



## CHAPTER 2 BRIEF

# DRIVERS OF CHANGE TO MOUNTAIN SUSTAINABILITY IN THE HINDU KUSH HIMALAYA

The Hindu Kush Himalaya (HKH) is among the most diverse regions of the world, environmentally, socioculturally, and economically. Mountain systems are strongly affected by multiple local and global drivers of change in more densely populated lowlands. A comprehensive analysis of these drivers reveals that individual and cumulative impacts are reflected at multiple spatial and temporal scales and are complex in their interactions and impacts.

This chapter describes environmental, sociocultural, and economic dimensions of change and seeks to identify the main drivers of change affecting mountain sustainability in the HKH. It outlines and describes trends, as well as existing and potential impacts of a varied and sometimes complex set of drivers of change to mountain sustainability.



## KEY FINDINGS

- Looming challenges characterize the HKH as environmental, sociocultural, and economic changes are impacting livelihoods, environmental conditions, and sustainability.
- The drivers of change impacting sustainability are interactive, inextricably linked, and increasingly influenced by regional and global developments.
- However, for mountain communities, some changes may also present novel opportunities for sustainable development.

## POLICY MESSAGES

- Policy approaches must become more holistic and multidimensional to meet the challenges arising from environmental, sociocultural, and economic change in the HKH.
- Governments should take strong and timely action to strengthen the sociocultural and environmental dimensions of sustainability, while also fostering responsible economic growth in the mountain regions.
- Governments in the region should combine and accelerate efforts to advance sustainable mountain development, especially with a view to benefiting from the global conservation and development agenda, such as the UN Sustainable Development Goals for 2030.

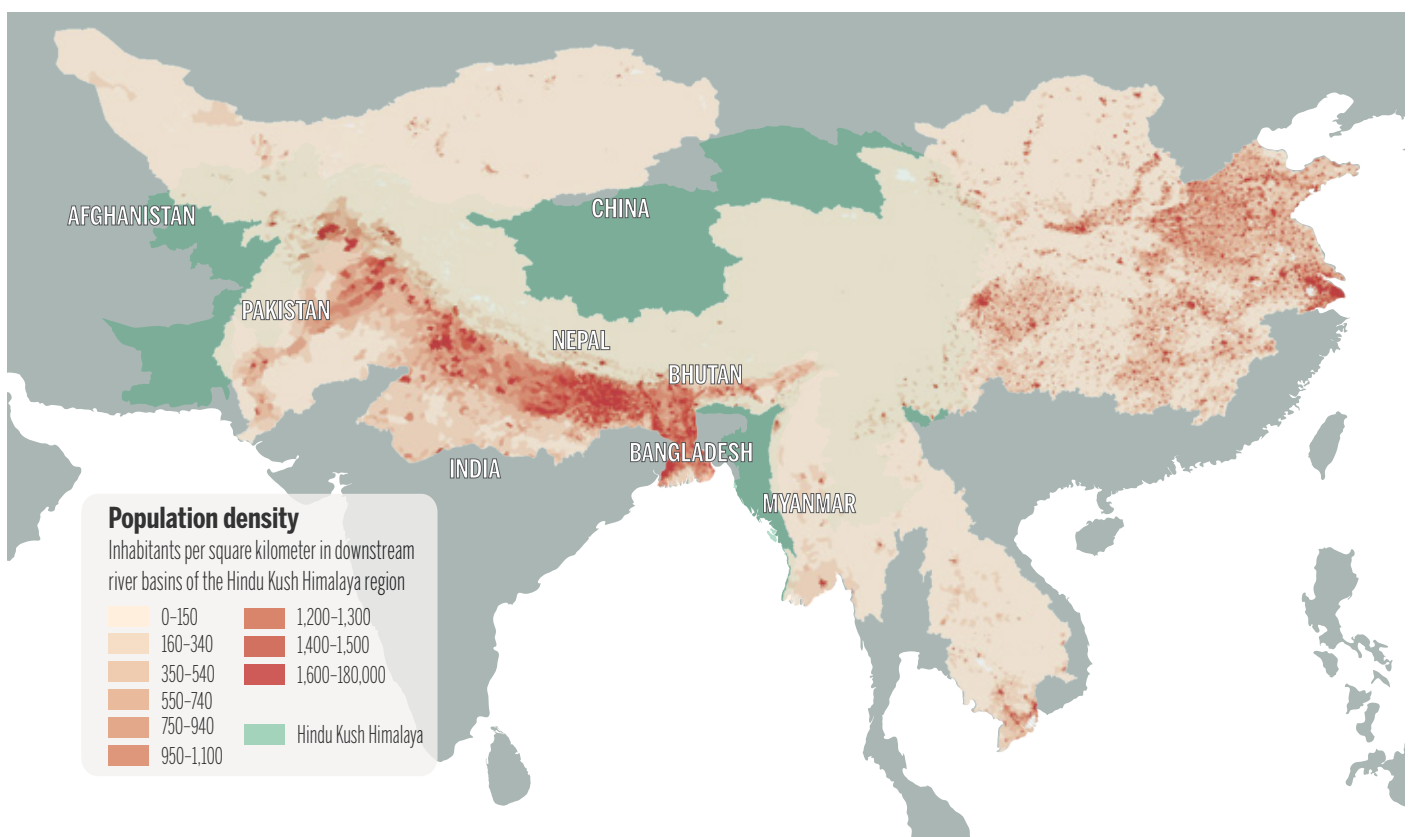
# OBSERVATIONS AND TRENDS

## DEMOGRAPHIC SHIFT OF POPULATION TOWARDS THE CITIES WILL CREATE FUTURE CHALLENGES THROUGH ENVIRONMENTAL IMPACTS

In most areas of the HKH, rapid demographic and economic growth have increased the demand for natural resources leading to overexploitation, significant land use and land cover change, habitat fragmentation, and unsustainable growth. Rapid economic growth has changed levels and patterns of consumption as well as infrastructure investment. Large scale investments have a multitude of intended or unintended effects, some of which are negative, including social and environmental consequences. Demographic shifts, with people increasingly concentrated in town and cities, are expected to create future challenges through environmental impacts caused especially by a growing demand for food and energy. At the same time, this may also lead to improved quality of and access to social services such as education, health care, and waste management.

High level transnational cooperation and local participation are needed to cope with conflicts arising due to rapid demographic change, increasing land use, over-exploitation of natural resources and weak governance systems.

## PEOPLE ARE INCREASINGLY CONCENTRATED IN URBAN AREAS THAT DEPEND ON NATURAL RESOURCES FROM THE HINDU KUSH HIMALAYA







## TECHNOLOGICAL INNOVATIONS HAVE LED TO A DECLINE IN TRADITIONAL WAYS OF LIFE, AND TO A MORE INTENSE USE OF NATURAL RESOURCES

Technological innovations have markedly affected people's ways of life in the HKH, especially local and indigenous sociocultural practices, enabled through the development of a range of opportunities in remote mountain areas. With a gradual integration into regional and global markets, many rural societies in the region are now shifting from subsistence farming to more market-based agricultural production, including cash crops. Such changes have contributed to the conversion of croplands to non-agricultural use, a decline in traditional ways of life, and more intense use of natural resources — along with rising incomes and enhanced livelihoods, albeit not uniformly among all people or groups. Advances in agricultural technology and biotechnology may improve crop yields and food security, while increased access to global ICT services including smartphones, open access software and cloud computing can make mountain regions more accessible.



## DEMOGRAPHIC CHANGES, GOVERNANCE SYSTEMS, AND CLIMATE CHANGE MAY HAVE THE MOST HARMFUL IMPACTS ON SUSTAINABLE DEVELOPMENT IN THE HKH

Several major drivers, in particular demographic changes, governance systems and institutions, and climate change, are likely to have the most harmful or challenging impacts on sustainable development in the HKH. As countries work to adapt their practices and mitigate these impacts, they must collaborate closely with each other. Weak governance and uncertain or insecure land tenure, in particular, along with political unrest, local conflicts, and migration, are also exacerbating environmental degradation through various activities such as poaching, unsustainable timber harvesting, and other forms of over-exploitation of natural resources.



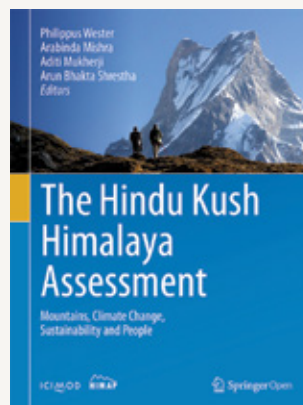
## CHANGES IN ONE DRIVER RESULT IN INTERACTIVE OR FEEDBACK EFFECTS ON OTHER DRIVERS

The origin and impact of key drivers of change in the HKH manifest at three main levels or scales: direct local impacts of drivers on land and natural resources and their management, within a framework of coupled social-ecological systems; regional effects of local drivers, mediated largely through provision of ecosystem services in the context of highland-lowland linkages; and regional and global influences on the HKH through telecoupled systems, whereby decisions or actions made outside the region have significant impacts within the HKH. In the widely interconnected spheres of influence of each driver, multiple pathways of impact are common, including both direct and indirect associations with mountain sustainability. Human-related drivers affect mountain sustainability at different spatial and temporal scales; both the assessment and management of these drivers is complex. Changes in one driver generally result in interactive or feedback effects on other drivers. That is, for any given change, the effects are always multiple and often interactive; there is no simple causal link between a driver of change and any single aspect of mountain social-ecological systems.



## THERE IS AN URGENT NEED FOR IMPROVED COORDINATION AMONGST DEVELOPMENT STAKEHOLDERS

All the above challenges create an urgent need for improved coordination amongst development stakeholders, including governments, for formulating evidence-based policies and legislation, effective institutional arrangements, transparent decision making, and greater transboundary cooperation in regional aspects of conservation and development across the HKH.



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