

Research needs expressed in the Decisions of the Conference of the Parties to the Convention on Biological Diversity: Thematic Work Programme on Mountain Biodiversity

The world's mountains encompass some of the most spectacular landscapes, a great diversity of species and habitat types, and distinctive human communities (<http://www.cbd.int/mountain/default.shtml>). Mountains occur on all continents, in all latitude zones, and within all the world's principal biome types. Mountains provide freshwater for more than half of humanity, and are, in effect, the water towers of the world.

The cited Decisions that express research needs are VII/27 (where the work programme is annexed), VIII/3 and X/30.

Direct research needs

Decision	Paragraph	Chapeau / Heading	Text	Source http://www.cbd.int/decisions/
VII/27	Annex I Programme Element 2 Goal 2.1 Action 2.1.4	Goal 2.1: To enhance the legal, policy, institutional, and economic framework.	Improve the science/policy linkages by undertaking national and subnational scientific assessments of the causes of biodiversity loss , including making policy recommendations, in order to reduce the rate of loss of mountain biological diversity by 2010.	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 2 Goal 2.3 Action 2.3.2	Goal 2.3: To establish regional and transboundary collaboration and the establishment of cooperative agreements.	Promote and strengthen regional and transboundary cooperation for research , adaptive management, fair and appropriate allocation of water to ecosystems, and exchange of expertise to improve the conservation and management of mountain biodiversity (e.g., Global Mountain Biodiversity Assessment (GMBA) and International Centre for Integrated Mountain Development (ICIMOD)).	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 3 Goal 3.4	Goal 3.4: To improve research, technical and	Conduct long-term research on species adaptability to changing environmental conditions under climatic or human-induced global change , in relation to mountain biological diversity.	cop-07.shtml?m=COP-07&id=7764

	Action 3.4.1	scientific cooperation, and other forms of capacity-building related to mountain biological diversity.		
VII/27	Annex I Programme Element 3 Goal 3.4 Action 3.4.2		Conduct key research on the role and importance of mountain biological diversity and ecosystem functioning , considering ecosystem components, structure, function, processes and services.	
VII/27	Annex I Programme Element 3 Goal 3.4 Action 3.4.3		Develop and support research to assess the role of soil biological diversity and the diversity of protective vegetation cover for the stability and safety of mountain areas and watershed protection, e.g., avoidance of human-induced erosion, landslides and avalanches.	
VII/27	Annex I Programme Element 3 Goal 3.4 Action 3.4.4		Initiate mechanisms and develop collaborative research/scientific programmes of mutual interest among countries with mountains , especially those having common problems and comparable socio-cultural conditions.	
VII/27	Annex I Programme Element 3 Goal 3.4 Action 3.4.6		Conduct interdisciplinary, key research programmes on mountain biological diversity, and its relationship to ecosystem structure and functions , including communities-based management, with special reference to transitional zones linking upland-lowland ecosystems such as ecotones, hotspots, buffer areas and corridors.	
VII/27	Annex I Programme Element 3 Goal 3.4 Action 3.4.7		Develop capacity and enhance opportunities for community-based research and monitoring to conserve mountain biodiversity and provide greater benefits to mountain communities.	
VII/27	Annex I Programme Element 3 Goal 3.4 Action 3.4.8		Develop scientific and technical coordination mechanisms at national level for identification of research priorities and for optimising the efficient utilization of research results.	
X/30	Para 17	The Conference of the Parties	<i>Urges</i> Parties and <i>encourages</i> other Governments and relevant organizations, with the collaboration of the scientific community , relevant intergovernmental organizations and mountain communities, to study the effects of climate change as well as the effects of	cop/?id=12296

			adaptation and mitigation measures on mountain environments and biological diversity, in order to elaborate sustainable adaptation and mitigation strategies;	
X/30	Para 18	The Conference of the Parties	<i>Invites</i> Parties, other Governments and relevant organizations to develop research programmes for the implementation of all three objectives of the Convention on Biological Diversity in mountain ecosystems in a balanced manner	cop/?id=12296

Indirect research needs

Decision	Paragraph	Chapeau / Heading	Text	Source
VII/27	Annex I Programme Element 1 Goal 1.1 Action 1.1.2	Goal 1.1: To prevent and mitigate the negative impacts of key threats to mountain biological diversity.	Develop mechanisms and implement measures to reduce human-induced slope instability, adverse effects of natural geological hazards, and to maintain and/or enhance soil stability and ecosystem integrity by way of a diverse and natural vegetation cover that will also promote soil biodiversity function.	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 1 Goal 1.1 Action 1.1.4		Develop strategies specific to mountains ecosystems to prevent the introduction of invasive alien species and, when they have been introduced, control and eradicate their negative impacts on mountain biological diversity.	
VII/27	Annex I Programme Element 1 Goal 1.1 Action 1.1.5		Monitor and exchange information on the impacts of global climate change on mountain biological diversity, and identify and implement ways and means to reduce the negative impacts.	
VII/27	Annex I Programme Element 1 Goal 1.1 Action 1.1.7		Identify factors responsible for and possible measures to prevent the retreat of glaciers in some mountain systems and implement measures to minimize the impact of this process on biodiversity.	
VII/27	Annex I Programme Element 1 Goal 1.1		Identify local and long-range pollution (air, water and soil), which threaten mountain biodiversity at all levels and take appropriate measures to prevent and mitigate the impacts.	

	Action 1.1.8			
VII/27	Annex I Programme Element 1 Goal 1.2 Action 1.2.1	Goal 1.2: To protect, recover, and restore mountain biological diversity.	Develop and implement programmes to restore degraded mountain ecosystems and protect natural dynamic processes and maintain biological diversity in order to enhance the capacity of mountain ecosystems to resist and adapt to climate change, or recover from its negative impacts including, <i>inter alia</i> , by establishing corridors and taking appropriate measures to maintain ecological functions of natural corridors, where appropriate, to enable vertical migration of species, ensuring minimal viable population sizes to enable genetic adaptation to changing environmental conditions. These programmes should include socio-economic considerations, especially in relation to indigenous and local communities.	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 1 Goal 1.2 Action 1.2.3		Identify and protect unique, fragile mountain ecosystems , other biological diversity hotspots and their associated species , especially threatened species, giving priority consideration to measures aimed at strict <i>in situ</i> protection and/or developing <i>ex situ</i> mechanisms whenever feasible.	
VII/27	Annex I Programme Element 1 Goal 1.2 Action 1.2.4		Develop strategies for land-use and water-resource planning at landscape level using the ecosystem approach, taking into account elements of ecological connectivity and traditional uses of indigenous and local communities, and to prevent and mitigate losses of mountain biological diversity due to fragmentation and land-use conversion.	
VII/27	Annex I Programme Element 1 Goal 1.2 Action 1.2.7		Identify suitable practices for enhancing ecosystem sustainability with particular emphasis on degraded slopes.	
VII/27	Annex I Programme Element 1 Goal 1.2 Action 1.2.9		Review protected area systems within mountain regions and , as appropriate, take measures to ensure that these are developed and maintained to be comprehensive, adequate and representative, in line with decision VII/28 of the Conference of Parties on programme of work on protected areas.	
VII/27	Annex I Programme Element 1		Develop and implement measures to rehabilitate freshwater networks for migratory species , taking into account the physical barriers.	

	Goal 1.2 Action 1.2.10			
VII/27	Annex I Programme Element 1 Goal 1.4 Action 1.4.2	Goal 1.4: To promote access to, and sharing of benefits arising from the utilization of genetic resources related to mountain biological diversity in accordance with national legislation where it exists.	Develop methods to assess and conserve genetic resources of high economic value for promoting fair and equitable sharing of benefits, respecting national legislation on access to genetic resources.	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 1 Goal 1.5 Action 1.5.1	Goal 1.5: To maintain genetic diversity in mountain ecosystems in particular through the preservation and maintenance of traditional knowledge and practices.	Assess and develop strategies aimed at minimizing the threat of genetic erosion on domesticated biodiversity (crops, animals) and wild relatives, paying particular attention to the centres of origin of the genetic resources.	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 1 Goal 1.5 Action 1.5.3		Develop, validate and implement sustainable use practices for plants, animals and microorganisms at the genetic, species, population, community and ecosystem levels.	
VII/27	Annex I Programme Element 2 Goal 2.1	Goal 2.1: To enhance the legal, policy, institutional, and	Develop and introduce appropriate incentives, market and compensation mechanisms , in accordance with national and international law where appropriate, specific for the maintenance of mountain ecosystems and the goods and services delivered by the	cop-07.shtml?m=COP-07&id=7764

	Action 2.1.2	economic framework.	mountain ecosystems.	
VII/27	Annex I Programme Element 2 Goal 2.1 Action 2.1.5		Develop performance indicators and report on the integration of conservation and sustainable use of mountain biological diversity into institutional programmes, including sectoral policies, legal and economic frameworks.	
VII/27	Annex I Programme Element 3 Goal 3.1 Action 3.1.1	Goal 3.1: To develop work on identification, monitoring and assessment of mountain biological diversity.	Promote the monitoring of susceptible areas subject to climate change.	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 3 Goal 3.1 Action 3.1.2		Conduct mountain surveys in priority areas, for conservation and sustainable use of mountain biological diversity. These surveys should consider inventories at genetic, species and ecosystem levels.	
VII/27	Annex I Programme Element 3 Goal 3.2 Action 3.2.1	Goal 3.2: To improve knowledge on and methods for the assessment and monitoring of the status and trends of mountain biological diversity based on available information.	Develop key abiotic, biotic and socio-economic indicators of status and change of mountain ecosystems.	cop-07.shtml?m=COP-07&id=7764
VII/27	Annex I Programme Element 3 Goal 3.2 Action 3.2.2		Develop and select international, regional and national criteria and, where appropriate, quantifiable indicators for mountain biological diversity, taking into account the work of the Convention on monitoring and indicators and the knowledge held by indigenous and local communities, together with other experience of sustainable mountain management.	
VII/27	Annex I Programme Element 3 Goal 3.2 Action 3.2.3		Develop methodologies for assigning value to the ecological services provided by land management systems in order to develop economic-incentive mechanisms for compensating the poor and vulnerable mountain communities.	
VII/27	Annex I Programme Element 3		Assess and address the changing status of both local and long-range pollution and global climate change issues with special relevance to mountain ecosystems.	

	Goal 3.2 Action 3.2.4			
VII/27	Annex I Programme Element 3 Goal 3.2 Action 3.2.5		Assess and address fragmentation and impacts on biodiversity, by changing land-use management practices, e.g., land abandonment, mining.	
VII/27	Annex I Programme Element 3 Goal 3.2 Action 3.2.6		Assess and address the positive and the negative impacts of tourism and outdoor activities in mountain ecosystems.	
VII/27	Annex I Programme Element 3 Goal 3.2 Action 3.2.7		Assess and address natural dynamic processes in mountain ecosystems and the need to preserve areas for natural dynamic processes.	
VII/27	Annex I Programme Element 3 Goal 3.2 Action 3.2.8		Develop monitoring systems based on key national and subnational indicators of changes in mountain ecosystem structure and function taking into account existing monitoring expert knowledge and systems as well as relevant work and processes on indicators.	
VII/27	Annex I Programme Element 3 Goal 3.3 Action 3.3.3	Gal 3.3: To improve the infrastructure for data and information management for accurate assessment and monitoring of mountain biological diversity and develop	Encourage mapping and inventory of biodiversity and of land-use changes , using analogue and digital databases (remote-sensing, geographic information system) for scientific purposes and for supporting decision-making.	cop-07.shtml?m=COP-07&id=7764

		associated databases.		
VII/27	Annex I Programme Element 3 Goal 3.4 Action 3.4.5	Goal 3.4: To improve research, technical and scientific cooperation, and other forms of capacity-building related to mountain biological diversity	Foster exchange of experiences and knowledge of sustainable development and ecosystem vulnerability among countries with mountains, taking into account the vulnerability of social-cultural systems and communities.	cop-07.shtml?m=COP-07&id=7764
VIII/3	Annex I Para 3	Additional Planned Activities.	An increased knowledge of the species composition of mountains through national taxonomic studies and inventories; Working lists of organisms - assembling working lists of organisms occurring in montane areas including their vernacular names, with reference to altitude and relief; Working identification keys – producing identification keys in printed and electronic form useful for the conservation, monitoring and sustainable use of organisms in montane areas;	cop-08.shtml?m=COP-08&id=11015
X/30	Para 2	The Conference of the Parties	<i>Invites</i> Parties, other Governments, relevant organizations and indigenous and local communities to collect and update information periodically on : Mountain biological diversity including on sites of biological, ecological and socio-economic importance, in particular the mountain biosphere reserves, on ecosystem services, on endangered and endemic species, and on genetic resources, including, in particular, genetic resources for food and agriculture ; Direct and indirect drivers of change in mountain biological diversity, including, in particular, climate change and land-use change as well as tourism and sporting activities; Trends in use , including the intensity of harvesting of high-value species, in particular native and endemic ones, and consequent	cop/?id=12296

			changes in populations, habitats and ecosystem properties;	
X/30	Para 5	The Conference of the Parties	<i>Encourages</i> Parties, other Governments, relevant organizations and indigenous and local communities, to address climate-change and adaptation and mitigation issues for mountain biological diversity by: Supporting and coordinating research and monitoring networks on the impacts of global change in mountain regions, through observation of natural processes, ecosystem services and biological diversity;	cop/?id=12296