

4 Emerging Opportunities

Seizing Opportunities

As described extensively in this document, different drivers of change, particularly climate change, are increasing stresses on mountain social-ecological systems and require targeted efforts to enable the resilience of these systems to be strengthened. Equally, growing awareness of the importance of mountain ecosystem goods and services calls for the specific attention of the global community and creates new opportunities for mountain people which should be seized. The emerging opportunities for sustainable development in mountains include the increasing demands for mountains as places for recreation, for high-value mountain products, and for freshwater as a scarce resource, as well as the recognition of the potential of mountains for carbon sequestration, as a refuge for species which can no longer survive or be grown in the lowlands (Singh et al. 2010), and for the generation of hydropower. The financial and social remittances from labour migration flowing back to mountain areas offer further opportunities



Rewards for Mountain Ecosystem Services

Mountain people, through their still predominantly sustainable land management practices, provide a number of positive externalities (non-market side effects of an economic activity) including (agro-) biodiversity conservation; carbon sequestration and climate mitigation; soil protection and preservation; water/watershed management; protection from and prevention of natural hazards (e.g., avalanches, floods); and preservation of cultural and natural landscapes for recreation (FAO 2009). So far, there are only a few examples of mountain people

being rewarded for such services, in part because there is a lack of public awareness and a lack of valuation of the importance of mountain ecosystem services and of the people serving as stewards for these services. Payment for environmental services (PES)³ schemes are one way to reward mountain communities for the vital services they provide. At the same time, such schemes provide incentives to prevent the deterioration of mountain natural resources and the environment, which will help make them more resilient to future climate change. Such schemes should therefore be promoted at a global scale in order to make mountain social-ecological systems more resilient in view of climate change.

³ PES schemes consist of a payment of direct compensation for the maintenance or provision of an environmental service by the users to the providers of the service (Hassan et al. 2005, p703).

Framework Conditions Conducive for Promoting Sustainable Mountain Development

Today, for the first time since the Rio Earth Summit, we are experiencing an emergence of awareness of the importance of mountain systems for the sustainability of mountain ecosystem goods and services. In addition, both the conviction that adaptation calls for tailored packages that are specific to different eco-regions, and the availability of potential investment funds that help to mobilise the required resources for adaptation and mitigation initiatives, are further attracting global attention to mountain systems. The Adaptation Fund of the Kyoto Protocol, for example, includes a specific clause to favour project or programme proposals submitted by developing countries which include fragile mountain ecosystems that are particularly vulnerable to the adverse effects of climate change (Adaptation Fund Board 2010). REDD (reducing emissions from deforestation and degradation) or REDD-plus (enhancement of carbon stocks) are other important mechanisms under the United Nations Framework Convention on Climate Change (UNFCCC) which offer incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development (UN-REDD Programme 2010). Given that 28% of the world's forests are situated in mountain areas (IPCC 2007a,b), mountains bear a huge potential for carbon storage and sequestration and are therefore in a privileged position to attract such funds for climate change mitigation.

From this point of view, climate change is an opportunity for mountain ecosystems and people. Regardless of the lack of information on detailed impact scenarios, it is clear that mountain systems will be essential building blocks for long-term sustainable global development. The question is whether the countries whose territories contain a substantial part of, or an entire, mountain system have the capacity to take up the challenge to collaborate in order to benefit from these emerging opportunities.





Khumbu, Nepal