rely heavily on these functions for livelihoods and cultural continuity (Báez et al. 2016; Nagy et al. 2023).

The cultural impacts of mountain degradation are profound. In the Andes, the loss of sacred species, glaciers, and lagoons—central to Indigenous cosmologies—erodes intergenerational knowledge and spiritual values (Adler et al. 2022; Haller 2012). Similarly, in the Hindu Kush Himalaya, sacred groves, holy peaks, lakes, and traditional agroforestry systems form the basis of rituals, traditions, and community identities (Wester et al. 2020). As these landscapes fragment and degrade, the consequences extend beyond material resources, undermining the cultural heritage and spiritual foundations of mountain societies.

Mountain biodiversity remains a key source of resilience and adaptation

Traditional agrobiodiversity species, such as Andean quinoa (Chenopodium quinoa Willd.), with its wide ecological tolerance and cultural significance, exemplify how mountain genetic resources can contribute to global food security while preserving local heritage (Ruiz et al. 2014).

Hindu Kush Himalaya, © Jitendra Raj Bajracharya/ICIMOD

Cryosphere Loss and Ecosystem Vulnerability: the case of the Hindu Kush Himalaya

The Hindu Kush Himalaya (HKH))—often referred to as the "Third Pole" due to its vast reserves of ice, snow, glaciers and permafrost— feeding 10 major river systems of South Asia (Wester et al., 2019) - is experiencing rapid cryosphere loss due to climate change, leading to glacier retreat, reduced snow cover, permafrost degradation, and more frequent natural hazards. These changes trigger cascading impacts on biodiversity and ecosystem services—such as shifts in species ranges, habitat degradation, and increased invasion by alien species—further undermining the resilience of ecosystems and communities (Chaudhary et al. 2023). Plant species are migrating upslope at rates of 11–54 meters per decade (Yadava et al. 2017), and up to 75% of major invasive species are projected to expand (Shrestha 2019). And, the loss of biodiversity is compounded by a decline in ecosystem services such as carbon storage, greenhouse gas sequestration, and water quality. Critically, glacier runoff in dry seasons is expected to decline by 50–70% in some areas (Zomer and Sharma 2009) - threatening water supply for nearly 2 billion people.

Future scenarios point to greater ecological disruption and social vulnerability unless urgent, regionally coordinated interventions are adopted. The International Centre for Integrated Mountain Development (ICIMOD) plays a key role in responding to these challenges. As an intergovernmental knowledge and learning centre, ICIMOD connects scientists and policymakers on science-based solutions for building resilience in the HKH region. Its work supports sustainable land management, forest restoration, and efficient water use for agriculture, helping governments make informed decisions to safeguard the region's ecosystems and communities.

4. Conservation of mountain ecosystems is essential for achieving global environmental goals

Conserving and restoring mountain ecosystems is indispensable to halting biodiversity loss and tackling the climate crisis. A complementary portfolio—protected-area management, ecological restoration, and nature-based solutions, underpinned by monitoring and research—builds ecosystem resilience and supports species persistence across mountain landscapes while delivering mitigation and adaptation co-benefits. There is strong evidence that protected areas maintain climate refugia and migration corridors for endemic and cold-adapted species, and that restoring high-elevation wetlands, peatlands, grasslands, and cloud forests improves water and carbon regulation and buffers extreme events (Buytaert et al. 2011; Vento et al. 2023).

Effective implementation requires integrating climate projections into protected-area design, restoration and conservation planning and deploying robust monitoring and ecosystem-classification tools (e.g., the European Red List of Habitats, the EUNIS system, GLORIA) for mapping and prioritization, complemented by climate-vulnerability assessments, taxonomic work on under-explored groups, and long-term monitoring to guide adaptive management (Payne et al. 2017; Adler et al. 2018; Shahgedanova et al. 2021; Urbach et al. 2024; Carilla et al. 2024).

Expanding research in understudied mountain systems—such as the Zagros, Tian Shan, or the Ethiopian Highlands—will close key knowledge gaps on mountain ecosystems dynamics, species vulnerability, and resilience, sharpening conservation and climate responses and supporting decision-making to reduce pressures and scale sustainable mountain management (Urbach et al. 2024). Aligning these actions through integrated, rights-based strategies enhances policy synergies, lowers implementation costs, and strengthens local ownership—especially when Indigenous Peoples and local communities are engaged as partners and leaders (Anderson et al. 2011; Adler et al. 2022; Salas-Bougoin 2025).

Carpathian Mountains, © Oleksandr Rupeta

Regional models for global goals: The Carpathian Biodiversity Framework

The Carpathian Mountains are one of Europe's most important biodiversity hotspots, home to over 4,000 plant species, including more than 200 endemics, and significant populations of large mammals, hosting around 40% of Europe's brown bears and 30% of its wolves and lynx (UNEP 2023a). However, this rich ecological region is increasingly vulnerable to climate change, with projections indicating up to a 20% drop in summer precipitation and a rise in the frequency and intensity of droughts over the next 75 years (Climate-ADAPT - EEA).

The Carpathian Convention, established in 2003, provides a transnational governance framework promoting environmental protection and sustainable development. In response to growing climate and biodiversity challenges, the region has adopted the Carpathian Biodiversity Framework under the Kunming-Montreal Global Biodiversity Framework, strengthening its commitment to coordinated cross-border conservation and adaptation action.

In 2023, the Carpathian Convention adopted the Carpathian Biodiversity Framework (CBF)—becoming the first regional mountain convention to establish its own biodiversity framework. The CBF is a milestone for the local-level implementation of the KM-GBF and provides a model for other mountain and regional governance mechanisms worldwide.

The CBF Vision 2050 sees the Carpathians as a model mountain region where sustainable development goes hand in hand with nature conservation. To realize this vision, the CBF promotes coordinated action across key priority areas and fosters synergies with regional, European, and global biodiversity, climate, and sustainable development objectives. As all Parties to the Carpathian Convention are also Parties to the CBD, the CBF ensures strong alignment between the KM-GBF, the EU Biodiversity Strategy for 2030, and regional priorities. Through its implementation, the CBF will significantly advance the KM-GBF and the 2030 Agenda for Sustainable Development, demonstrating the transformative potential of regional frameworks in driving effective biodiversity action.

5. Mountain platforms play a pivotal role in advancing biodiversity and climate action across all levels

Mountain platforms and networks—understood here as conventions, international agreements, scientific networks, and global or regional cooperation mechanisms dedicated to sustainable mountain development—are key enablers for mobilizing science-based, locally grounded action that advances both biodiversity and climate goals. Strengthening their reach and integration is a strategic investment in global environmental resilience.

By coordinating data collection and monitoring, fostering knowledge exchange, and linking science with policy, mountain networks improve national and transboundary planning and generate evidence that directly supports the implementation of NBSAPs, NDCs, and regional climate-adaptation strategies (Dupuits et al. 2022; Nagy et al. 2023; Cordero et al. 2024)

In parallel, these political and knowledge platforms provide practical mechanisms for cross-scale policy alignment and sustained science–policy dialogue. By convening scientists, Indigenous Peoples and local communities, NGOs, practitioners, civil society, and government agencies, they promote inclusive governance and ensure diverse knowledge systems inform decisions—enhancing the legitimacy, relevance, and effectiveness of conservation and adaptation actions (Anderson et al. 2011; Dupuits et al. 2022).

To ensure the success of these efforts, mountain platforms offer opportunities to address the following priorities:

- Support and expand long-term ecological monitoring (e.g. vegetation shifts, phenological changes, peat decomposition, hydrological regimes, social dynamics) to anticipate tipping points and inform adaptive management (Rolando et al. 2017; Adler et al. 2018; Shahgedanova et al. 2021; Carilla et al. 2024).
- Strengthen and coordinate transboundary research networks to support early warning systems and evidence-based planning in mountain regions, linking science to policy and decision-making (Dupuits et al. 2022; Nagy et al. 2023; Carilla et al. 2024).
- Enhance participatory governance mechanisms to ensure that local and Indigenous knowledge systems inform both policy and practice (Herrera et al. 2020, Anderson et al. 2011; Dupuits et al. 2022).
- Facilitate exchange between national and sub-national governments and relevant authorities of a mountain range for improved learning about shared biodiversity and climate change challenges, adequate policies and co-creation of transboundary and regional programmes and strategies (Morón et al. 2025).
- Mainstream mountain-specific priorities in national and international climate and biodiversity frameworks through better data integration, regional cooperation, and investment in institutional capacities and multi-scale policy dialogue (Payne et al. 2017; Dupuits et al. 2022).

The Alps: Warming Fast and Facing Ecological Thresholds

The Alps are warming at nearly twice the global average, with temperatures rising by 2°C over the 20th century and projected to increase further. This rapid warming is causing profound impacts on biodiversity, ecosystems, and local livelihoods.

Snow cover, essential for both biodiversity and the tourism industry, has declined by 80–90% in some areas (Broadbent et al. 2024), leading to earlier snowmelt and shortened snow seasons—by nearly a month at mid-elevations—disrupting nutrient cycles and plant-soil dynamics. Species are moving upslope, with animals shifting between 30–100 meters per decade and plants approximately 30 meters per century, while cold-adapted species risk losing up to 70% of their habitat.

Alpine vegetation is being replaced by fast-growing, lowland species, while changes in soil development threaten carbon storage and ecological synchrony. Phenological shifts are also evident, such as migratory birds arriving 15 days earlier and the common toad's breeding period advancing by a month, which contribute to trophic mismatches. (Askeyev et al. 2023, Lenzi et al. 2023) Iconic species like the Alpine ibex are already experiencing higher offspring mortality due to timing mismatches between birth and food availability (Patriarca et al. 2021).

Additional pressures from tourism and land-use change further degrade habitats, compounding climate impacts and pushing many Alpine ecosystems toward critical ecological thresholds.

The Alpine Convention, established in 1991, was the first international treaty designed to protect an entire mountain range, that spans eight countries and the European Union. It promotes the protection and sustainable development of the Alps, addressing cross-border challenges and preserving the region's unique natural and cultural heritage. During the XVIIIth Alpine Conference in January 2025, the Contracting Parties to the Alpine Convention adopted a policy brief to provide strategic guidance on translating global biodiversity goals to the Alpine level. These are now being defined by the Alpine Biodiversity Board in an upcoming Alpine Biodiversity Action Plan, showing that regional efforts can be concrete tools for implementing global biodiversity commitments.

Eggishorn, Switzerland, © Sergey Dzyuba

The Role of Knowledge Networks in Monitoring Mountain Change and Informing Decisions

Knowledge networks and long-term observation initiatives are vital for understanding and responding to the complex impacts of climate change in mountain regions. They provide critical data on biodiversity, hydrology, socioecological and ecosystem dynamics, forming the evidence base for policy and adaptation planning.

Long-term monitoring efforts—such as the GEO-Mountains, ILTER or GLORIA observatories in different regions of the world —track species turnover, vegetation change, carbon balances, and water dynamics across gradients, offering early warnings of ecosystem shifts (Pauli et al. 2012; Williams et al. 2016; Adler et al. 2018; Pauli & Halloy 2019; Cuesta et al. 2023; Cavieres et al. 2025). In Central Asia, monitoring networks in the Pamir and Tian Shan ranges document rapid glacier retreat and altered river flows (Sorg et al. 2012). Meanwhile, the Hindu Kush Himalaya Assessment (HIMAP), led by ICIMOD, strengthens regional monitoring and assessments, fostering evidence-based decision-making across the HKH (ICIMOD 2024). In the Caucasus, the Scientific Network for the Caucasus Mountain Region (www.caucasus-mt.net) provides a unique platform for the six countries of the Ecoregion to share research, data and knowledge.

Platforms and programs such as Adaptation at Altitude, the Mountain Research Initiative, Mountains Connect, GEOGloWS, GLOMOS, AMAP, CMA and the Network of Socioecological Observatories in the Andes (ROSA) play a pivotal role in synthesizing and disseminating this knowledge. By fostering science–policy dialogues—such as the Andean Mountain Initiative's Science–Policy Dialogues, ICIMOD's science-diplomacy work in the HKH, or the EAC Mountain Stakeholder Platform—these networks strengthen regional cooperation and help safeguard mountain ecosystems and livelihoods.

Bridging knowledge and global advocacy—and building on the work of allied platforms—the Mountain Partnership links evidence generation to policy influence for sustainable mountain development. Its knowledge outputs (policy briefs, technical reports, and case studies) translate monitoring insights and local practice into actionable recommendations used in UNFCCC and post-2020 CBD processes, keeping mountain issues evidence-based and visible in global fora. The Partnership also turns knowledge into practice through initiatives such as Mountain Partnership Products, which combine traditional knowledge and value-chain research to support fair market access and enabling policies for mountain producers.

Suusamyr, Chuy Region, Kyrgyzstan, © Nyani Quarmyne

4. Policy recommendations and way forward

As implementation of the Kunming-Montreal Global Biodiversity Framework under the CBD and the Global Goal on Adaptation under the UNFCCC gains momentum, mountain ecosystems offer a unique opportunity to operationalize the climate–biodiversity nexus. They must be recognized as a strategic and cross-cutting priority. Their transboundary nature, biodiversity richness, ecological distinctiveness, and critical contributions to water security, food systems, and climate resilience position them as ideal ecosystems for achieving integrated climate and nature goals and advancing synergy between the two conventions.

Revitalizing the Mountains Agenda under the CBD

The CBD provides a unique opportunity to work on a mountain agenda and align it with the KM-GBF. While the Programme of Work (PoW) on Mountain Biological Diversity, adopted in 2004, was the first international framework dedicated to mountain ecosystems, it now needs to be updated to 2030 to more closely align with the goals and targets of the KM-GBF and address today's ecological and social realities.

Revitalizing the Programme of Work must translate into concrete priority actions to stop and reverse biodiversity loss and complement efforts already underway in mountain countries and regions. Governments now have the opportunity to build on lessons from the PoW and existing mountain platforms to propose a streamlined, outcome-oriented set of priorities to address key drivers and reduce biodiversity loss in mountain ecosystems. This includes integrating mountain-specific indicators into the KM-GBF monitoring framework, systematically reflecting mountain priorities in NBSAPs and promoting ecosystem- and nature-based approaches that strengthen biodiversity conservation and adaptation in mountain landscapes.

Inclusive governance is central to the success of a renewed mountains agenda. Ensuring the full and effective participation of Indigenous Peoples, local communities, women, and youth would not only improve legitimacy but also enhance the effectiveness of biodiversity actions. Strengthening partnerships with regional mountain platforms is equally important, as these mechanisms can bridge local realities with global policy processes and provide vehicles for knowledge exchange, peer learning, and joint monitoring.

Committing to the implementation of a revitalized Programme of Work would secure continuity and coherence in implementation. Recognizing regional platforms within CBD decisions and mandating their contribution to implementation and reporting would create accountability and strengthen cross-regional collaboration. At the same time, mountains could serve as an entry point for advancing synergies with the UNFCCC, including through the development of a joint work programme on biodiversity and climate change that uses mountains as a pilot ecosystem for integrated action.

By renewing the Programme of Work and embedding mountains firmly within the KM-GBF, Parties can safeguard mountain ecosystems while leveraging them as strategic spaces for advancing biodiversity conservation, people's well-being, sustainable development, and cross-convention collaboration. This would position mountains as critical contributors to the achievement of global biodiversity targets and as a model for integrated climate–nature solutions.

Advancing the Mountains Agenda under the UNFCCC

Mountains need to be more explicitly covered in national climate commitments. NDCs, NAPs, and Biennial Transparency Reports (BTRs) are natural vehicles to highlight mountain-specific vulnerabilities, ecosystem services, and priority measures—see, for example, Andorra's First BTR to the UNFCCC (Gobierno de Andorra, 2023), the Kyrgyz Republic's Third NDC, or Chapter 5.5 of Azerbaijan's Initial NAP. Leveraging global and regional monitoring networks—such as GLORIA, ILTSER, GEO-Mountains, ROSA, the Andean Forest Network, HIMAP and the Iniciativa Regional Hidrológico de Ecosistemas Andinos (IMHEA)—could help fill key information gaps and provide robust inputs to NBSAPs, NDCs, and adaptation communications.

Mountains at the Core of Andorra's Climate Action

Andorra's first Biennial Transparency Report (BTR) defines the country as a high-mountain state embedded in the central Pyrenees, with altitudes ranging from approximately 850 m to 2 942 m and a predominantly humid alpine climate. This topography makes mountain ecosystems a determining factor for Andorra's exposure to climate impacts and for the design of its adaptation and mitigation responses. The BTR highlights that Andorra's hydrological regime—nival, transitional nival, and nivopluvial—depends strongly on snowmelt and seasonal precipitation, shaping the flow of rivers and the dynamics of over seventy high-mountain lakes of glacial origin. These features, together with steep terrain and erosion processes intensified by thaw periods, situate mountains at the heart of the country's environmental management and risk assessment.

The BTR recognizes Andorra's exceptional biodiversity, driven by its location along the Mediterranean-Alpine transition and its broad altitudinal gradients. This configuration sustains a mosaic of habitats, many harboring endemic species, and reflects a long history of traditional agriculture and extensive grazing that have maintained diverse cultural landscapes. The report underscores that, according to IPCC findings, mountain territories such as Andorra are highly sensitive to climatic variations that threaten ecosystems, livelihoods, and key sectors. Among the indicators included in the BTR are observed and projected changes in natural ecosystems and mountain landscapes, and the vulnerability of mountain tourism—particularly snow- and nature-based activities—to biodiversity and climate-induced shifts.

The BTR also documents climate-related emission sources linked to high-mountain pastoral systems and sustainable manure management, emphasizing the integration of mountain-specific indicators and cooperation measures to enhance the resilience of ecosystems, communities, and the tourism-dependent economy. Andorra's BTR situates national action within a broader Pyrenean framework shared with France and Spain through the Working Community of the Pyrenees (CTP). The report references the LIFE PYRENEES4CLIMA initiative and the EPiCC strategy, which together support the first European cross-border climate strategy for a mountain bioregion. Through these mechanisms, Andorra contributes to coordinated adaptation and mitigation efforts across the Pyrenees, backed by the Pyrenean Climate Change Observatory.

The Global Goal on Adaptation (GGA) offers an important entry point for mountain-relevant indicators. Building on the consolidated list of indicators and ongoing work under the UAE–Belém Work Programme, Parties can support indicators that help report on the distinct vulnerabilities of mountain ecosystems - particularly those making reference to cryosphere protection, ecosystem service provisioning and regulation, ecosystem resilience, and data on climate risk information. These indicators help link biodiversity, resilience, and community well-being, providing a mountain perspective in the GGA framework. Further steps will need to be made looking beyond the UAE-Belém Work Programme to help integrate mountain priorities into reporting mechanisms for all countries where they are relevant.

The Nairobi Work Programme should continue serving as a platform to institutionalize mountain knowledge. Engaging with the NWP and ensuring that Parties' adaptation planning utilizes its mountain-specific resources allows for deeper integration of mountain issues in adaptation action. Further, the 2024 Expert Dialogue on Mountains and Climate Change created momentum that can be built upon. Science–policy dialogues on mountains, anchored in the NWP and contributing to its Adaptation Knowledge Portal, will help maintain mountain-specific expertise within UNFCCC processes, support iterative adaptation, and contribute to the implementation of the UAE Framework for Global Climate Resilience.

Future adaptation frameworks could provide further space for mountain–biodiversity linkages. The Baku High-Level Dialogue on Adaptation and the Baku Adaptation Roadmap, launched at COP29, offer timely opportunities to foster cooperation and ensure continuity in climate action for mountains along post-COP30 pathways. Sustained emphasis by upcoming UNFCCC presidencies—supported by mountain platforms and interested countries to surface priority issues in these dialogues—will help keep mountains on the agenda, particularly around water security, ecosystem-based adaptation, and resilience, and strengthen the recognition of mountains as vital ecosystems for achieving long-term UNFCCC adaptation goals. Given the importance of mountains for risk management, they should also be explicitly reflected in the Loss and Damage Fund—especially for habitat destruction and slow-onset impacts (e.g., ecosystem shifts, increasing human–wildlife conflict, and accelerated extinction of heat-sensitive species leading to altered communities in high-mountain regions).

Integrating Mountain Ecosystems into National Adaptation Planning: Lessons from the South Caucasus

The South Caucasus is one of the world's biodiversity hotspots, home to thousands of plant and animal species across diverse climatic zones ranging from alpine peaks to semi-arid plateaus. More than 1.3% of the world's flora occurs in Georgia alone, and up to 40% of the region's plant species are regional endemics (UNEP 2024). The region also holds rich fauna, including 17 amphibian species, 73 reptile species, 58 rodent species, 14 insectivore species, and thousands of flowering and vascular plants, contributing to exceptionally high species diversity (Tarkhnishvili 2014; UNEP 2024).

The South Caucasus is highly vulnerable to climate change. Since 2000, the region has lost around 23% of its glacier cover, while reduced water availability and more frequent heavy rainfall events have intensified risks of landslides, flooding, and erosion (Ulander and Ter-Zakaryn 2012; Shatberashvili et al. 2015; Muccione and Fiddes 2019; Bayramov et al. 2019). These climate risks are compounded by unsustainable land use, agricultural expansion, and land degradation, further undermining fragile ecosystems and local livelihoods (UNEP 2024). Armenia, Azerbaijan, and Georgia are advancing climate change adaptation planning that links ecosystem resilience with livelihoods, disaster risk reduction, and sustainable development (UNEP and GRID-Arendal 2022). The National Adaptation Plans (NAPs) processes of these countries incorporate mountain-specific measures such as reforestation, flood prevention, integrated water resources management, and disaster risk reduction for upland settlements.

Armenia, a landlocked country with 90% of its territory above 1,000 meters, is especially vulnerable to hazardous hydrometeorological phenomena, including droughts, landslides, mudslides, and forest fires. Its adaptation efforts prioritize forest resilience, reforestation, and slope management to reduce risks in mountain areas (Armenia NAP 2021). Azerbaijan has identified mountain ecosystem resilience as a priority for 2025–2026, with measures focusing on mitigating flood risks, mudflows, and droughts in the Greater Caucasus. These also address impacts on water resources, soil erosion, and ecosystem services critical to local communities and tourism (Azerbaijan NAP 2024). Georgia, meanwhile, is developing its NAP to include mountain ecosystems as a priority sector, emphasizing sustainable management of glaciers, mountain ranges, and endemic species, alongside agriculture, water and coastal areas (UNEP 2023b). These national initiatives are reinforced through a series of Regional Adaptation Dialogues which promote cross-border knowledge exchange and capacity building. The Caucasus Environment Outlook (UNEP 2024) has provided important integrated assessments of the ecoregion, providing a mountain range wide lens to environmental issues. Despite financial and political challenges, the South Caucasus countries are building momentum to place mountain ecosystems at the heart of their adaptation strategies—creating opportunities to strengthen resilience, safeguard biodiversity, and support local livelihoods.

Fostering synergies between biodiversity and climate conventions

Collaboration among regional and global mountain platforms is increasingly vital to advancing an impactful mountain agenda as climate change accelerates. Working collectively, these platforms align priorities, share evidence and experience, and mobilize collective action—driving joint advocacy, cross-regional learning, and the sustainable management of mountain ecosystems.

Mountains are not only at the frontlines of environmental and climate change—they are strategic leverage points for global action. As implementation of the KM-GBF under the CBD and the Global Goal on Adaptation, together with broader climate mitigation and adaptation objectives under the UNFCCC, gains momentum, mountain ecosystems offer a unique entry point to operationalize the climate–biodiversity nexus. Their transboundary nature, biodiversity richness, ecological distinctiveness, and critical contributions to water security, food systems, carbon storage, and resilience position them as priority ecosystems for fostering synergies between the two conventions.

An important opportunity lies in advancing a joint work programme on biodiversity and climate change under the CBD and UNFCCC. Anchoring mountains within such a programme would help operationalize the mandate of CBD COP16 Decision 22 while also responding to the outcomes of the first Global Stocktake, which emphasized the urgency of strengthening adaptation and safeguarding vulnerable ecosystems. By positioning mountains as a pilot ecosystem for integrated climate–biodiversity action, Parties could harness existing regional governance structures and build a replicable model of ecosystem-based cooperation—enhancing synergies, policy coherence, and implementation capacity across frameworks, from NBSAPs and NDCs to national adaptation strategies.

Mountain ecosystems also provide natural platforms for nature-based solutions, given their multifunctionality in mitigation, adaptation, and biodiversity conservation. Elevating their role in a joint programme would strengthen coherence across conventions while generating tangible co-benefits for people, nature, and climate.

Mountains illustrate the importance of regional cooperation. Cross-border collaboration enables countries to share data, exchange expertise, and coordinate investments. Such cooperation is essential for implementing ecological restoration at the scale required for maximum impact and for advancing transboundary risk management, thereby creating new pathways for progress on adaptation, resilience, and loss and damage.

A coalition of champion countries and regions could further accelerate this agenda. By raising the political profile of mountain ecosystems and advocating for their stronger integration across both conventions, such a coalition would help mobilize resources, advance technical proposals, and promote mountain-based cooperation. In doing so, it could position mountains as a model for ecosystem-based action and as a driver of climate–biodiversity synergies aligned with the goals of the GBF and the Paris Agreement and relevant SDGs (1, 3, 13, 15, 17).

Leveraging platforms and networks for implementation and advocacy

Mountain platforms are critical for connecting global frameworks with grounded action. Their experience across regions such as the Alps, Andes, Carpathians, Himalayas, Central Asia, Caucasus, East Africa, and globally demonstrates effective models for implementation, peer learning, and policy coherence.

Strengthening mountain platforms within the CBD and UNFCCC frameworks is both timely and essential. By leveraging their comparative experience, advancing joint indicators, and mobilizing multi-level partnerships, mountain platforms can serve as a flagship for climate–nature integration and as a catalyst for global ambition. The role of these platforms in connecting science, policy, and communities offers a unique pathway to accelerate the implementation of the KM-GBF and the Paris Agreement, while ensuring that mountain ecosystems and the people who depend on them are not left behind.

Existing platforms are also drivers of innovation in monitoring, assessment, and science–policy dialogue. Many platforms already host consolidated exchanges between scientists and policymakers, such as the AMI Dialogues, the Science and Knowledge Advisory Committee of the Mountain Partnership, the Science for the Carpathians Network, the Caucasus Mountain Forum, or the HKH Science-Policy Forum which provide tested models for connecting knowledge with policy and inform decision-making processes. Regional initiatives like CMA, AMAP, HIMAP, ROSA, the Andean Forest Network, and IMHEA, alongside global networks such as GLORIA, ILTER, GLOMOS, and GEO-Mountains, offer established mechanisms for coordinated monitoring. Their outputs could feed directly into NBSAPs, NDCs, and adaptation communications, helping to strengthen coherence between local realities and global frameworks.

Mountain platforms can contribute to global assessments and dialogues, particularly through their engagement with IPBES, the IPCC-AR, and the Global Environment Outlook. Their involvement ensures that mountain issues are systematically reflected in global assessments and that biodiversity and climate interlinkages are better integrated into international science–policy processes. Advocating for dedicated IPCC chapters on mountains —building on earlier assessments, the 1995 IPCC Synthesis Report (IPCC, 1995), and the AR6 WGII Cross-Chapter Paper on Mountains (Adler et al. 2022)— together with stronger climate–biodiversity integration across multilateral platforms would improve risk knowledge, strengthen information flows, and support more informed decision-making.

These governance structures create space for the perspectives of Indigenous Peoples, local communities, and other rightsholders to be amplified in global forums. By fostering bottom-up approaches, they help ensure that biodiversity and climate action are not only effective but also fair and inclusive. This inclusive governance dimension reinforces the legitimacy of global processes and increases the chances of durable outcomes on the ground.

To institutionalize this role, mountain platforms could take responsibility for maintaining a permanent coordination mechanism—anchored either in a revitalized Programme of Work on Mountain Biological Diversity under the CBD or as an initiative that promotes articulated work and links CBD–UNFCCC (like an advisory group on mountain ecosystems) —to ensure continuity, cross-regional collaboration, and sustained political visibility for mountains in global governance. The Adaptation at Altitude programme, supported by the Swiss Agency for Development and Cooperation, provides a valuable model in this regard by facilitating regional collaboration, strengthening science–policy interfaces, and promoting knowledge sharing across mountain regions.

Integrated, science-based management of mountain landscapes is essential to safeguard biodiversity, strengthen climate resilience, and advance sustainable development. Prioritizing mountains in national policies and global frameworks offers a strategic pathway to deliver on international commitments. Embedding mountain ecosystems more explicitly in National Biodiversity Strategies and Action Plans (NBSAPs) and Nationally Determined Contributions (NDCs) would foster stronger alignment between climate and biodiversity agendas while facilitating concrete action on the ground.

As the implementation of the KM-GBF and the Paris Agreement continue, mountain ecosystems must be recognized as a global conservation priority. They are among the most vulnerable regions to climate change, yet their ecological richness and critical role in providing water, food, and other ecosystem services make them indispensable for global resilience. Elevating mountains within these frameworks is therefore both an urgent necessity and a strategic opportunity to advance integrated solutions for people, nature, and climate.

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Adaptation at Altitude, a collaborative programme launched and co-supported by the Swiss Agency for Development and Cooperation, assists mountain communities and those working with them by improving the knowledge of appropriate climate change adaptation and disaster risk reduction strategies in the mountains, and by transferring that knowledge through science–policy platforms to inform decision-making in national, regional and global policy processes. This issue brief is an example of that work.

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