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Investing in securing ecosystem goods and services

Mountain wetlands such as the Qinghai Lake Wetland in China are at the heart of global water systems
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Investing in the conservation and protection of mountain ecosystems offers great prospects for socio-economic development. Intact ecosystems are crucial for fostering resilient mountain livelihoods, as well as for securing critical ecosystem services for people and economies in the lowlands. Recognizing the value of these goods and services is crucial for attracting investments, which often take the form of compensation schemes that benefit people both in the mountains and in the lowlands.

Opportunities and challenges

Mountains offer a wealth of ecosystem goods and services for both mountain and lowland communities. Mountain ecosystems provide water to over half of humankind for drinking; irrigation, and hence global food security; and hydropower generation. They offer rich biodiversity including the genetic resources of major global staples such as maize and potatoes, and medicinal plants. Mountain forests help mitigate climate change by acting as carbon sinks, and prevent natural hazards such as landslides and avalanches. Mountains are also a place for recreation. All these valuable and irreplaceable ecosystem services can become great opportunities for investments to spur economic activities for people living both in and outside mountain areas. Not surprisingly, the significance of intact mountain ecosystems is emphasized in two Sustainable Development Goals (SDGs) – SDG 6 (sustainable water management) and SDG 15 (sustainable terrestrial ecosystems) [1].

Today, the continued supply of mountain ecosystem services is threatened by climate change; changing land use; depletion of biodiversity; overuse of forests, croplands and grazing lands; and natural hazards. These threats also put at risk mountain natural habitats as well as people's livelihoods in mountains and low-

lands. Reversing environmental degradation in mountain landscapes is challenging, and requires arduous and permanent work. It also requires long-term investment, often upfront and with long pay-back periods. But the benefits from efforts devoted to sound resource management by mountain people are far-reaching, often felt at least equally – if not more – by people living outside mountains.

Compensation mechanisms are a way forward

These challenges offer opportunities for lowland beneficiaries to help fund investments that would secure the flow of mountain ecosystem goods and services. Investments may take the form of compensation mechanisms, of which a variety have been developed in the past two decades, to reward mountain people for their efforts in securing ecosystem goods and services for downstream beneficiaries. Many of the schemes relate to the supply and quality of fresh water. These investment mechanisms are particularly beneficial where traditional financial schemes are lacking or not sufficient.

Compensation mechanisms have a real chance of becoming lasting and effective solutions for safeguarding mountain ecosystems as well as improving mountain livelihoods, if

- the value of ecosystems is assessed comprehensively;
- the mechanisms factor in savings made in the lowlands thanks to mountain services (e.g. flood control, which would otherwise demand a huge investment to protect land and infrastructure in lowland areas);
- the mechanisms are established in a participatory way and meet the needs of those who ensure the ecosystem service, and also provide economic rewards for those who pay compensation;
- the mechanism assures fair and transparent benefit sharing in the receiving communities;
- transparent standards relating to the desired services are established, and effective monitoring of their fulfilment takes place.

As case studies in this section show, funds that are jointly fed by donors and local people not only increase the financial means available, but also the commitment of the parties involved, and lead to positive impacts on natural resources (J. Junghardt and M. Tharin, pp. 50–51). Depending on the mountain region, cash-based schemes are less well accepted than in-kind, labour-based reward measures, not least because these are less exposed to corruption and more adapted to the traditional culture of the stakeholders, who do not perceive ecosystem services as marketable commodities (S. Charré, pp. 52–53).

In our globalized and increasingly urbanized world, even people living far from mountains are increasingly aware of the value of mountain ecosystem services for their livelihoods and well-being, and are willing to pay for the uninterrupted flow of these services. Investors in compensation schemes thus include a wide range of actors such as international development agencies, international and national conservation non-governmental organizations, the private sector, philanthropic institutions and private individuals. If compensation and conservation schemes are linked with business opportunities for local people, including access to international markets where feasible, they also promote the regional economy (K. H. Fitzgerald, pp. 56–57; B. Hora and C. Marchant, pp. 58–59; M. Jurek pp. 60–61). International compensation schemes such as climate funds offer an opportunity to regenerate degraded lands (B. Habermann et al., pp. 54–55), benefiting in the longer term not only the global but also the local community, thanks to the multiple services provided by these areas.



Farmer using the traditional *chaquitacla* in Píttumarca, Peruvian Andes (S.-L. Mathez-Stiefel)