

(Agro)Biodiversity in Mountains

Authors: Hurni,, Hans, von Dach, Susanne Wymann, and Zimmermann,, Anne

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Dear Readers,

The Global Biodiversity Outlook 3 (<http://gbo3.cbd.int/>) underlines that the 2010 biodiversity target has not been met. Humankind has not succeeded in significantly reducing “the rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.” However, there are positive signals regarding policy and management responses. For example, the extent of protected areas and sustainably managed forests is increasing; initiatives to tackle ecosystem damage are on the rise; and some 170 countries have national biodiversity strategies.

The decline of biodiversity has not stopped at the foot of the mountains. Intensification of agriculture, land use, and climate change put pressure on mountains’ rich fauna, flora, and microorganisms. The 7th Conference of Parties (COP7) of the Convention on Biological Diversity in 2004 agreed that mountain biodiversity was a priority issue and a programme of work on mountain biodiversity was adopted by 188 countries (COP7 Decision VII/27, see also Sharma and Acharya 2004). The high variety of plants, animals, and microorganisms used directly or indirectly for food, fodder, fibre, fuel, and pharmaceuticals—also termed agrobiodiversity—is essential for mountain people’s livelihoods. Apart from offering provisioning ecosystem services, biological diversity fulfils crucial regulating, cultural, and supporting services. The current issue of Mountain Research and Development offers insights into the dynamics, state, and benefits of biological diversity in mountains, with a special focus on agrobiodiversity and possible responses to loss of diversity.

The authors of papers in the MountainDevelopment section discuss how changes in land use and conservation policies affect (agro)biodiversity and propose possible pathways for reconciling development with the conservation of (agro)biodiversity. First, Bezák and Halada identify what drivers have led to change in agrobiodiversity in the grasslands of a Slovak national park in the Carpathians, and what the implications are for habitats and species. The implementation of the European Common Agricultural Policy (CAP) is providing options for more sustainable management but further measures are needed. Second, Shen Shicai and co-authors describe how the conversion of swidden agriculture to forest under China’s national Sloping Land Conversion Program has led to a substantial loss of agrobiodiversity in Yunnan since 2002, and how a revival of swidden cultivation on a small scale and has attracted attention from villagers and the local government. Third, Robineau and colleagues show how the planned expansion of a core protected zone in the biodiversity-rich Rabanal páramo in Ecuador is endangering the livelihoods of family farms; they discuss options for more sustainable farming practices that also enhance conservation of páramo biodiversity and water resources.

In the MountainResearch section, de Haan and co-authors present a state-of-the-art analysis of the rich cultivar, morphological, and genetic diversity of potatoes grown by individual farm households in Peru. All the other articles in this section focus on aspects of (mainly vegetative) biodiversity rather than agrobiodiversity—either in relation to human intervention or with a view to providing data on less known mountain areas requiring protection. Thus, Sovu et al discuss direct seeding for degraded area restoration of pastureland in Laos, Tang et al examine the influence of secondary regrowth on plant species diversity patterns in Yunnan, Kosaka et al analyse the dynamics of some invasive alien plants in Arunachal Himalaya, and Singh describes religious rituals that help conserve natural resources in Uttarakhand, India. Tambe and Rawat offer a description of the rich alpine vegetation in Sikkim, and Baniya discusses elevational species richness patterns in Tibet; Shrestha and colleagues present a gap analysis of protected areas in Nepal, while McCarthy et al offer insights into the use of camera-trapping for monitoring wildlife diversity in the Kyrgyz Tien Shan.

Finally, the article by Maia Akhalkatsi and co-authors in the MountainNotes section presents an overview of current knowledge on genetic erosion of crop diversity in Georgia, with corresponding suggestions regarding the research and policy agenda needed to halt the loss of agrobiodiversity in this country. They underline the benefits of cooperation with the Global Mountain Biodiversity Assessment (GMBA), which—incidentally—has just launched the Mountain Biodiversity Portal (<http://www.mountainbiodiversity.org/>) in collaboration with the Global Biodiversity Information Facility (GBIF).

We hope our readers will find these articles useful in the International Year of Biodiversity 2010, and will consider responding and providing new insights.

Hans Hurni, Editor-in-Chief

Susanne Wymann von Dach, and Anne Zimmermann, Associate Editors

MRD Editorial Office, Centre for Development and Environment, University of Bern, Switzerland (mrd-journal@cde.unibe.ch)

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