



## **Focus Issue: How Can Education Contribute to Sustainable Mountain Development? Past, Present, and Future Perspectives**

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# Focus Issue: How Can Education Contribute to Sustainable Mountain Development? Past, Present, and Future Perspectives

Dear Readers,

When the call for this focus issue was published in late 2019, the world was very different. The global COVID-19 pandemic that has since ravaged—and continues to ravage—societies had not yet reared its ugly head. The toll on the education sector was to become severe, with widespread disruption of learning and teaching for an entire generation of students and instructors. One year into the crisis, UN Secretary-General António Guterres warns that “If we are to avert a generational catastrophe, reduce inequalities and achieve the Sustainable Development Goals [SDGs], then we simply must prioritize and protect education” (UNESCO 2021). Taking a closer look at education through the twin lenses of sustainable mountain development and the pandemic is thus more than opportune. While most contributions to this focus issue relate to the first lens, several contributions look to the future and thereby offer an opportunity to consider the second.

Learning and teaching about mountains has a long history. In the first issue of the *Revue de Géographie Alpine*, the oldest scientific journal dedicated to mountains, Raoul Blanchard (1913) listed issues to be considered in mountain studies. Ranging from climate to land, water, flora, agriculture, fauna, economic structure, rural life, property, settlements, and inhabitants, he established a standard for a highly multifaceted approach. In his editorial to the first issue of *Mountain Research and Development*, Jack Ives (1981: 4) echoed Blanchard in calling for an interdisciplinary and multidisciplinary editorial stance “embracing the human and natural sciences, architecture, medicine, engineering, and in fact everything appropriately related to mountains.”

Over the past 4 decades, this journal has confirmed the importance of reaching across disciplinary divides in research and teaching; most mountain scientists also share a commitment to field-based studies, which allow students to experience real-world problem solving. Furthermore, mirroring educational developments elsewhere, mountain studies have embraced distance education and brought education closer to rural areas and livelihoods (Price and Rennie 2005), explored transdisciplinary approaches (Balsiger 2015), and highlighted the importance of integrating formal, nonformal, and informal education (Fritz et al 2017) and of knowledge transformation and skills transfer (Phanchung 2019).

Opening new pathways towards sustainable development requires fostering transformational change from local levels to the global level, and this can only be done if mindsets and behavior start changing (Sterling et al 2018). Have they started changing, in general or as a result of the pandemic? UNESCO’s Framework for the Implementation of Education for Sustainable Development (ESD) Beyond 2019, published prior to the crisis, already pointed to a need for transformative action as the result of a transformative form of learning; for understanding the deep and context-bound structural changes required for sustainable development; and for reflecting critically on the challenges and opportunities of a technological future (UNESCO 2019).

Each of these needs is relevant to education in, and for, mountains and mountain communities. Of course, education is far from being the only lever of change in ways of thinking and doing: many other factors also play a role. Moreover, education systems themselves are often jeopardized by counterproductive structural environments. But fundamentally, it is not education itself that will change things: it is people. Linking learners and teachers to practice and values is therefore key.

A multiplicity of educational experiences, programs, and approaches exist or are currently being designed—in, on, or for mountains—but they are either little known, or documented only in specialized education journals. This focus issue provides some answers to the question of how education can contribute to sustainable mountain development and to mitigation of negative impacts; answers can come from the past, present, and envisioned future of education on, in, and for mountains and mountain people. We understand “education” in a broad sense, including formal education from schools to postgraduate education, all types of training for practitioners, lifelong learning opportunities, and all types of informal and nonformal education.

Five contributions in the *MountainDevelopment* section present systematically validated experiences of how innovative formal, nonformal, and informal educational initiatives in mountain contexts have been, or can be, shaped and implemented so that they contribute not only to increasing knowledge but also to changing mindsets and practices towards sustainability. Abdrisaev and colleagues document how student engaged learning in support of International Mountain Day provides adult and nontraditional learners at Utah Valley University with an opportunity to engage in an extracurricular group activity. Keryan and colleagues use UNESCO’s ESD Beyond 2019 framework, cited above, to show how a transdisciplinary education project on sustainable tourism in Armenia and Georgia made an impact in the priority areas of Education and Training, Educators, and Youth, but less so in the domain of Policy and Communities due to the project’s short lifetime. Price and Bryce trace the history of the online MSc in Sustainable Mountain Development at the University of the Highlands and Islands, Scotland, established in 2004, and offer lessons based on feedback from alumni. Focusing on environmental education in the Argentinean Altiplano, Vilá and colleagues demonstrate how the use of art can generate sensitivity, experiential knowledge, and a comprehensive vision of the environment. Otero and colleagues review the activities of the Interdisciplinary Centre for Mountain Research of the University of Lausanne, Switzerland, to emphasize the importance of serendipity in inter- and transdisciplinary knowledge creation.

Three articles in the MountainResearch section analyze existing education forms and systems in and on mountain themes, and systematically assess their effects on mountains and mountain people, the ways in which these effects are achieved along with other drivers of change, and their potential to support sustainable mountain development. Ueno and colleagues provide preliminary insights from a survey of almost 30 mountain studies programs, finding key elements of the ESD for 2030 framework, including concern for transformative learning and critical reflection on the structural causes of unsustainability. Using the example of Swiss regional nature parks, Hunziker and Hofstetter discuss how attachment development can be combined with transformative learning to contribute to sustainable regional development in rural areas. Voigt and Spies demonstrate how female education in a remote and male-dominated mountain community in Pakistan has contributed to an increase in self-determination of women.

Finally, 2 contributions in the MountainAgenda section analyze education issues related to sustainable mountain development, seeking to define agendas for future research or policy with the aim of increasing sustainability through education in and for mountains. Mitrofanenko and colleagues analyze the participatory ESD-related processes of the Carpathian Convention and offer recommendations for further integration of ESD through a dedicated working group and stronger support by the Convention Presidency. Sarmiento and colleagues call for greater attention to montology, the transdisciplinary science of mountains, outlining how it can energize transformative change from sustainable to regenerative development.

The same goal of contributing to transformational change towards sustainability in mountains is also pursued by the member institutions of the International Mountain Society, although much of their work focuses on aspects other than education. Three members present their objectives and recent activities in the MountainPlatform section. The Mountain Partnership Secretariat at the Food and Agriculture Organization of the United Nations (FAO) highlights its efforts to promote mountain biodiversity, including through sustainable value chains. The Global Mountain Safeguard Research (GLOMOS) Programme, a collaboration between the UN University Institute for Environment and Human Security and Eurac Research, presents its activities linking academia and the UN System to foster transformative resilience in mountains. The Canadian Mountain Network, finally, outlines how it will support decision-making and action to advance sustainable mountain development in Canada and globally by working with Indigenous and Western ways of knowing. The issue closes with 2 reviews of books on topics relevant to sustainable development in mountains.

Taken together, we hope readers will find that the articles in the peer-reviewed sections of this focus issue provide a useful set of examples and insights into education for sustainable mountain development around the world, and that they will provide a basis for future research, policy, and action that will benefit those who live and work in mountain areas.

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