



Focus Issue: Modernization and Sustainable Development in Mountains

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Focus Issue: Modernization and Sustainable Development in Mountains

Dear Readers,

The modernization paradigm, often criticized as oriented only towards economic growth without considering social justice and environmental integrity, is still influencing development, including in mountains. But it is also slowly changing under the influence of postgrowth and transition debates, the ideals of common welfare and wellbeing, and the concept of resilient economies. Under what conditions can this shift within the paradigm take place in mountains, and could sustainable modernization in mountains become a trendsetter? What is needed to make modernization lead to sustainable development? Sometimes there are synergies between the two goals, but more often trade-offs exist that need to be assessed and wisely dealt with in order to reduce negative impacts. In this Focus Issue, several papers address modernization and sustainable development, showing that development in mountains can take up positive aspects of modernization—for example, improved energy production and use, multilocal livelihoods, combined use and conservation of natural resources, agrotourism, and improved governance—and thus lead to greater sustainability if handled well.

In the MountainDevelopment section, the paper by Hastik and coauthors presents a variant of the “footprint” approach to support decision-making concerning renewable energies in the European Alps. The authors show how the approach can reveal the potentials of renewable energy sources in light of both space consumption and sustainability. But they also underline that a conflict of priorities remains between expanding renewables and nature conservation and that the paradigm of continually expanding energy use needs to be revised if we are to achieve sustainability in these mountain regions.

The MountainResearch section starts with a paper by Benz that analyzes modernization interventions by external actors in the Gojal region in northern Pakistan, showing how local households have succeeded in benefiting from these interventions while maintaining their identity as translocal migrants, thus transforming modernization into their own version of mountain development. In the next paper, Humer-Gruber assesses whether the model of the biosphere reserve succeeds in fostering sustainable regional development in the Austrian Alps; she shows that local farmers’ commitment to the model exists in theory but is jeopardized by structural changes in agriculture. The next paper, by Choenkwan et al, assesses another expression of modernity, agrotourism: can this model be sustainable in a formerly largely self-sufficient rural mountain society in northern Thailand? The authors conclude that success exists but is partial, limited to the attractiveness of sites for tourists. In the following paper, Gentle and Thwaites explore how transhumant pastoralism has changed under the influence of modernity; they argue that supportive policy and formal institutional arrangements could help maintain this socially and environmentally important practice in a time of market influence and social change.

The following papers focus more specifically on vegetation. Yinyam et al examine the impact of land use systems on carbon storage; they conclude that per capita carbon storage in the study villages well exceeds average per capita carbon dioxide emissions in Thailand, with highest storage efficiency in forests; for permanently cultivated land, they found highest storage in multistory gardens. The paper by Zhiyao Lu et al analyzes the impact of different forms of forest tenure on forest composition in Miao areas of Guizhou Province, showing that tree species richness and diversity are higher in state and collective forests than in household forests, but that this richness is likely due to long-term use and management by the Miao; the authors recommend a mix of all 3 tenure regimes for greater sustainability. In the next paper, Skrzecz and coauthors reassess the efficiency of a well-established pest control measure in European forests, debarking of stumps; their results show that this practice—particularly demanding in mountain terrain—could be avoided in forest management, as it does not reduce insect colonization. The final MountainResearch paper, by Wenhui He et al, measures the mass elevation effect (MEE) of the central Andean Cordillera and its impact on the Southern hemisphere’s highest treeline, and confirms the importance of the MEE as an explanatory factor for tree growth in mountains.

The final peer-reviewed article in this issue is part of the MountainAgenda section. Bjørnsen Gurung and coauthors present the results of a multistakeholder analysis of hydropower production and energy storage systems in the European Alps. They recommend developing assessment tools to evaluate the sustainability of such systems in a more participatory way in order to increase ownership of sustainable solutions and stronger public engagement supporting the energy transition.

In the MountainPlatform section, the Swiss Agency for Development and Cooperation presents a program to enhance policy dialogue and knowledge sharing for mountains—the Mountain Forum Series—and the International Centre for Integrated Mountain Development describes how the Hindu Kush Himalayan Monitoring and Assessment Programme aims to ensure that adequate knowledge of this major mountain region is increased.

We would like to thank International Editorial Board members Hermann Kreutzmann and Thomas Streifeneder for their support in conceptualizing the call for papers on modernization, and we wish our readers interesting insights into the related sustainability issues in mountains presented in this issue of MRD.

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