BioOne COMPLETE

ICIMOD's Position on Climate Change and Mountain Systems

Author: Schild, Andreas

Source: Mountain Research and Development, 28(3) : 328-331

Published By: International Mountain Society

URL: https://doi.org/10.1659/mrd.mp009

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Downloaded From: https://complete.bioone.org/journals/Mountain-Research-and-Development on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

The Case of the Hindu Kush–Himalayas

ICIMOD's Position on Climate Change and Mountain Systems

The International Centre for Integrated Mountain Development (ICIMOD), together with its partners and regional member countries, is committed to a shared vision in which the mountain population of the greater Himalayas enjoys improved wellbeing in a sustainable global environment. ICIMOD's mission is to enable and facilitate the equitable and sustainable wellbeing of mountain peoples by supporting sustainable mountain development through active regional cooperation. ICIMOD functions as a 'Mountain Learning, Knowledge and Enabling Center.' Established in 1983, ICIMOD is an intergovernmental technical organization mandated to work in the Hindu Kush–Himalayan (HKH) region, which includes areas of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.

Mountains occupy 24% of the global surface area and are home to 12% of the world's population. Mountains have ecological, aesthetic, and socioeconomic significance, not only for those living in mountain areas, but also for people living beyond.

Increasing awareness of the impact of climate change on mountains, as highly fragile systems, and the consequences of this for the rest of the world, have put mountains at the center of international debate. ICIMOD, along with its global and regional partners, aims to help mitigate the effects of climate change and contribute to the ability of the people of the Hindu Kush–Himalayan mountain system to adapt to climate change.

Globalization calls for a locally specific development agenda

About 10% of the world's population depends directly on mountain resources for their livelihood and wellbeing, and an estimated 40% depends indirectly on them for water, hydroelectricity, timber, biodiversity and niche products, mineral resources, flood control, and recreation. Despite their importance, mountains are still marginalized on development agendas. Prevailing global concern focuses on economic growth, macroeconomic stability, trade liberalization, communication, privatization, deregulation, and structural reform. Neoliberalism and these macro trends leave little room for local, geographical, cultural, and social differentiation.

Mountains began to receive attention during the United Nations Conference on Environment and Development (UNCED) in Rio in 1992, with a specific chapter in Agenda 21. This was followed by the UN General Assembly's 2002 declaration of the 'International Year of Mountains,' the World Summit on Sustainable Development in Johannesburg 2002, and the Global Mountain Summit in Bishkek 2002. Despite this growing awareness of the importance of mountain systems, mountains have been increasingly marginalized by the globalized international development agenda.

Structural policies in the areas of human rights, poverty reduction and the Millennium Development Goals have called for sweeping general solutions. These policies have mostly led to the implementation of countrywide strategies that are not specifically designed for mountain regions. Although these policies have brought poverty to the forefront of international development agendas, they have failed to address the location-specific needs of mountain communities. As a result, mountain regions in many parts of the world, including the HKH region, lag behind in development.

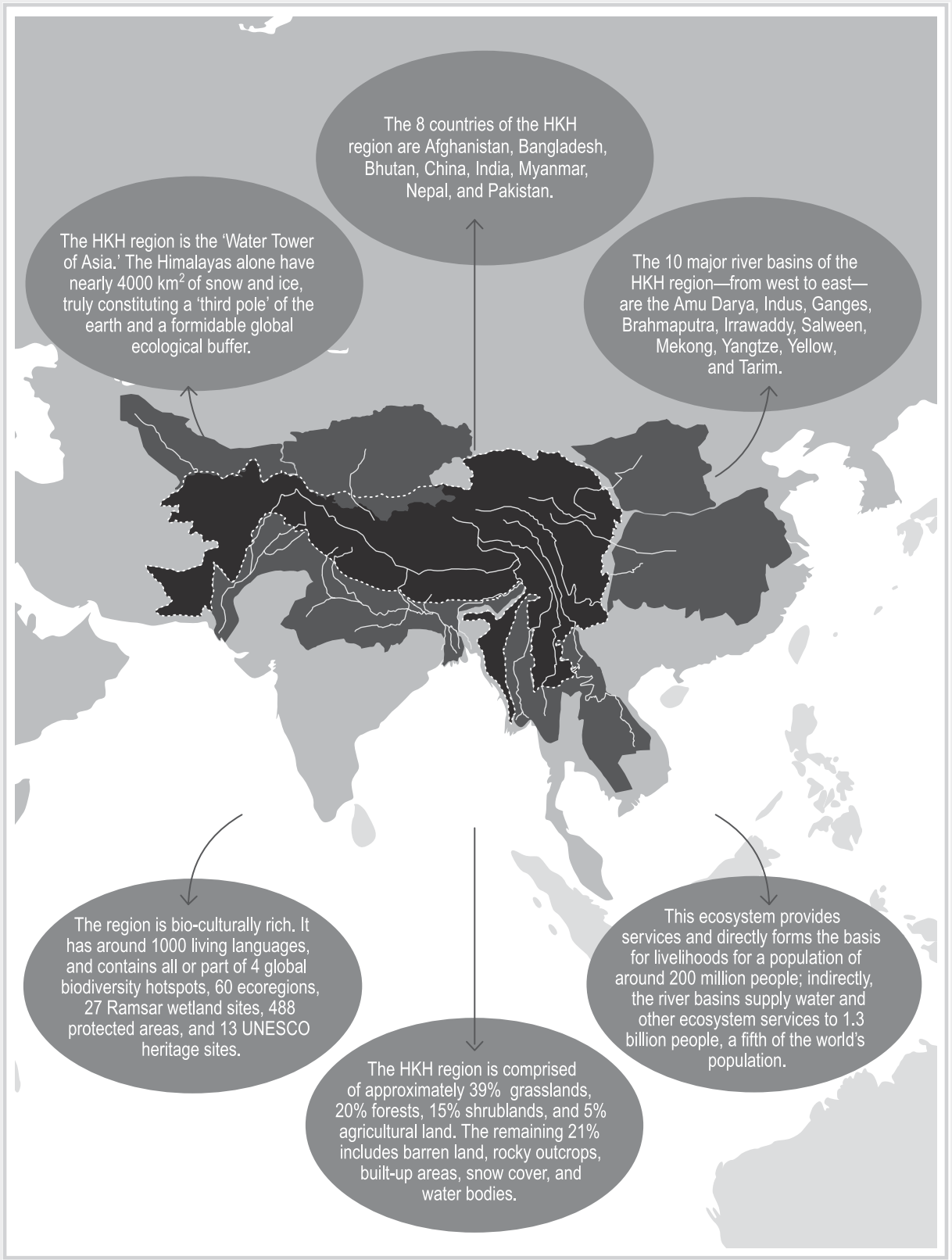
The HKH mountain system as a strategic example of mountain development

The Hindu Kush–Himalayan range spans over 4.3 million km^2. It contains varied geographical terrain and has many unparalleled characteristics. It is often referred to as the 'Third Pole' and the 'Water Tower of Asia,' as it stores a large volume of water in the form of ice and snow, and regulates the flow of the 10 major river systems in the region (Figure 1). The HKH region is home to many diverse ethnic communities speaking about 1000 different languages and dialects, with enormous socioeconomic and cultural diversity. These communities practice a variety of diverse farming techniques. The region is endowed with rich natural resources and contains global biodiversity hotspots, providing many ecosystem services directly to the 200 million people living in the HKH and indirectly to the 1.3 billion people living downstream, with the number of people benefiting from food and energy produced in the river basins totaling 3 billion (Figure 2).

The ethnic diversity and cultural wealth of the HKH region is enriched by the Hindu Kush valleys in Afghanistan; the high mountains of Nepal, India, and Pakistan; the Tibetan plateau of China; and the Three Gorges in the Far East of China. However, since the Second World War, the region has been a hotspot of political and military conflict. The Gangetic Plain, Indus Delta and Bangladesh floodplains are historically unique systems of global importance, which have produced food and been the backbone of cultural and economic development in the region for centuries. Recently, changes in the river systems and their basins have directly impacted on the wellbeing of billions of people. The HKH is a

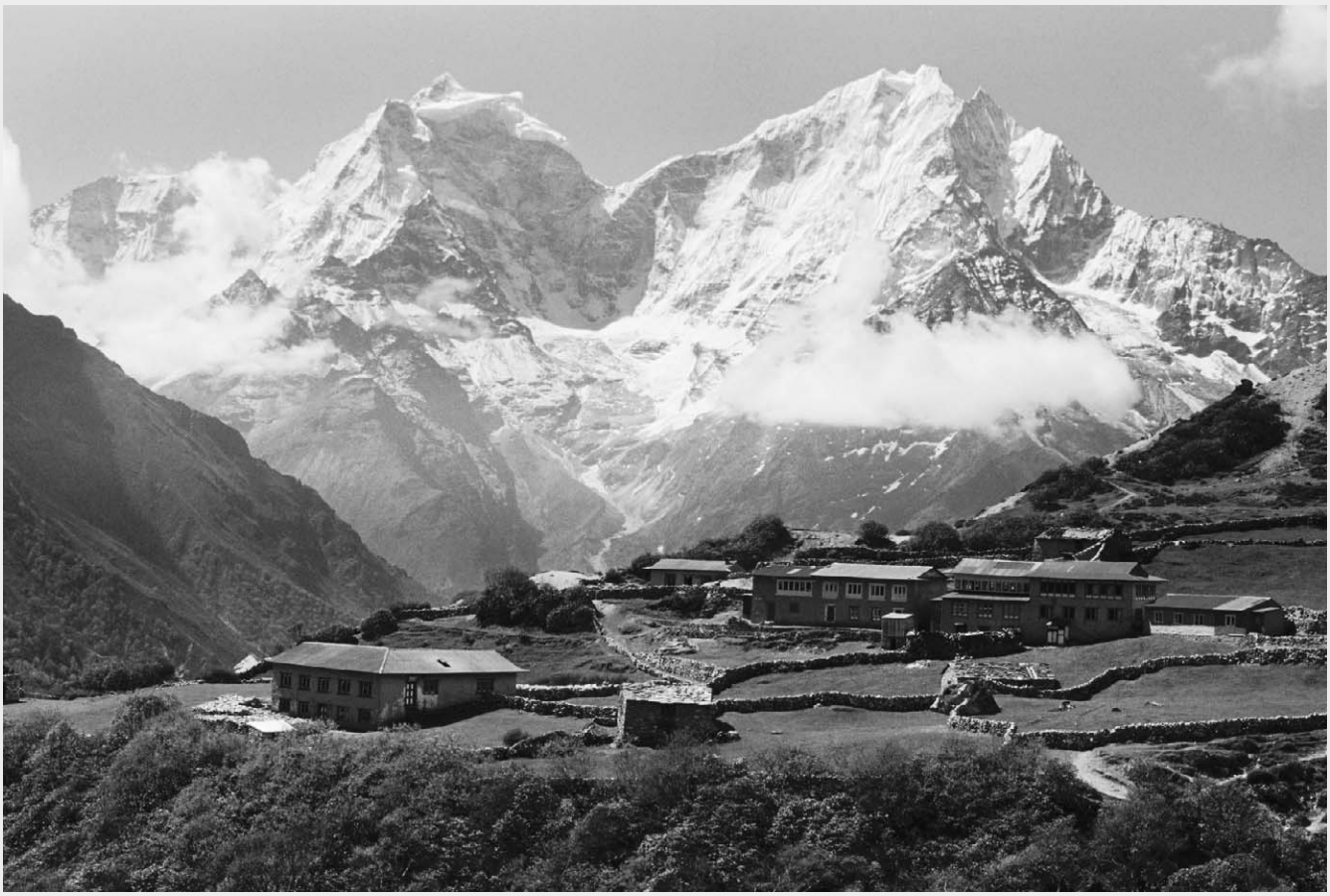
Downloaded From: https://complete.bioone.org/journals/Mountain-Research-and-Development on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

FIGURE 1 The HKH region and its river basins. (The geographic term 'Hindu Kush–Himalaya' is not very precise; ICIMOD's target area includes the Karakorum, the Pamir, and other neighboring ranges. Boxes portray the global importance of the region.) (Map by ICIMOD)



Downloaded From: https://complete.bioone.org/journals/Mountain-Research-and-Development on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

FIGURE 2 Settlement in the Khumbu region, Nepal, with a glacier in the background. (Photo by Alex Treadway)



leader in mountain development and is uniquely poised to face the challenges posed by climate change.

Climate change and the HKH region

In 2007, the Intergovernmental Panel on Climate Change (IPCC) provided overwhelming evidence of the global relevance of climate change. The 4th Assessment Report of the IPCC shows that the warming of the global climate system is unequivocal. Climate change has emerged as the most prominent force in global change; however, it is embedded in a matrix of drivers including globalization, population growth, and local land use change. This presents challenges in the disaggregation of climate change impacts and, consequently, in the complexity involved in dealing with them. According to the IPCC, the HKH region is a 'white spot' in that it lacks consistent long-term data; this calls for global, regional, and national attention to fill the gap. ICIMOD is committed to this task.

While climate change is a global problem requiring a global solution, mountain systems are particularly sensitive to climate change and must be considered separately. Generally, mountains contribute virtually nothing to the output of carbon and other polluting gases. Instead, they act as a central climate regulatory system, while at the same time being particularly affected by climate change. Responding to climate change in mountain regions calls for very specific, tailor-made solutions.

The HKH region has shown consistent trends in overall warming over the past 100 years. Studies in Nepal and China have shown that temperatures are rising at higher rates in high altitude areas than in other areas. With rising temperatures, the areas covered by permafrost and glaciers are decreasing in much of the region. Many of the Himalayan glaciers are receding at a rate faster than the world average. In many areas, a greater proportion of total precipitation appears to be falling as rain. As a result, snowmelt begins earlier and winters are shorter. This affects river regimes, ecosystem services including water supply, and livelihoods, as well as causing natural hazards.

ICIMOD wants to underline the consequences of climate change and to promote research to lessen the impact. The immediate impacts of climate change are particularly

Downloaded From: https://complete.bioone.org/journals/Mountain-Research-and-Development on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

harsh on the poor and vulnerable segments of society. ICIMOD intends to provide the knowledge and expertise needed to alleviate these consequences. Adapting to and mitigating the effects of climate change in the region are vital to the region's people and have ramifications for the global community.

Ecosystem services, food security and adaptation in the HKH

ICIMOD is committed to seeing that the ecosystem services provided by mountain communities are recognized. It intends to ensure that these services are sustainable and enhanced to benefit the region's mountain people, as well as the wider region and the world. ICIMOD also aims to obtain recognition for the value of such services provided to those downstream and ensure adequate compensation.

Mountain people are the custodians of valuable ecosystem services, and their role should be appreciated and compensated. The Indian government has shown a progressive attitude in recognizing the ecosystem services provided by its mountain states, where many development programs are financed by the central government through 90% grants. Recently the central government has made a policy decision to provide an additional US$ 250 million to mountain states as compensation for ecosystem services. Similarly, in China, in 1998, the central government initiated the Grain for the Green Program, under which mountain areas received grain and cash in compensation for converting sloping lands into forested areas for ecosystem services. The Government of Bhutan is already thinking of providing direct compensation to the custodians of ecosystem services in the catchment areas of two major hydroelectric projects. These examples clearly show that there is already a considerable positive attitude towards compensating mountain communities for the provision of ecosystem services in the HKH region. However, the challenge is to develop mechanisms for compensation and for the distribution of benefits. This is where knowledge centers like ICIMOD can be valuable.

The recent global food crisis is an issue of great importance to mountain communities. It becomes even more critical when one views the problem of ensuring food security while maintaining the ecosystem services that mountain areas provide. Hence, a more holistic approach has to be adapted to broader development issues. Food security cannot be achieved without enhancing livelihood options, and the livelihoods of poor communities cannot be improved unless productive resources, such as water, land, forests, rangelands, biodiversity, and the natural environment, are conserved and their access and optimal utilization in terms of ecosystem services are ensured.

ICIMOD encourages the development of regional capacity in relation to the delivery of ecosystem services, particularly by addressing disaster risk reduction, watershed development, community forestry, the integrated management of water resources, and participatory biodiversity management. Both environmental and societal adaptations to climate change are programmatically focused. ICIMOD also promotes regional and transboundary approaches for enhanced ecosystem services, especially in relation to the mitigation of flash floods, early warning systems, and the conservation and management of biodiversity in landscapes. The prevailing scientific uncertainty surrounding climate change and its impact on ecosystem services and livelihoods for mountain people is an area of interest in which ICIMOD is working towards both medium- and long-term solutions.

Andreas Schild
Director General
International Centre for Integrated Mountain Development, Khumaltar, Lalitpur, PO Box 3226, Kathmandu, Nepal.
aschild@icimod.org
www.icimod.org

doi:10.1659/mrd.mp009

Downloaded From: https://complete.bioone.org/journals/Mountain-Research-and-Development on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use