

Caring for Our Transboundary Landscape

Illustrations from the Kailash Sacred Landscape

ICIMOD

FOR MOUNTAINS AND PEOPLE

giz



Copyright © 2012

International Centre for Integrated Mountain Development (ICIMOD)

All rights reserved.

Published by

International Centre for Integrated Mountain Development

GPO Box 3226, Kathmandu, Nepal

ISBN 978 92 9115 250 6 (printed)

978 92 9115 251 3 (electronic)

LCCN 2012-232205

Production Team

Andrea Perlis (Senior editor); Amy Sellmyer (Proofreader); Punam Pradhan (Layout and design)

Asha Kaji Thaku (Editorial assistant)

Illustrations: Ekaram Maharjan

Cover Illustration: Asha Kaji Thaku

Printed by Quality Printers (P) Ltd, Kathmandu, Nepal

Reproduction

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. ICIMOD would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from ICIMOD.

Note

The views and interpretations in this publication are those of the authors. They are not attributable to ICIMOD.

Citation: Oli, KP; Rana, PSJ; Peili, S; Rawal, RS; Chaudhary, RP (2012) *Caring for Our Transboundary Landscape – Illustrations from the Kailash Sacred Landscape*. Kathmandu: ICIMOD

This publication is also available at www.icimod.org/publications

Caring for Our Transboundary Landscape

Illustrations from the Kailash Sacred Landscape

Krishna Prasad Oli
Pradyumna SJ Rana
Shi Peili
Ranabeer S Rawal
Ram Prasad Chaudhary

International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal, 2012

Contents

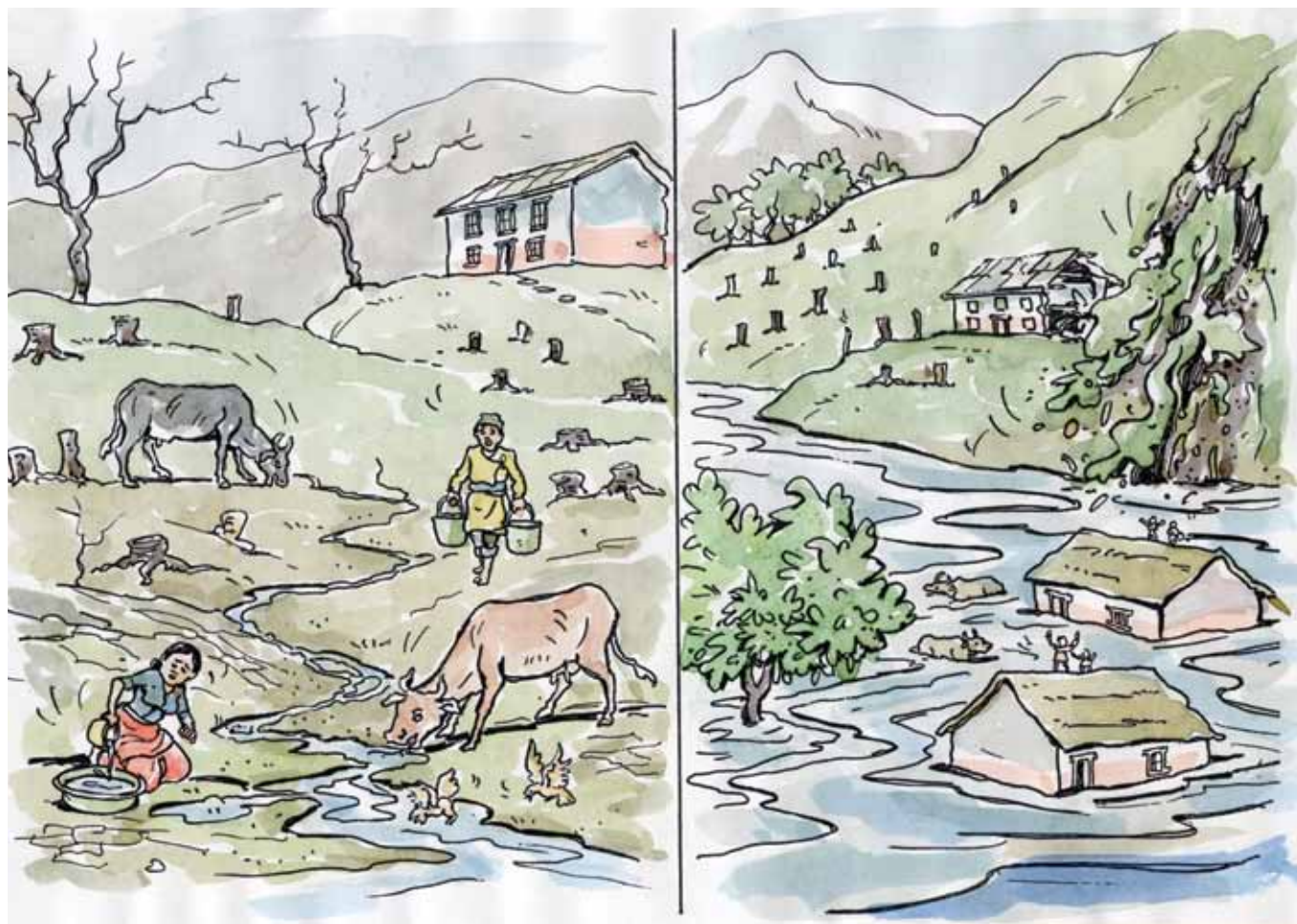
Changes and Challenges in Our Landscape	2
Climate Change and Its Impacts	3
Harmful Practices	7
Working Together to Manage Problems	18
Using Resources Wisely to Solve Environmental Problems and Support Livelihoods	19
Working and Learning Together is Good for Our Environment and for Us	30
Notes for Facilitators	42
About this Publication	43
About the Kailash Sacred Landscape Conservation Initiative	43
Definitions	46
References	49

Changes and Challenges in Our Landscape

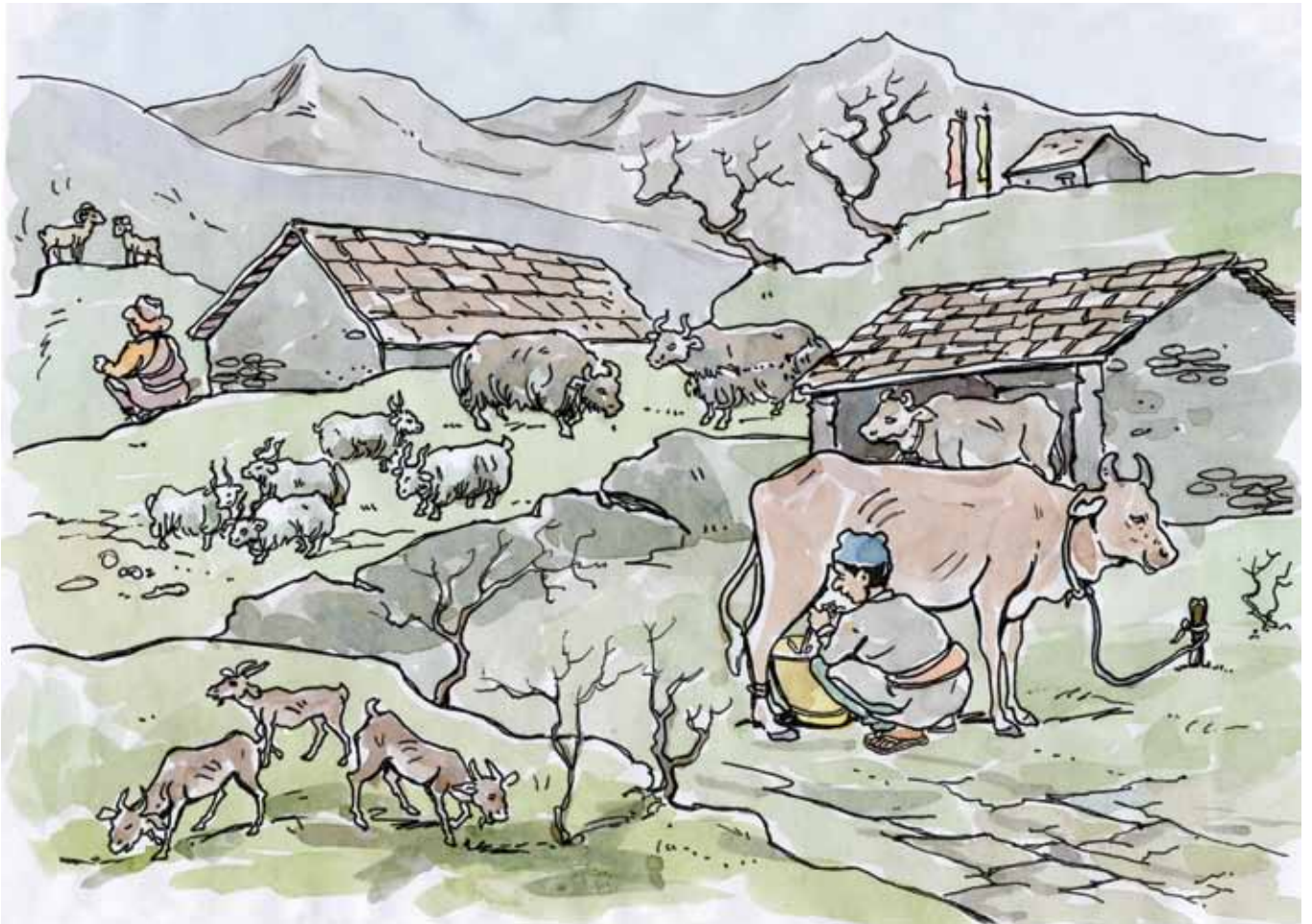
Climate Change and Its Impacts



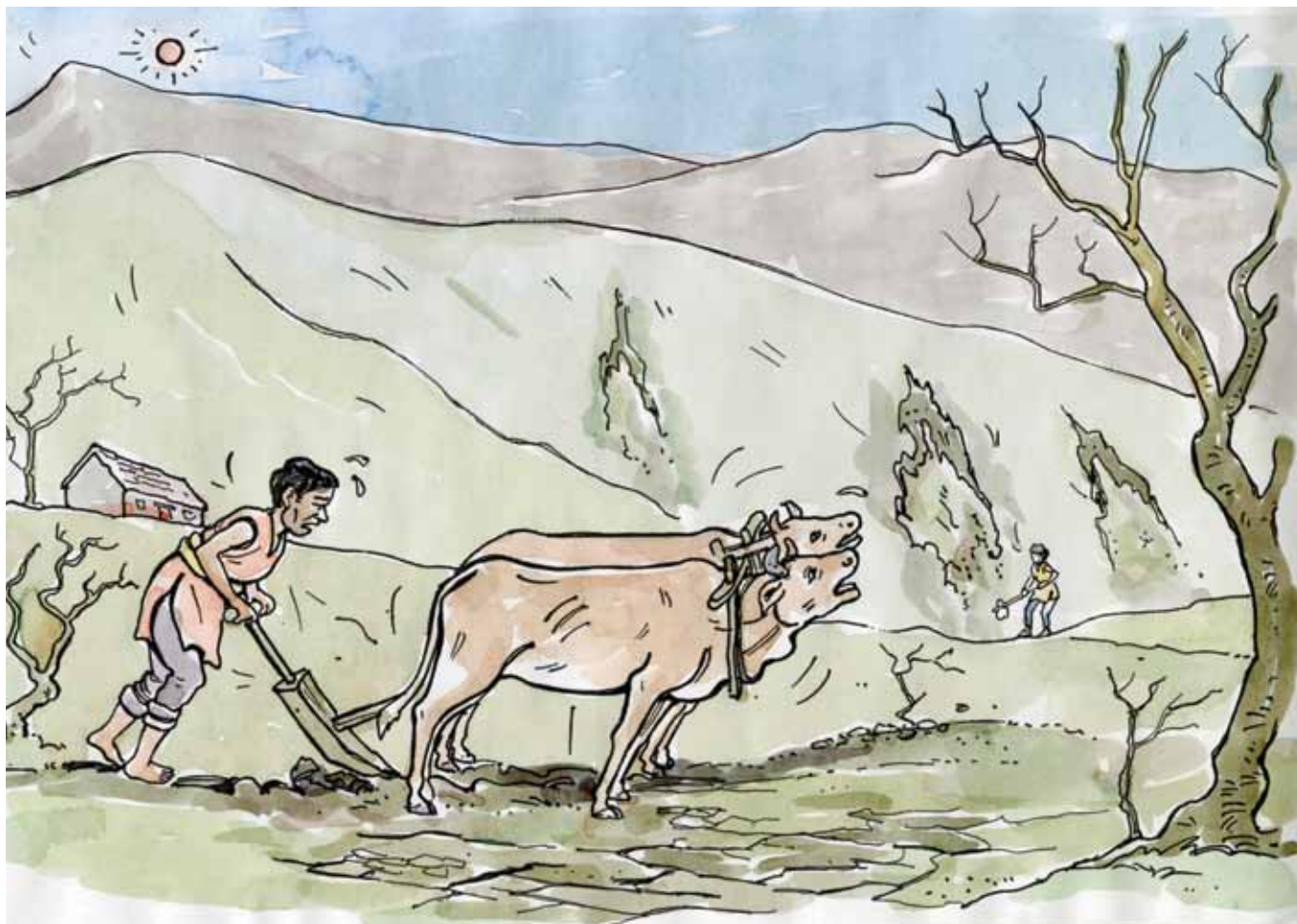
Greenhouse gases in the air cause unexpected weather changes and higher temperatures, leading to melting of ice and glaciers.



Drought makes our crops, forests, and animals produce less, and heavy rains and melting glaciers cause more frequent floods.



Many parts of the landscape are becoming dryer, and are providing less feed for livestock than they used to. As a result, livestock production is decreasing.



Drought makes agricultural land hard to cultivate, and draught animals suffer more during ploughing.

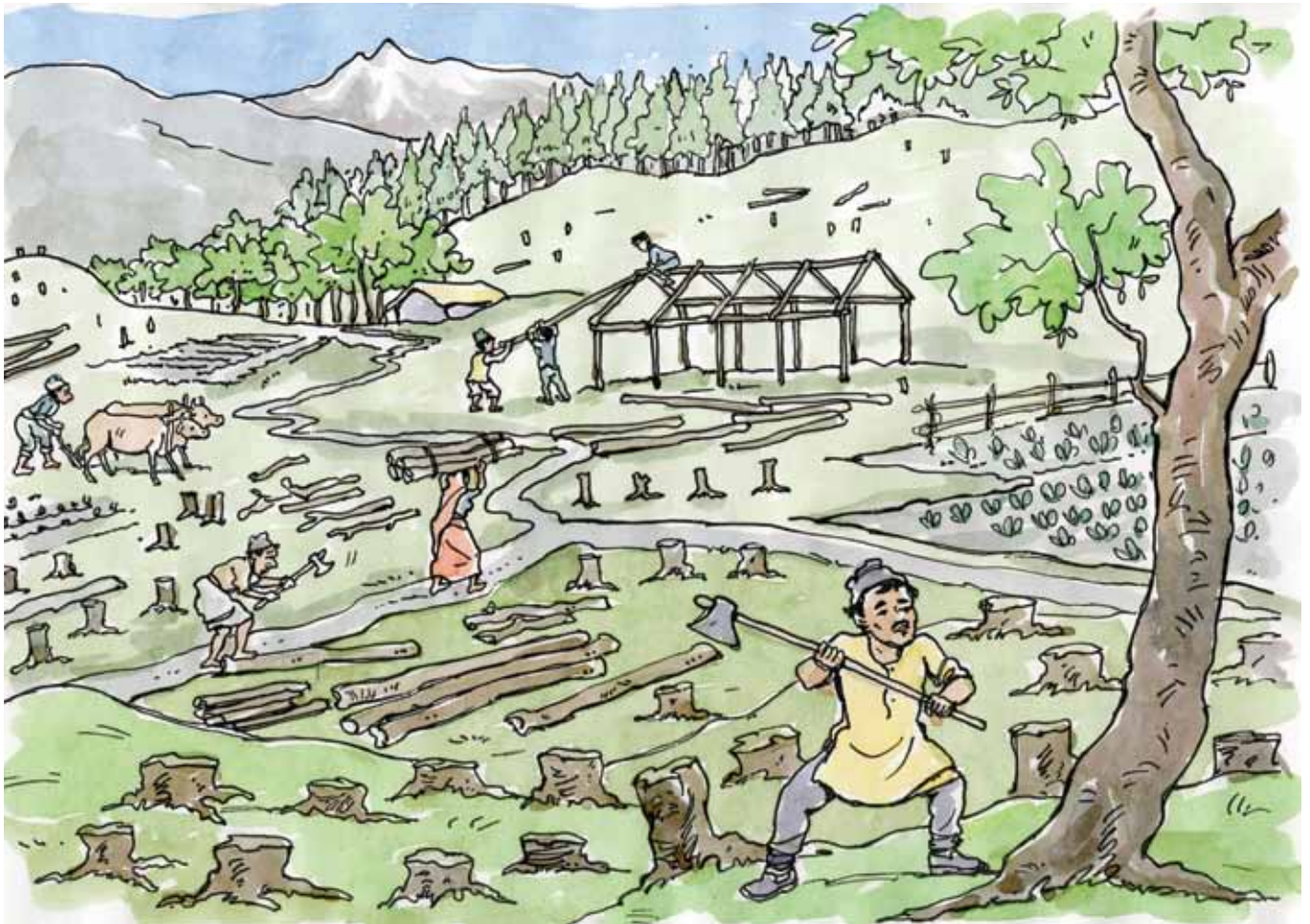
Harmful Practices



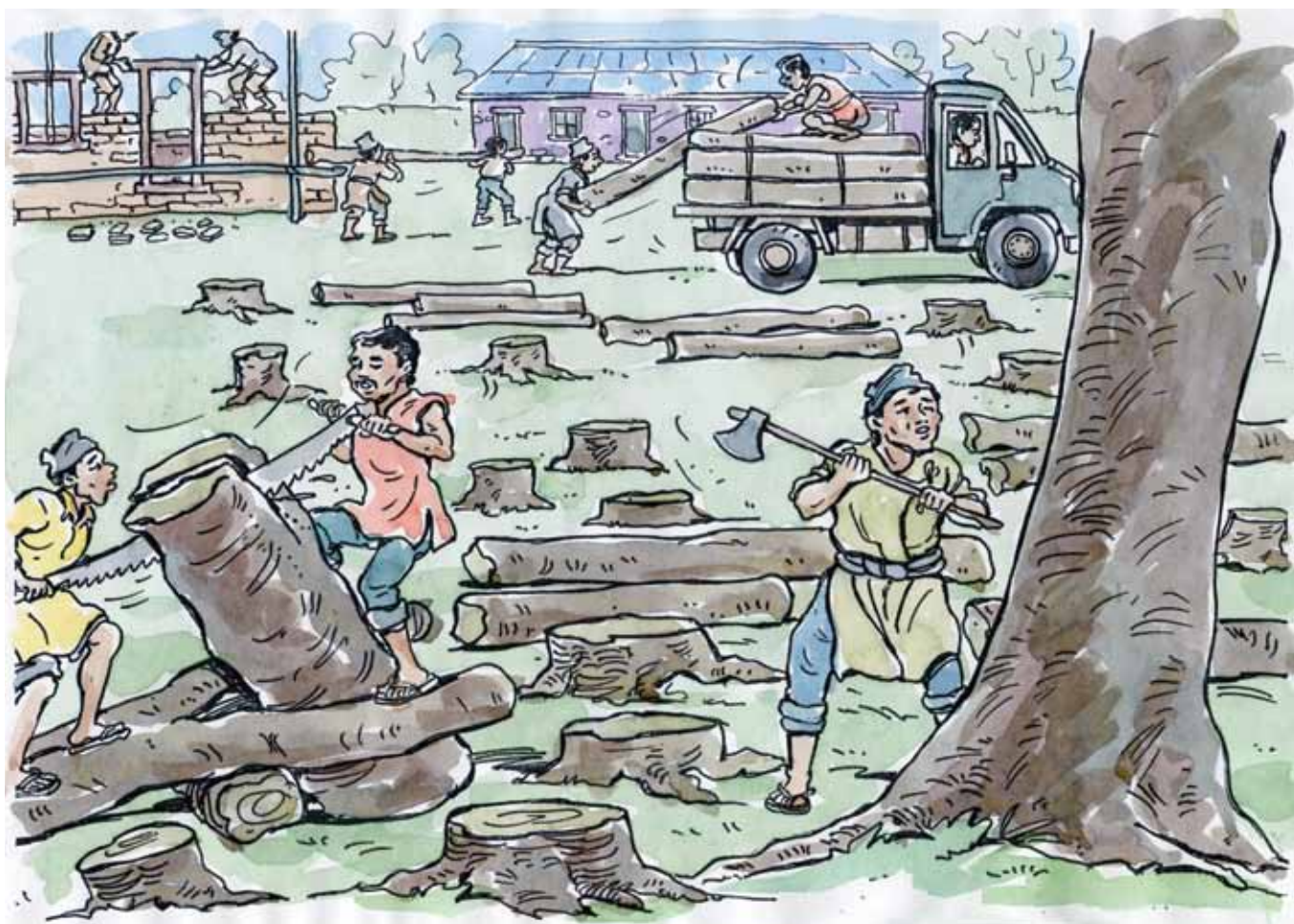
Traditional farming was organic. But today many farmers are using high doses of chemical fertilizers and pesticides. These are harmful for the soil, water, and environment.



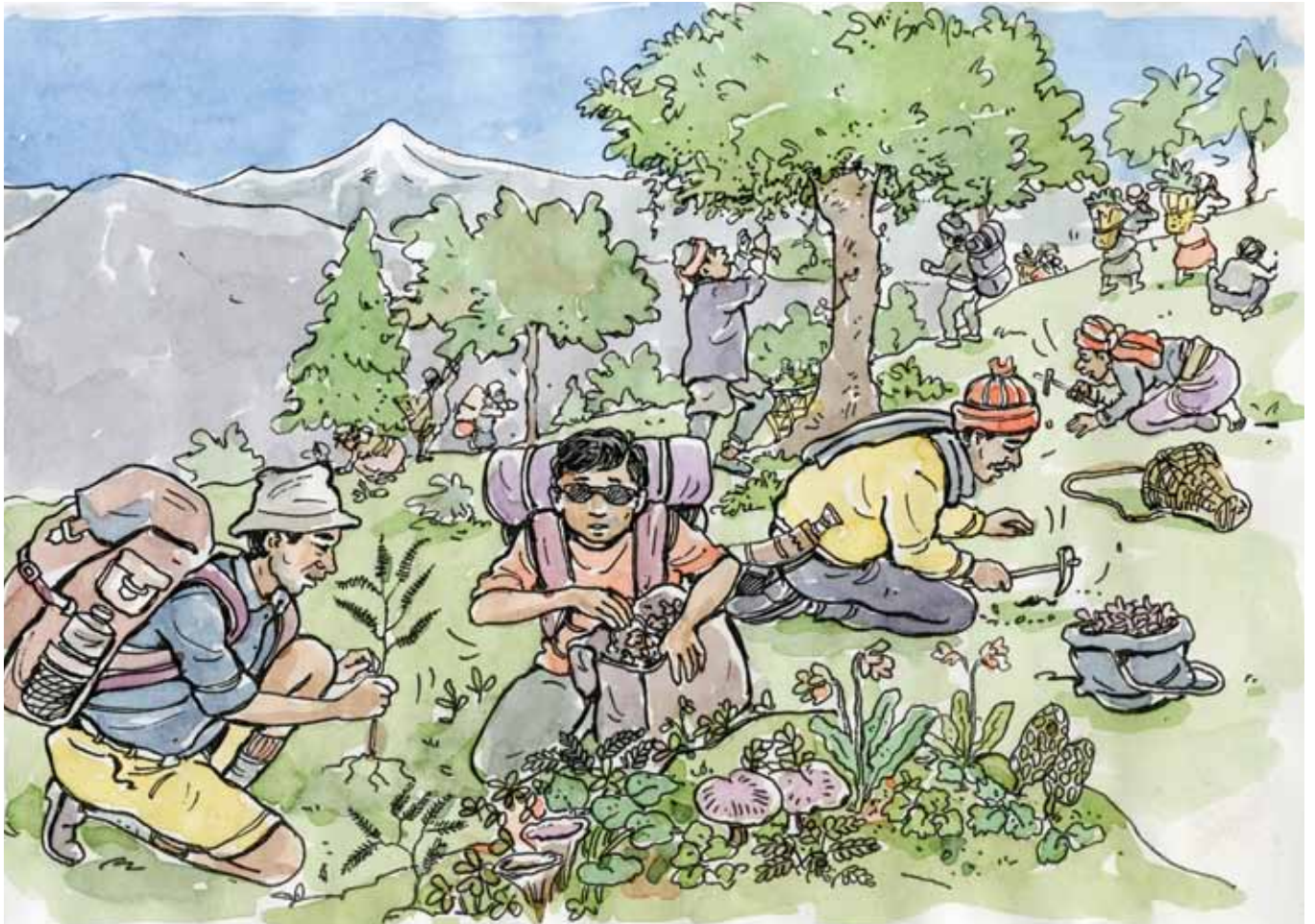
When hospitals and factories dump their waste into rivers and water bodies, it makes the water unfit for drinking and other uses, even for irrigation in agriculture.



Cutting too many trees for personal gain will damage the environment beyond recovery.



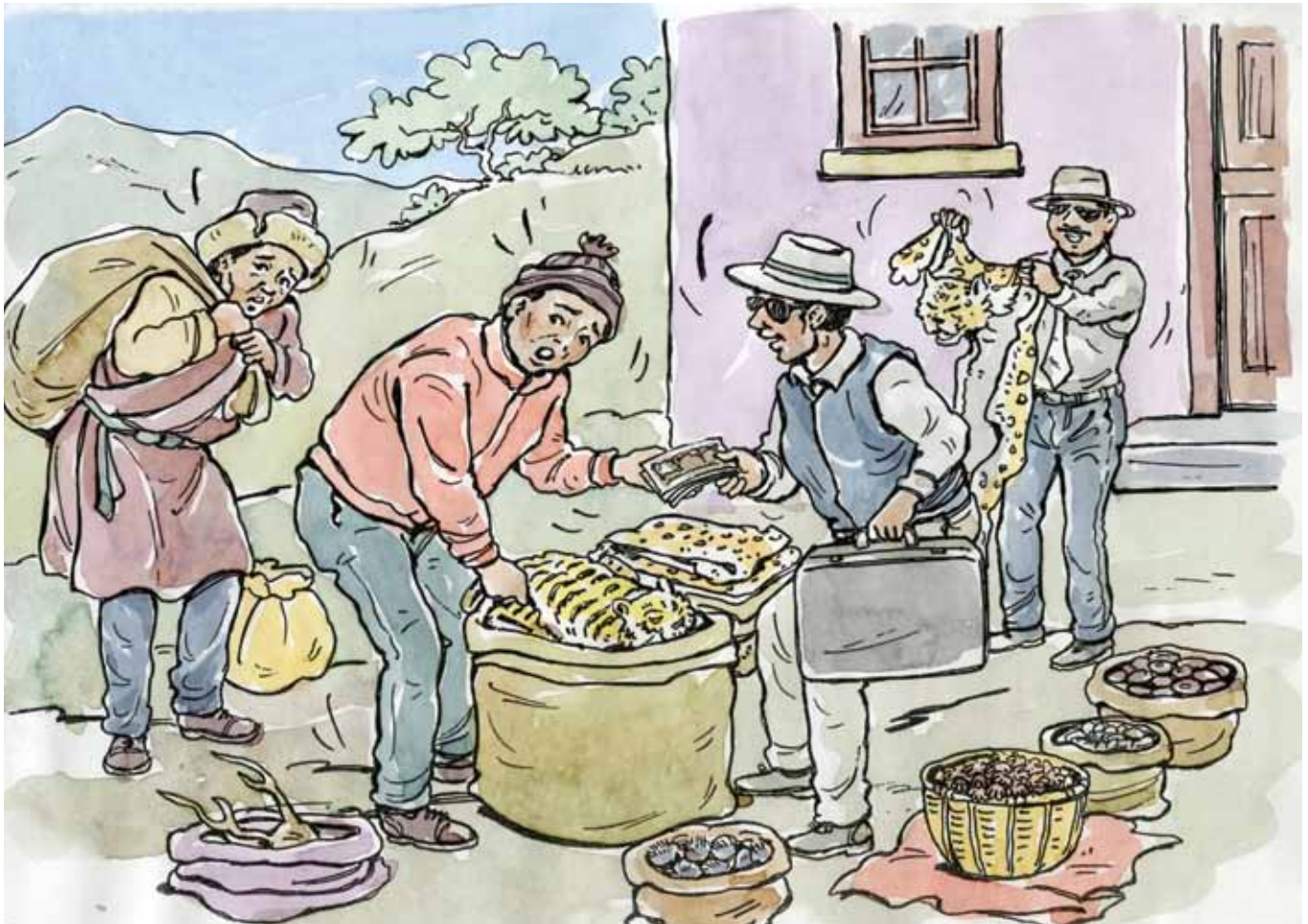
Illegal timber trade not only damages the environment, but also robs the livelihoods away from people who depend on forest products – and from their children.



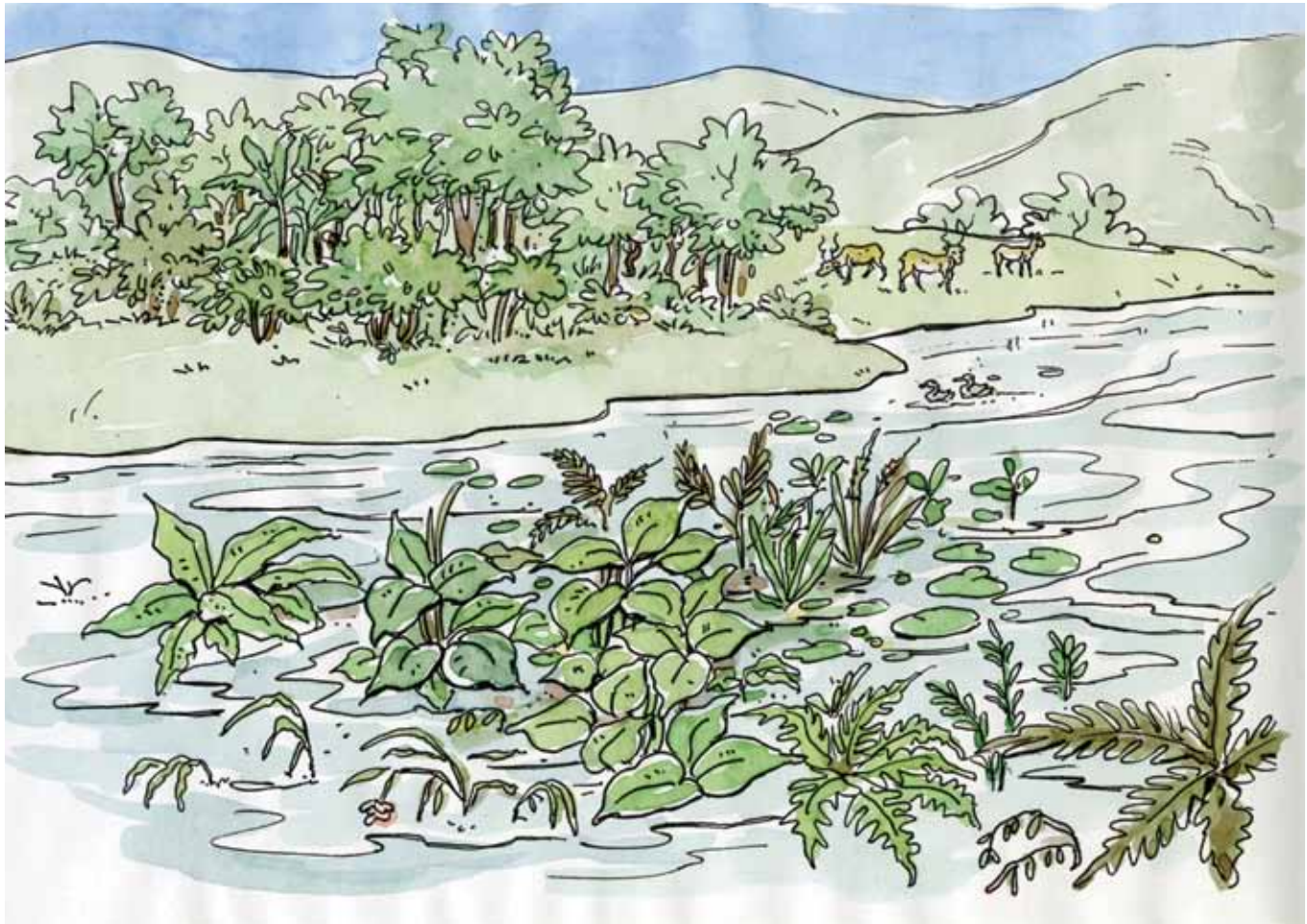
If we harvest too many herbs, medicinal plants, and other products from the forest, they cannot grow back – the biodiversity will be lost and the ecosystem will be degraded. We will not be able to make a living from these resources any more if we do not manage them carefully.



Illegal trade and smuggling of valuable medicinal plants across borders is a big cause of biodiversity loss in the landscape.



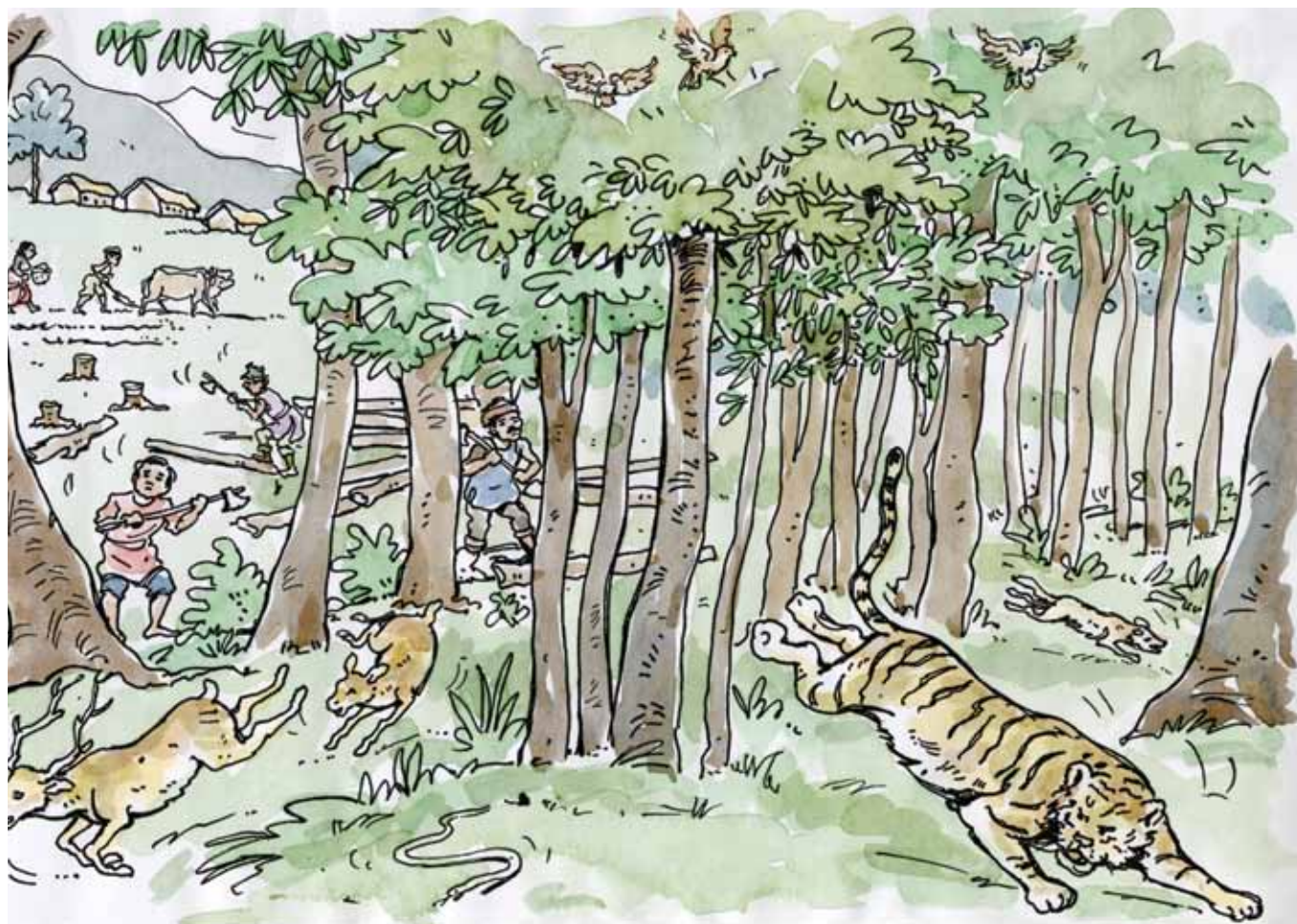
Illegal trade of wildlife parts is a serious crime. It can lead to local extinction of many species. We have to find other ways to earn income to save the species that are threatened. Developing wildlife and heritage tourism is one way.



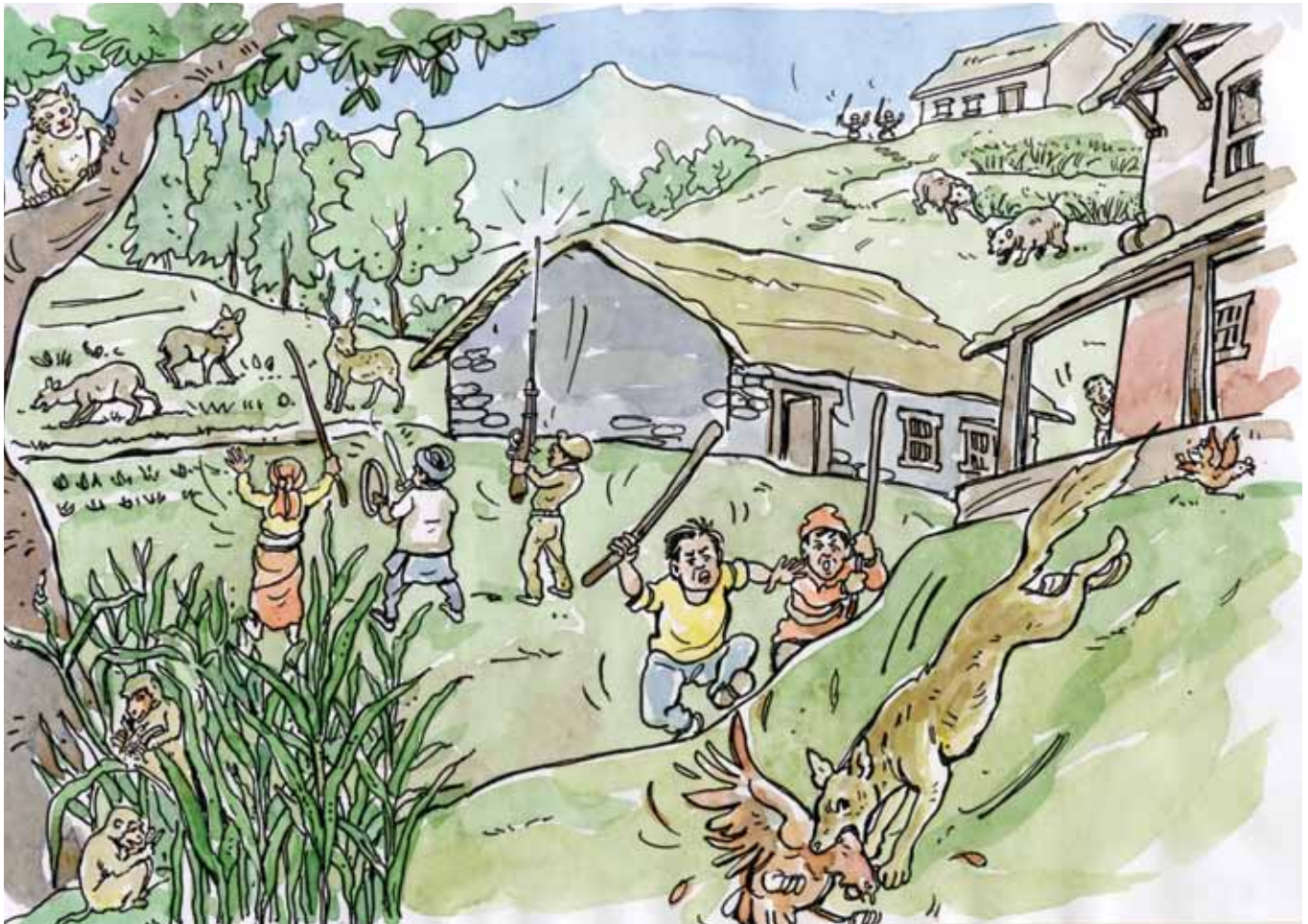
Bringing in non-native plants from outside – called ‘invasive plants’ – is a big threat to local biodiversity. They can overwhelm and eventually replace important local plant species, creating a different habitat that might not be suitable for other wild plants and animals that live there now.



Forest fires can destroy the forests and wildlife habitat. Sometimes fire is caused naturally by lightning, but most often it is caused by people: by intentional burning and by careless activities like leaving campfires unattended or throwing away burning cigarettes.



When forests are cleared for housing and agriculture, wild animals lose their homes and their food. This is a reason for increased conflict between wildlife and people.



When we encroach on wild animals' habitats and source of food, they are likely to cause problems in our settlements. They may prey on our domestic animals and birds, and raid our crops and fruits. But killing them is not a good solution. Working with the wildlife department, we should find a way to restrict them to a part of the landscape that resembles their natural habitat, where they can get sufficient food.

Working Together
to Manage Problems

Using Resources Wisely to Solve Environmental Problems and Support Livelihoods



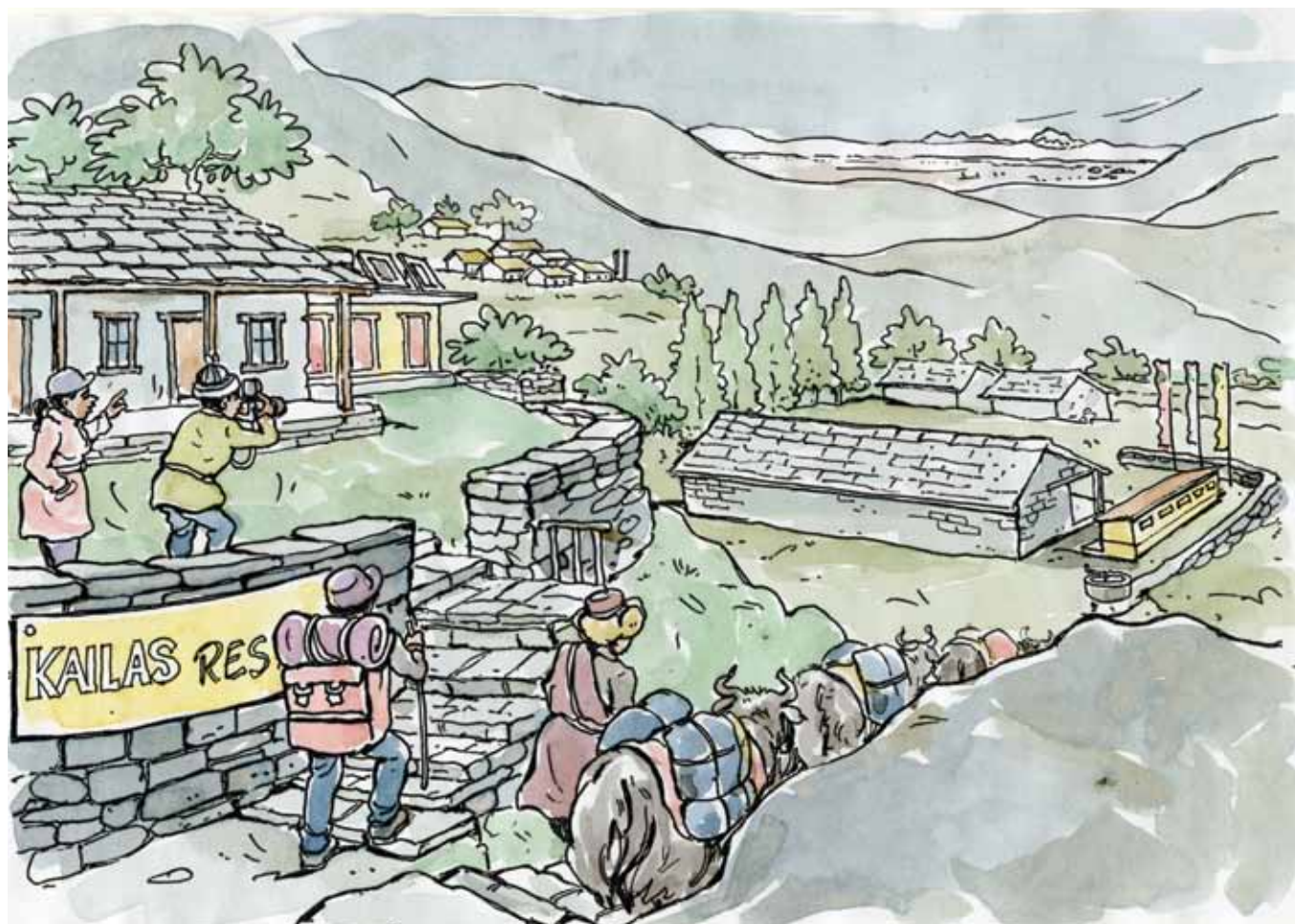
We can reduce problems of human-wildlife conflict by planning together how we use our land and by making changes in our cropping systems. Crop and livestock insurance can help farmers recover from losses.



Many people from villages move to towns and cities with dreams of better employment, education, and other basic amenities. We can use our resources wisely to make a living so that people can be happy in their own homes. This can help keep traditional knowledge and culture intact.



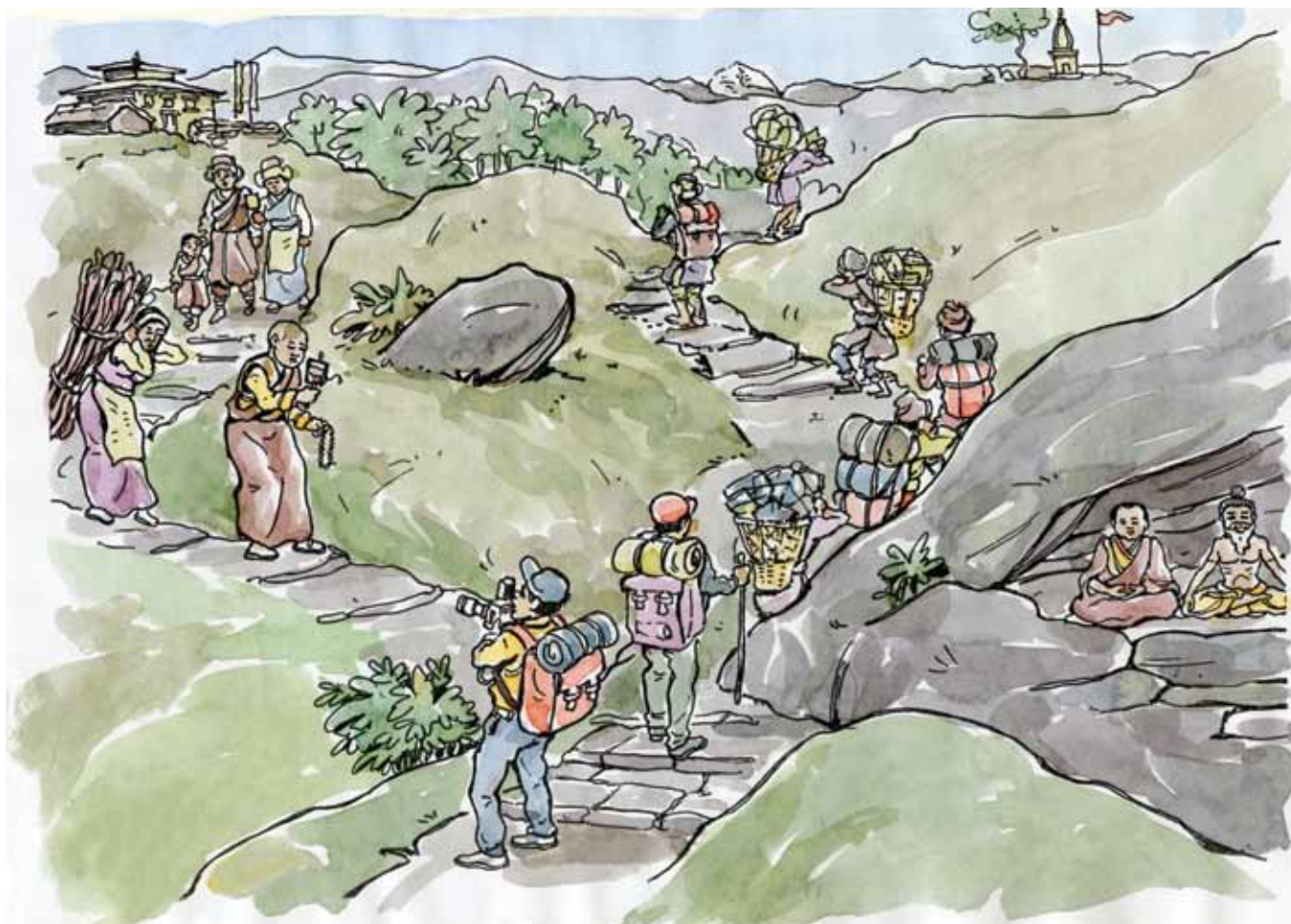
Small factories that process and package local agricultural products and herbal medicines can provide new ways to earn income in villages so that people do not have to leave their homes to look for work.



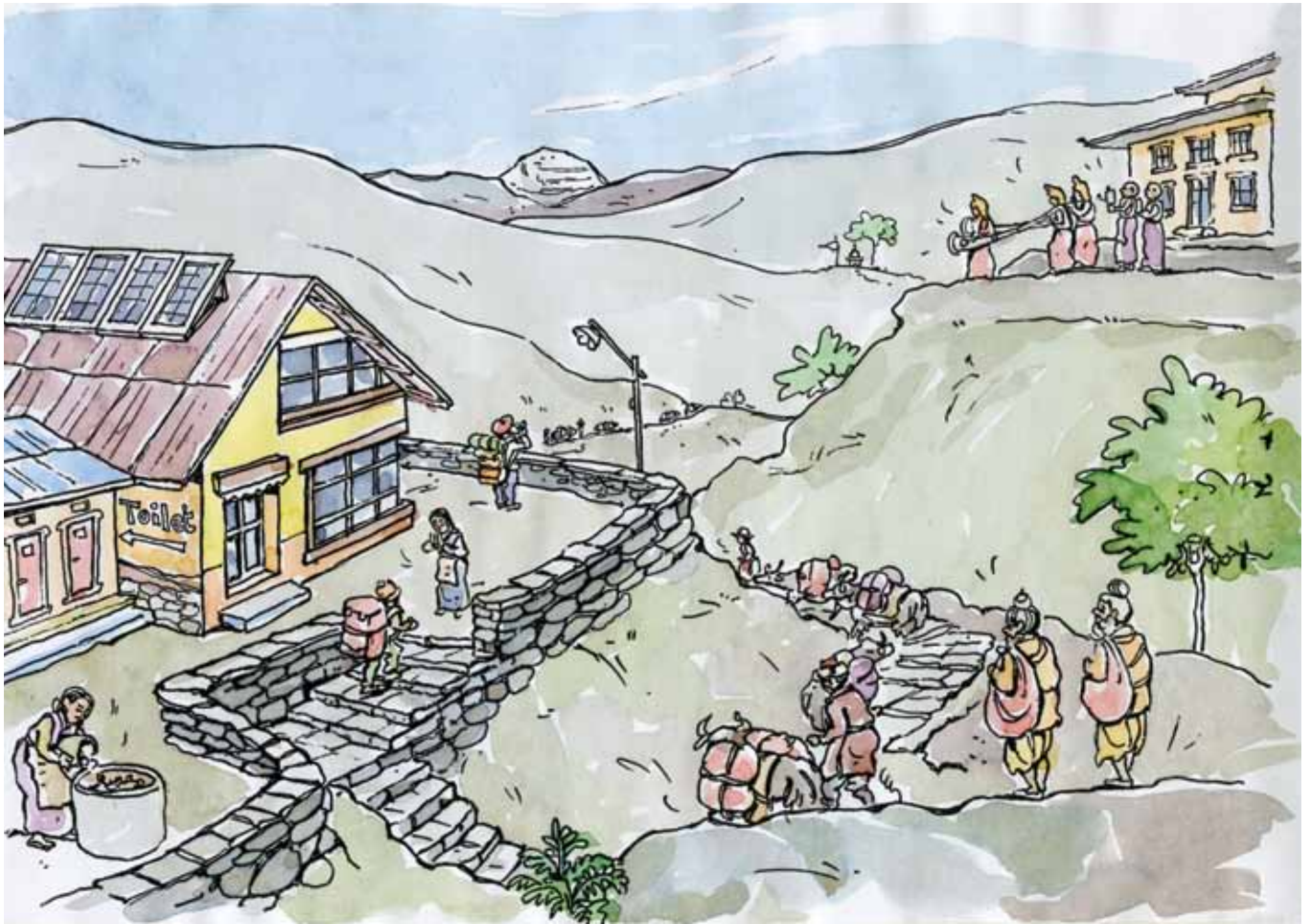
Community-based tourism – where communities promote and manage heritage trails and tourism sites – supports community livelihoods.



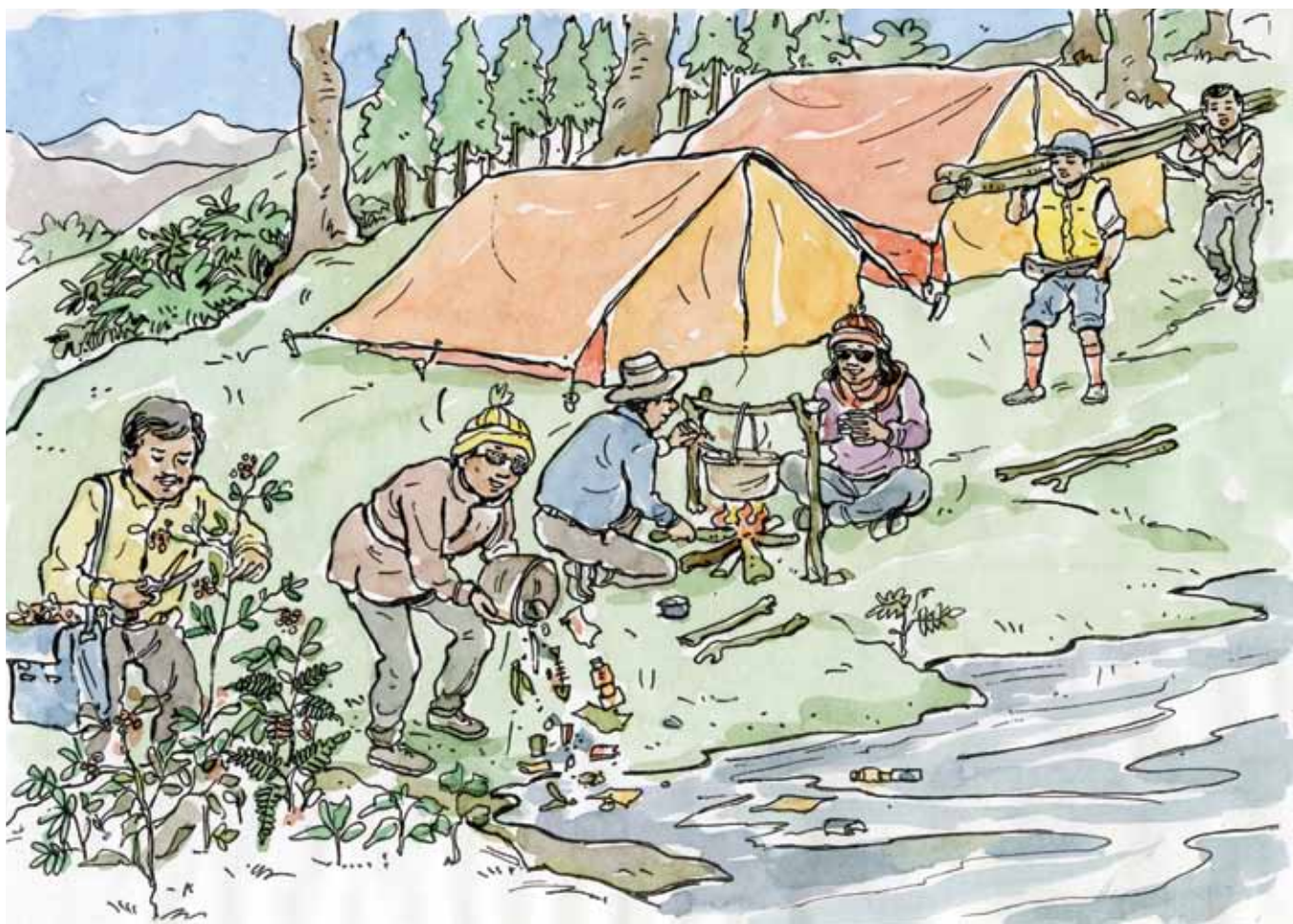
Local products and handicrafts are attractive for tourists and can generate income for us so that we don't need to migrate far away in search of a living.



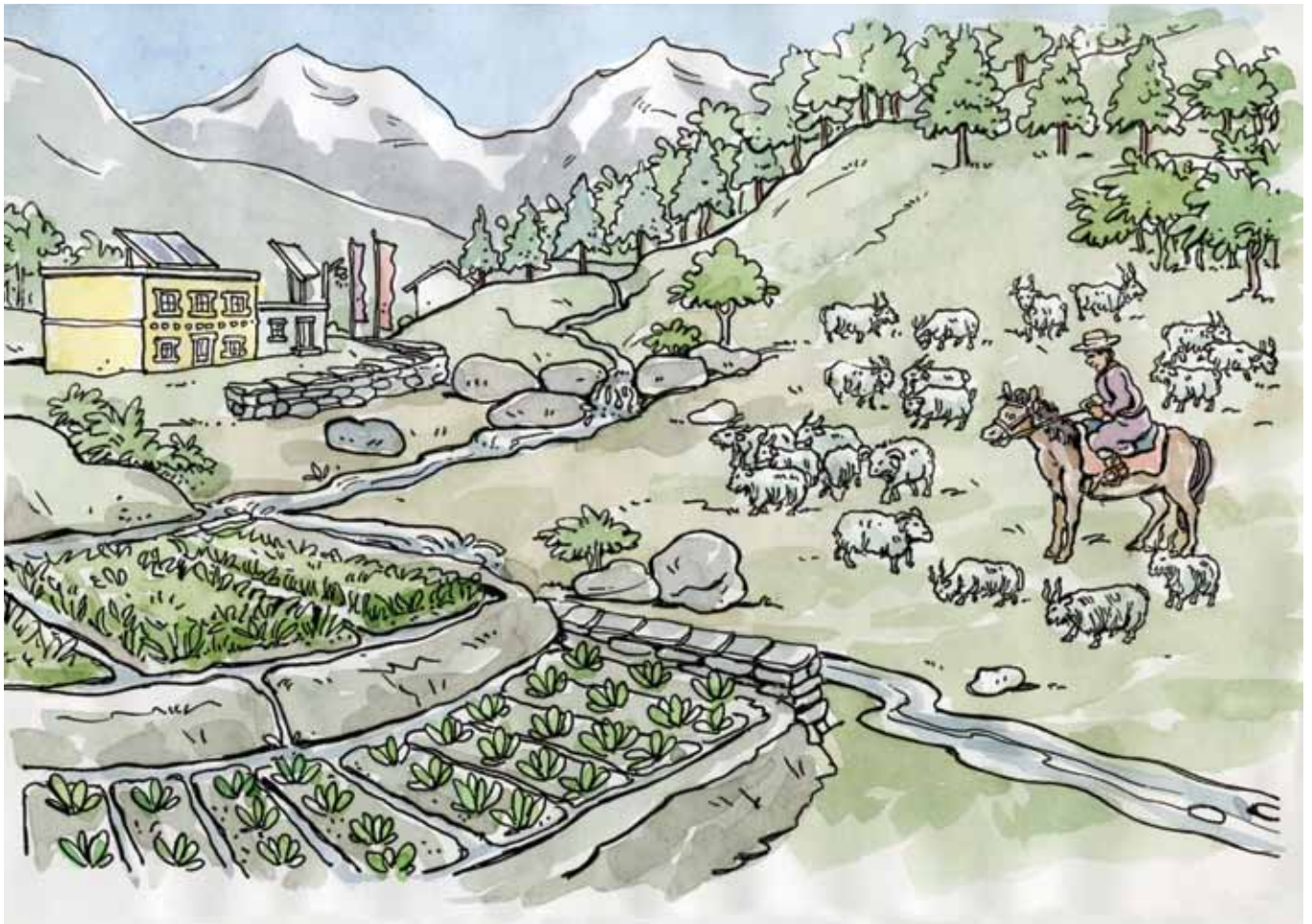
Our traditional cultures and values can be an asset for promoting heritage tourism.



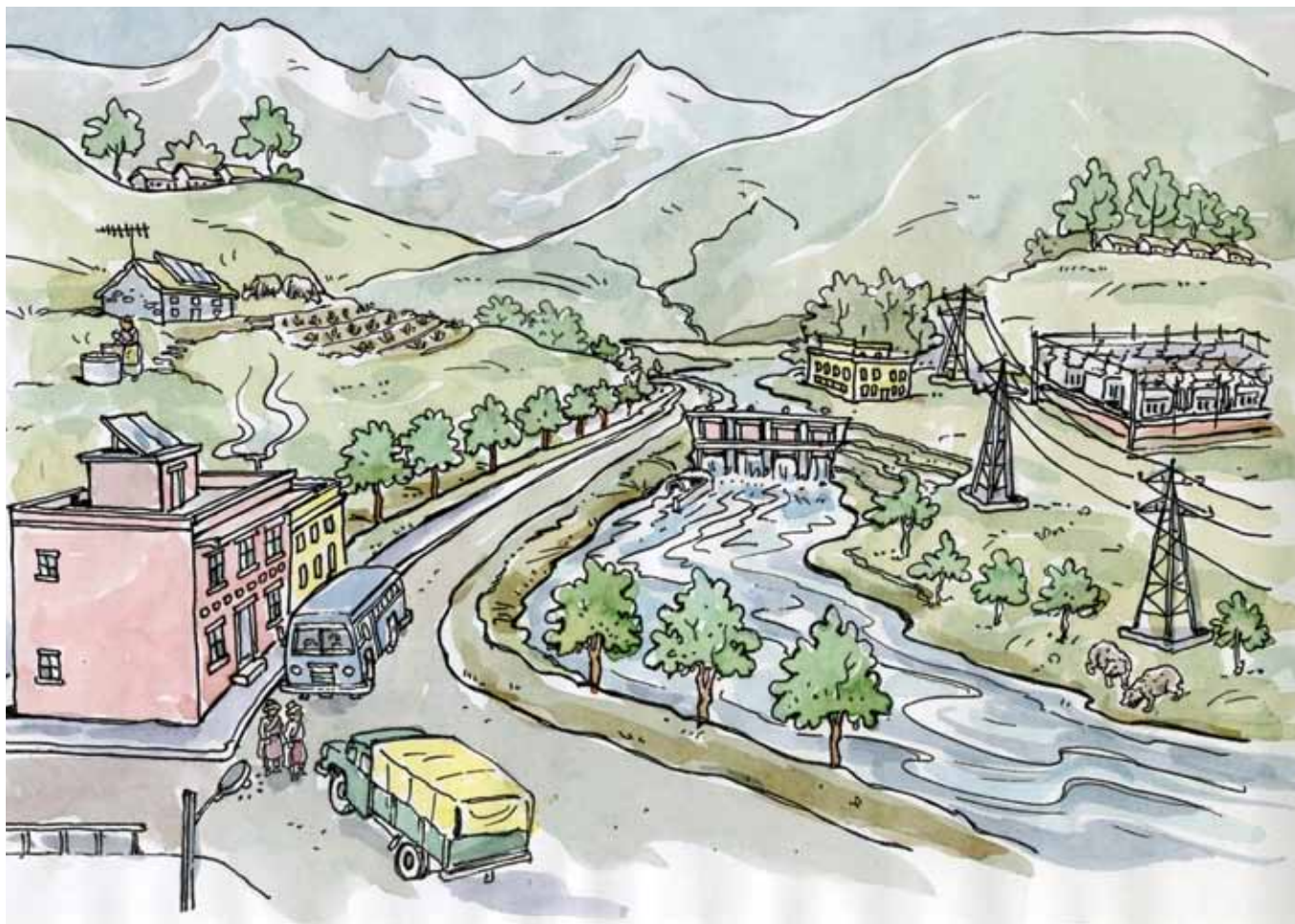
If we take good care of trails, temples, and monasteries, these cultural sites will attract more tourists to the area.



Tourism can be a good source of income, but if it is not managed properly it can lead to pollution and degradation of natural areas.



Use of environmentally friendly forms of energy and good management of water will help save our natural resources, prevent climate change, and increase production.

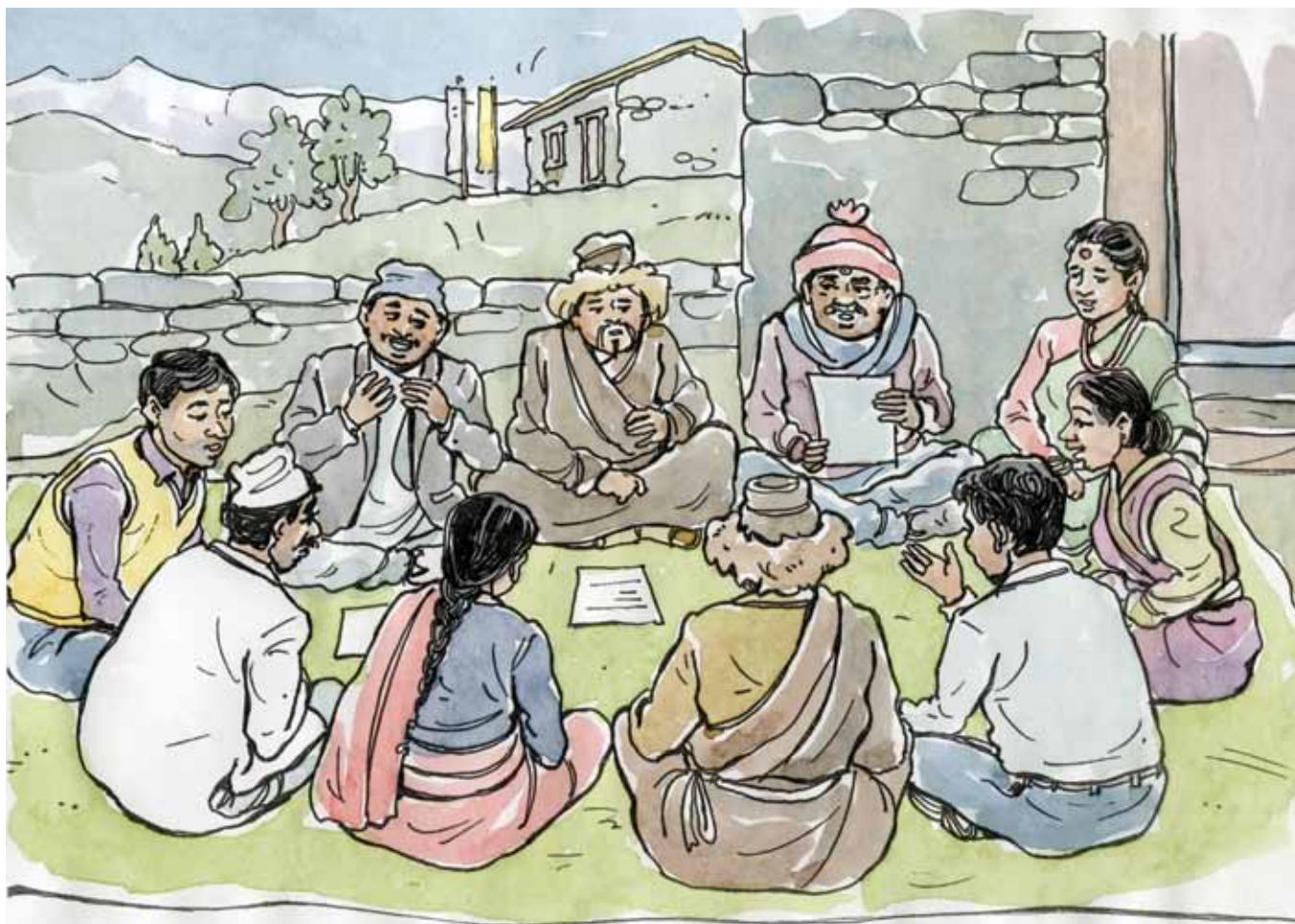


Using river water, solar power, biogas, and wind in place of fuelwood to generate clean energy for cooking and lighting will help to reduce deforestation and save the environment. What's more, if rural women and girls don't have to spend long hours collecting fuelwood, they will have time to do other things to improve their quality of life – like attend to their health and education.



We need to work together and manage our pastures and forests by managing our livestock. We also need to remove invasive species so that native fodder species can flourish.

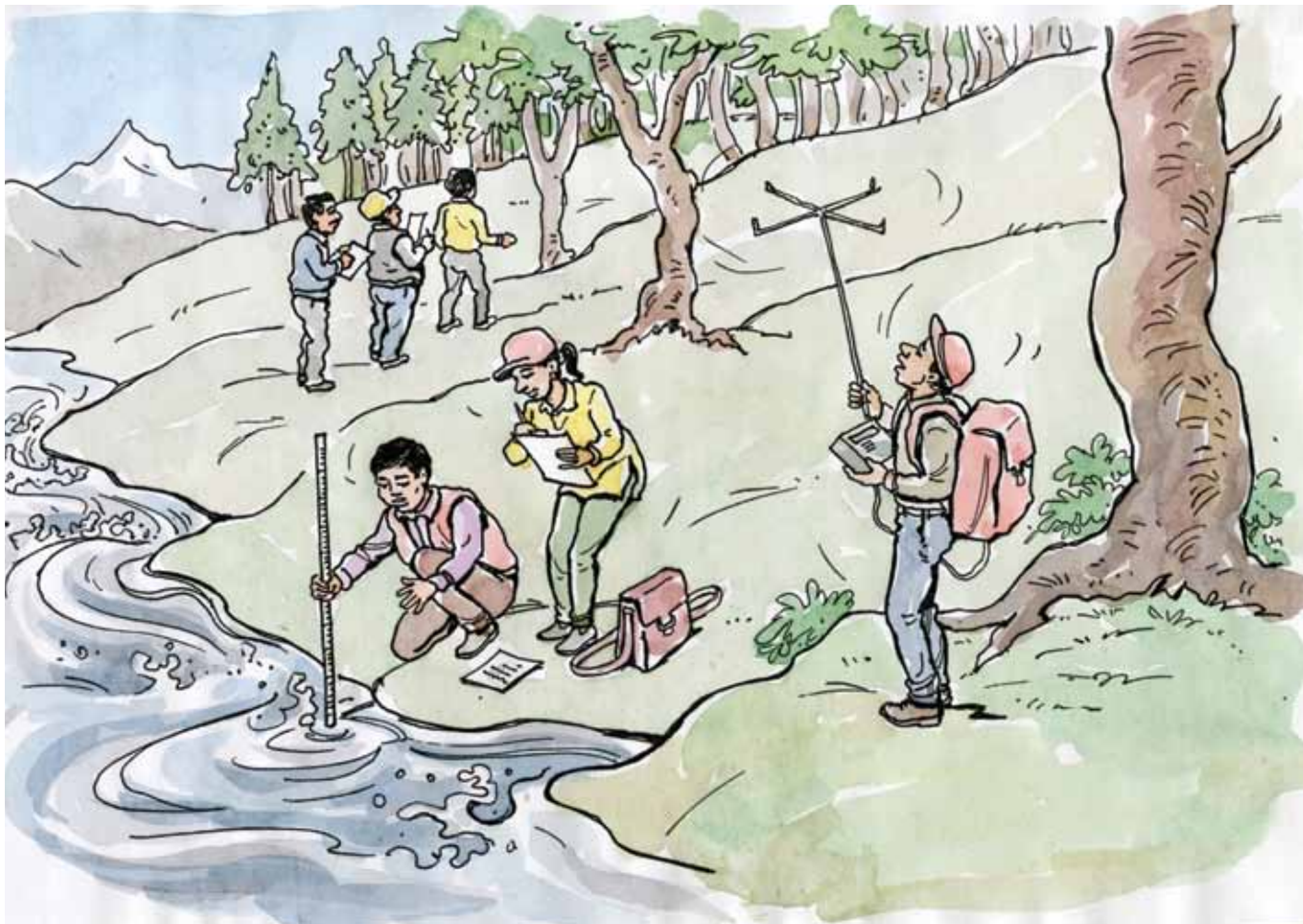
Working and Learning Together is Good for Our Environment and for Us



Community members should discuss problems in the villages together to come up with solutions. Communication will help to resolve issues across boundaries.



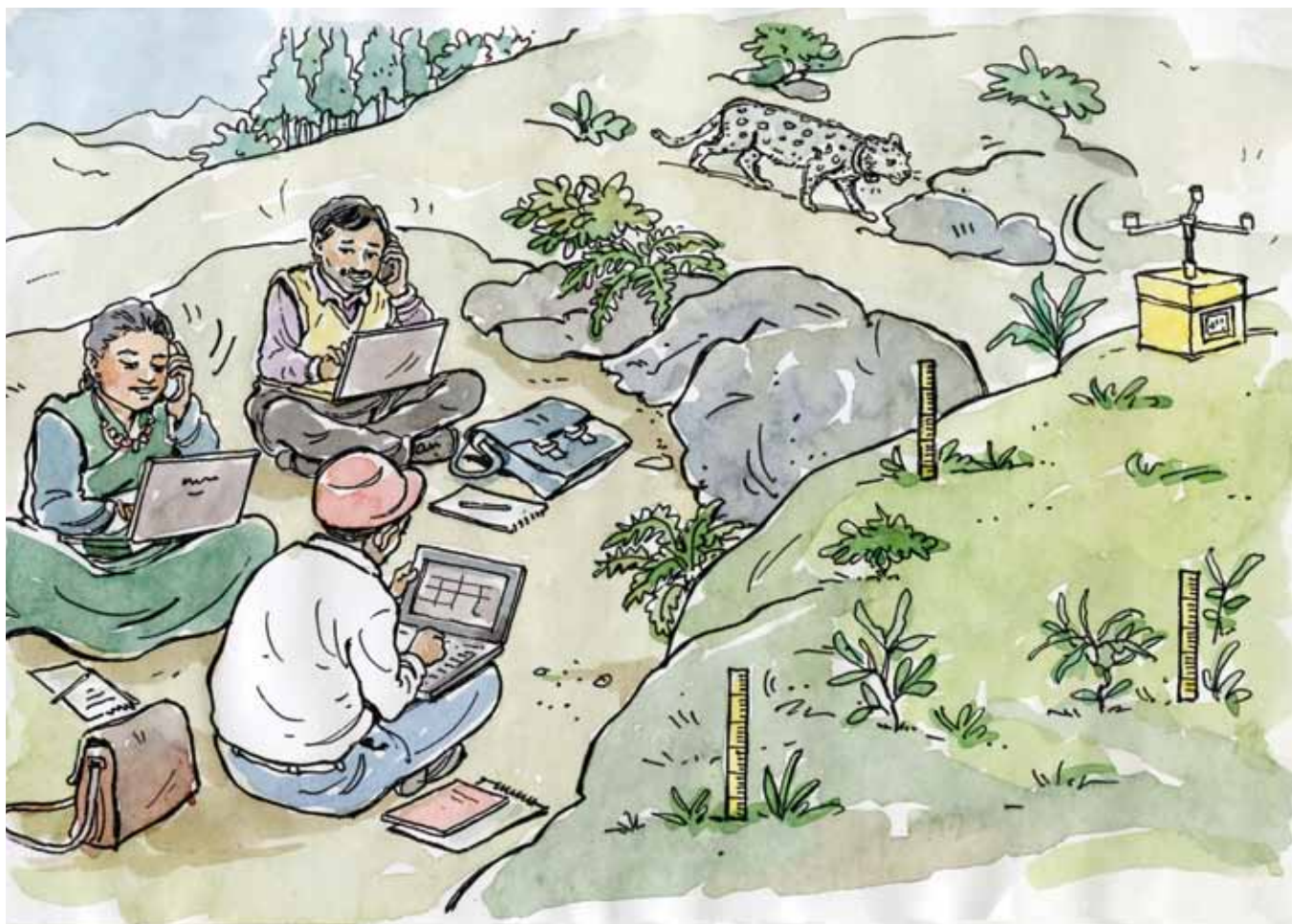
With information and knowledge, communities can work together to protect and manage biodiversity and use natural resources in a sustainable way.



Regular environmental monitoring is important to observe and understand the changes in our environment and to manage it better.



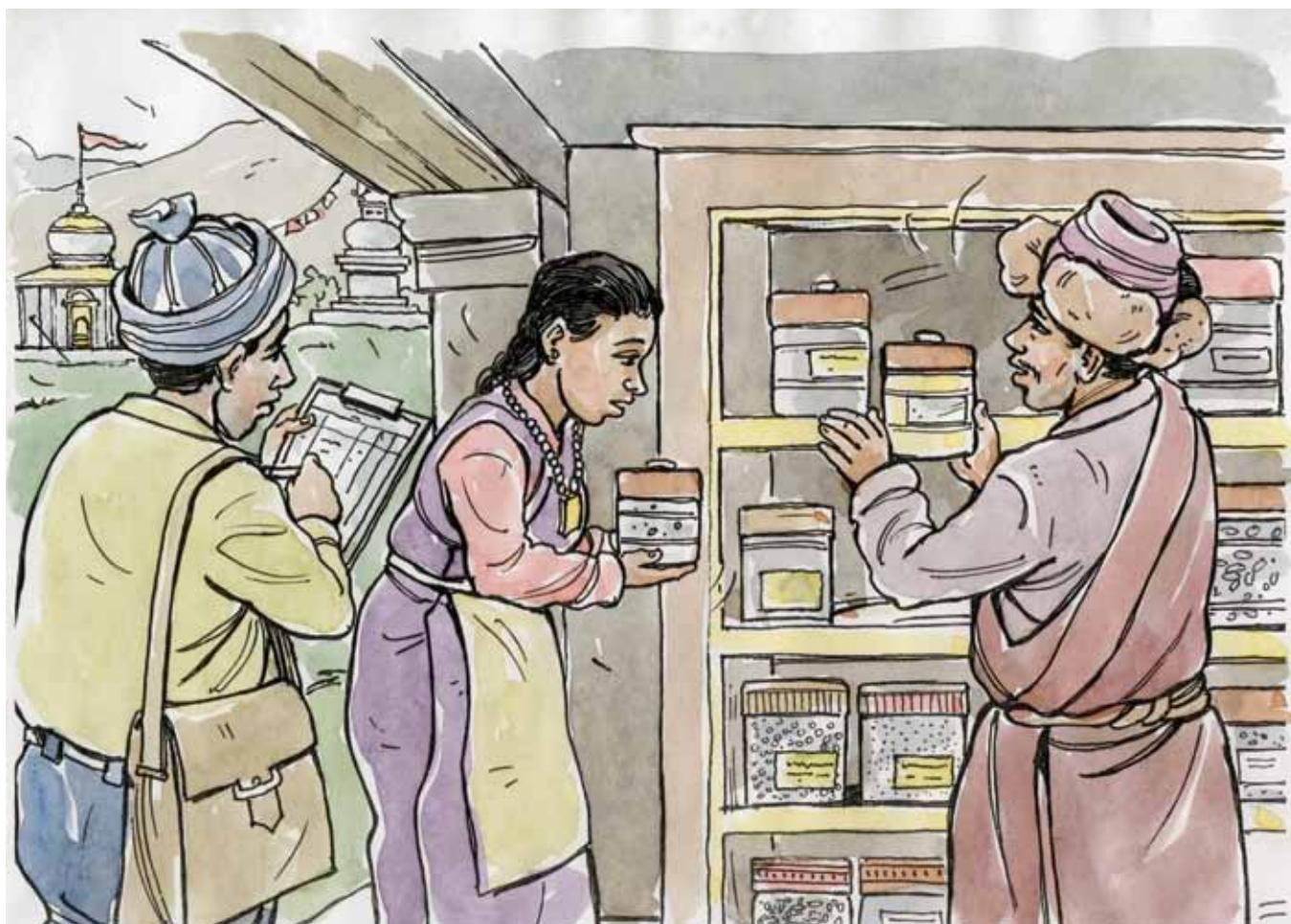
Working together with research institutes and governments, our community can monitor and conserve our natural resources and environmental knowledge.



Once communities have learned to collect and share data, they can prepare their own participatory resource management plans and get technical and financial help from the government to implement them.



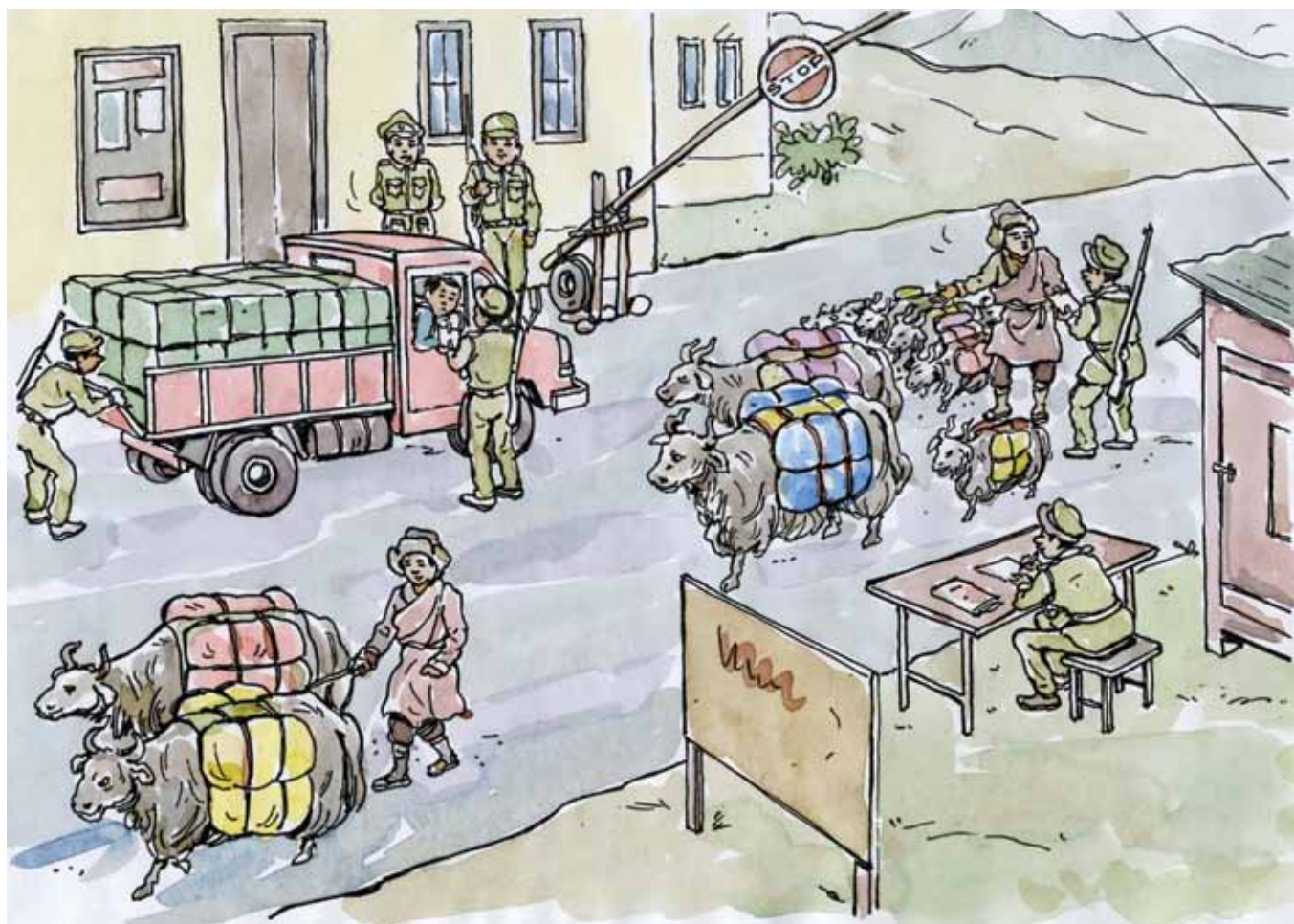
Documenting our knowledge about traditional uses of plants, animals, and other resources can help maintain this heritage for the future.



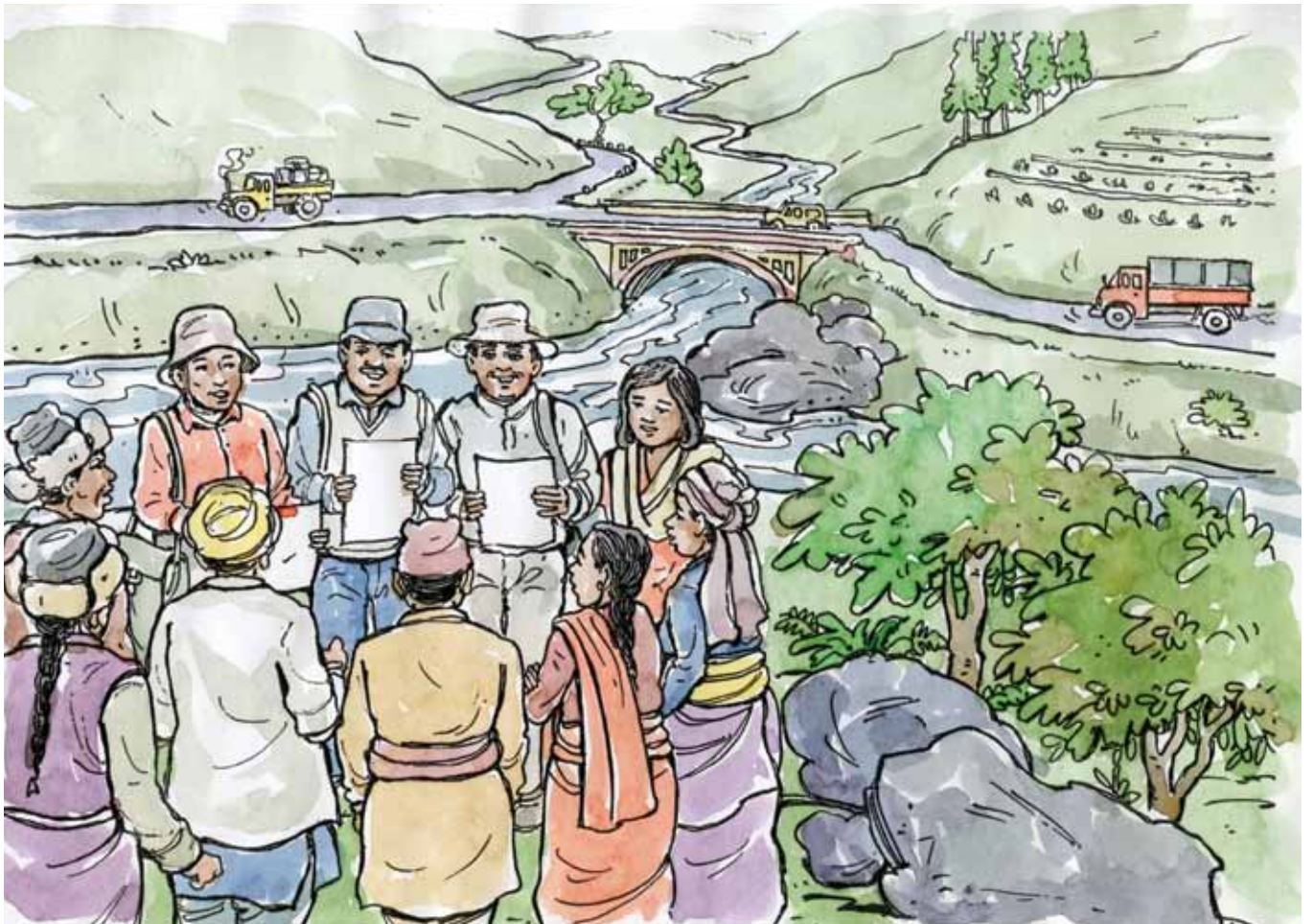
Documentation of our traditional knowledge on agriculture, medicinal plants, and other resources will help governments make better policies and plans, so that we get our fair share of the benefits from them.



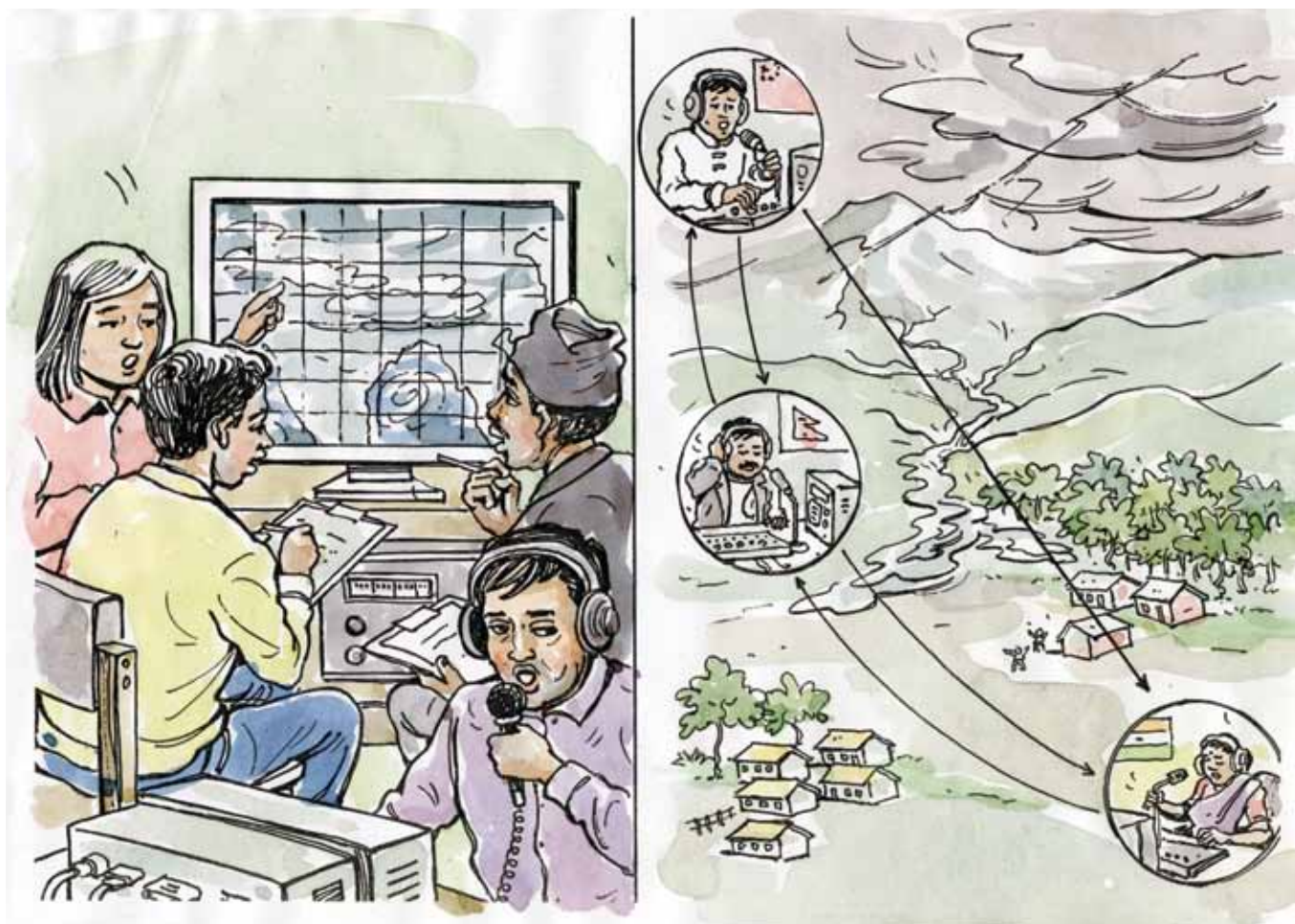
Saving the seeds of local crop varieties and keeping records about them is extremely important so that we will still have them many generations into the future.



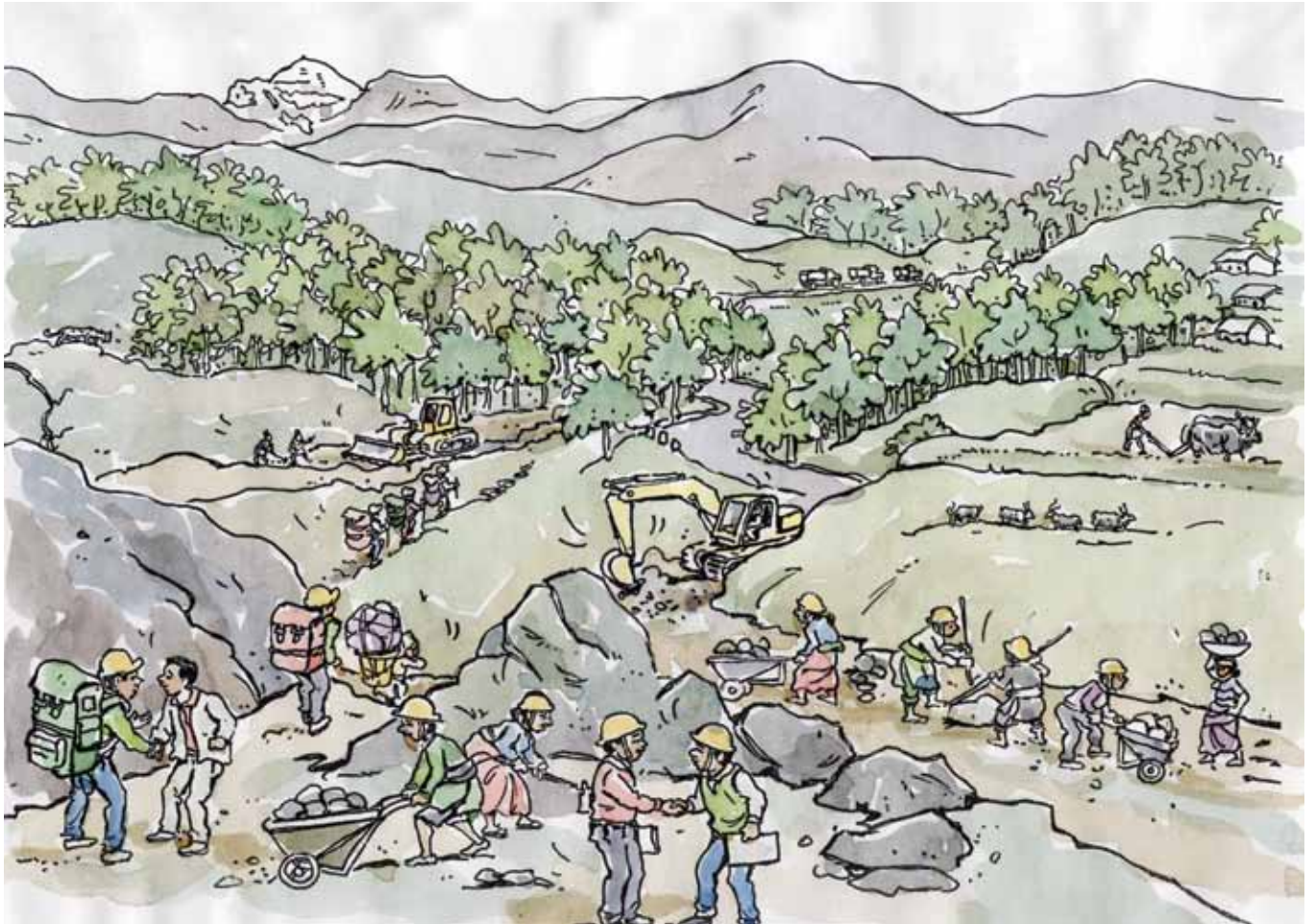
Abiding by rules and regulations helps promote sustainable use of resources.



In a landscape that crosses national borders, communities from different countries can learn together – communicating to understand problems and to exchange knowledge, ideas, and good practices. Together we can create a better environment and better lives.



To prevent flood disasters, governments and communities need to share important information in a timely way. Passing flood-related information from higher to lower regions in advance can save lives.



Communities, local governments, and everyone involved need to work together to manage and save the forests, water, and environment.

Notes for Facilitators

About this Publication

This awareness raising material is designed to help rural mountain communities better understand the various changes and opportunities in their landscape. It was created within the Kailash Sacred Landscape Conservation Initiative (KSLCI) and intended, in particular, for communities living within the Kailash Sacred Landscape, with a particular emphasis on working across national borders. However, its messages will be of use to mountain communities in a much wider context. The intended beneficiaries include community organizations, schools (teachers and students), local healers, local leaders, and other community-based organizations.

The material has been prepared with an assumption that communities within the landscape are highly vulnerable to the changes occurring in the landscape due to climatic and other factors (including demographic changes and migration), and that they need to understand the complexities of their respective ecosystems in order to better value, utilize, and conserve the environment while benefitting from it.

This module has the following objectives:

- to improve community awareness and understanding of issues relating to climate change, ecosystem management, transboundary resource management and conservation, current trends within the landscape, and ways of reducing vulnerability and adapting to changing conditions; and
- to help communities understand and appreciate the significance of biodiversity, agricultural diversity, and the sustainable use of natural resources and to suggest different approaches to their conservation and sustainable use.

The ultimate objective is to bring about changes in behaviour leading to conservation of the landscape and enhanced livelihoods.

About the Kailash Sacred Landscape Conservation Initiative

The Kailash Sacred Landscape Conservation Initiative (KSLCI) seeks to conserve the unique, diverse, and fragile Kailash Sacred Landscape through the application of transboundary ecosystem management and enhanced regional cooperation. It is the first cooperation of its kind among the Governments of China, India, and Nepal. This initiative aims to foster strong cooperation and scientific collaboration among research institutions, line departments of respective governments, civil society, and international conservation agencies for knowledge generation and capacity building for community-based conservation and sustainable development. KSLCI is a collaboration between partner institutions in China, India, and Nepal, with facilitation and support from the International Centre for Integrated Mountain Development (ICIMOD), the United Nations Environment Programme (UNEP), and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

The Kailash Sacred Landscape spreads across a vast region that includes an area of the remote southwestern part of the Tibetan Autonomous Region in China that is the source of four of Asia's most important rivers – the Bhramaputra, Indus, Karnali, and Sutlej – and encompasses contiguous areas of northwestern Nepal and India. These areas have historically been linked and are ecologically and culturally interconnected. At the heart of the landscape lies the sacred Mount Kailash, revered by millions of people in Asia and throughout the world. The target area comprises a wide range of biophysical and sociocultural conditions. It is considered among the most sacred landscapes in the world, attracting tens of thousands of pilgrims every year. It is also among the world's most biologically rich, diverse, and fragile environments. The region and its people are highly vulnerable to climate change and environmental degradation, as well as threats associated with ongoing globalization processes and accelerating development. As a result, the unique biological diversity, the many ecosystem goods and services, and the spiritual and cultural heritage of this landscape are severely threatened.

The aims of KSLCI include biodiversity conservation, preservation of cultural heritage and traditional knowledge, and improved regional expertise on long-term environmental monitoring and ecological research. A systematic and participatory approach is adopted to engender transboundary cooperation within the region and to build implementation frameworks and regional networks of community, civil society, and government institutions to implement ecosystem management and landscape conservation. KSLCI is intended to provide a model of regional cooperation for transboundary ecosystem management that can potentially be replicated throughout the Hindu Kush Himalayan region.

The initiative will seek to bring about change by addressing multiple components such as:

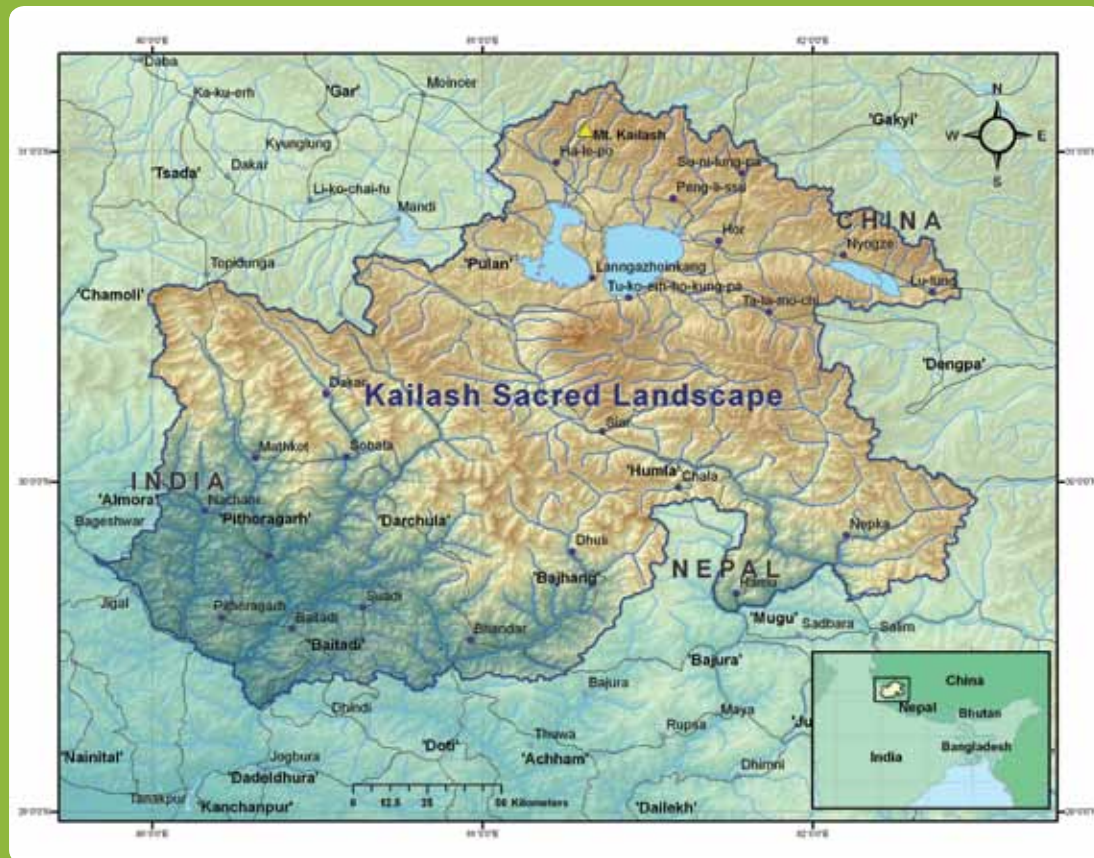
- innovative livelihood options;
- ecosystem management for sustaining services;
- access and benefit sharing towards the development of resilient communities;
- long-term conservation and environmental monitoring, and
- regional cooperation to enable policies and knowledge management.

In seeking to reduce adverse environmental impacts within the region, KSLCI directly addresses the challenges laid out by the Convention on Biological Diversity (CBD) and promotes the goals and approach described in the CBD's Programme of Work on Mountain Biological Diversity. It is also aligned with the CBD's ecosystem approach and its principles (CBD 2000).

The project includes activities at three levels – regional, national, and local. It was formulated in a participatory manner and will focus on participation throughout its duration. Local communities play an important role in monitoring environmental changes and in other activities involving sustainable alternatives to current livelihood patterns.

Objectives of the Kailash Sacred Landscape Conservation Initiative

- To enhance cooperation among the countries of the Hindu Kush Himalayan region through establishment of a Regional Cooperation Framework, development of a strategy for conservation of the Kailash Sacred Landscape, and development of a regional knowledge base
- To increase collection of climate change data in the Kailash Sacred Landscape and enhance transboundary coordination and collaboration of ecological and climate change monitoring through information exchange networks
- To recognize local efforts and strengthen local capacity for community-based participation in conservation and sustainable development, and enhance cultural-socio-ecological resilience



Definitions

Climate Change

Climate change refers to changes in climatic conditions such as weather patterns or temperature that can be observed for a long period of time. In the usage of the Intergovernmental Panel on Climate Change (IPCC), climate change refers to any change in climate over time, whether due to natural variability or as a result of human activity. This usage differs from that of the United Nations Framework Convention on Climate Change (UNFCCC), where climate change refers to a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods (IPCC 2007).

Adaptation is defined by IPCC as “in human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities”. In natural systems, it is “the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate” (IPCC 2012).

Vulnerability in regard to climate change refers to the inability to cope with changes in climatic conditions. As changes become more extreme, people might not have the capacity to adapt to them. It is then people are considered as vulnerable to climate change. According to the IPCC, vulnerability is “the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. ... Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, the sensitivity and adaptive capacity of that system” (IPCC 2007).

Biological Diversity

Biological diversity, or biodiversity, means the variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems (CBD 2010). In general, it refers to any and different kinds of life forms found in nature or in a given area.

Agrobiodiversity refers to the variety and variability of animals, plants, and microorganisms used directly or indirectly for food and agriculture including crops, livestock, forestry, and fisheries; it comprises the diversity of genetic resources (varieties, breeds) and species used for food, fodder, fibre, fuel, and pharmaceuticals, and also includes the diversity of non-harvested species that support production (soil microorganisms, predators, pollinators) and those in the wider environment that support agro-ecosystems (agricultural, pastoral, forest, and aquatic), as well as the diversity of the agro-ecosystems (FAO 2007).

Genetic resources include all genetic materials of actual or potential value; the value need not be commercial or monetary, but may be scientific or academic in nature (ICIMOD 2007). According to CBD (2010), “All living organisms; plants, animals, and microbes, carry genetic material that could be potentially useful to humans. These resources can be taken from the wild, domesticated, or cultivated. They are sourced from environments in which they occur naturally, or from human-made collections such as botanical gardens, gene banks, seed banks, and microbial culture collections.”

Sustainable use refers to the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations (CBD 2004).

Access and Benefit Sharing (ABS)

Access may include various activities including entering a location or place where genetic resources are found, surveying activities, obtaining or acquiring genetic resources, the use of genetic resources, and the study or systematic investigation of genetic resources for scientific and/or commercial purposes (SAS 2006). African model legislation from the Organization of African Unity (OAU) defines access as “the acquisition of biological resources, their derivatives, community knowledge, innovations, technologies, or practices” (ELI 2003).

Benefits are economic or academic advantages arising from research on the utilization of genetic resources.

Benefit sharing is defined by the International Union for Conservation of Nature (IUCN 2004) as “sharing of whatever accrues from the utilization of biological resources, community knowledge, technologies, innovations, or practices. It also means all forms of compensation for the use of genetic resources, whether monetary or non-monetary.”

Ecosystems

Ecosystem means a dynamic complex of plant, animal, and micro-organism communities and their non-living environment interacting as a functional unit (CBD 2000).

Ecosystem approach is a strategy for the integrated management of land, water, and living resources that promotes conservation and sustainable use in an equitable way (CBD 2004). It is based on the application of appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions, and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems.

Ecosystem service is a service people obtain from the environment. Ecosystem services are the transformation of natural assets (soil, plants, animals, air, and water) into things that have value for humans. They can be categorized in four groups: provisioning (e.g., food and water), regulating (e.g., flood and disease control); cultural (e.g., spiritual, recreational, and cultural benefits); or supporting (e.g., nutrient cycling).

Ecosystem goods include food, medicinal plants, construction materials, tourism and recreation, and wild genes for domestic plants and animals (IUCN no date).

Invasive alien species are non-native species whose introduction causes or is likely to cause economic or environmental harm or harm to human, animal, or plant health (NISC 2006). In the context of CBD, an invasive alien species is an “alien species whose introduction and/or spread threaten[s] biological diversity” (CBD 2002).

Medicinal and aromatic plants (MAPs) are plants which are primarily used for medical or aromatic purposes in pharmacy and perfumery (European Community Biodiversity Clearing-House Mechanism 2005). Medicinal plants in particular are often the original material of herbal medicines. Herbal medicines are plant-derived materials or products with therapeutic or other human health benefits which contain either raw or processed ingredients from one or more plants (Overwalle 2006).

Non-timber forest products (NTFPs) encompass all biological materials other than timber that are extracted from forests for human use (Belcher 2003). These include fruits and nuts, vegetables, fish and game, medicinal plants, resins, essences, and a range of barks and fibres such as bamboo, rattans, and a host of other palms and grasses. This broad definition also includes non-timber wood products such as fuelwood and wood handicrafts.

General

Traditional knowledge refers to tradition-based literary, artistic, or scientific works; performances; inventions; scientific discoveries, designs, marks, names, and symbols; undisclosed information; and all other tradition-based innovations and creations resulting from intellectual activities in the industrial, scientific, literary, or artistic fields. It is constantly evolving in response to a changing environment (WIPO 2001).

References

- Belcher, BM (2003) 'What isn't an NTFP?' *International Forestry Review* 5(2): 161–168
- Convention on Biological Diversity (CBD) (2000) *COP decision V/6 on the ecosystem approach*. www.cbd.int/doc/meetings/esa/ecosys-01/other/ecosys-01-dec-cop-05-06-en.pdf (accessed 16 February 2012)
- Convention on Biological Diversity (CBD) (2002) cited as in, Pooter, MD (2007) *Invasive alien species and protected areas: A scoping report part I*, Produced for the World Bank as a contribution to the Global Invasive Species Programme (GISP)
- Secretariat of the Convention on Biological Diversity (2004) *CBD Guidelines: The Ecosystem Approach*. Montreal, Canada: Secretariat of the Convention on Biological Diversity www.cbd.int/doc/publications/ea-text-en.pdf (accessed 5 February 2012)
- Convention on Biological Diversity (CBD) (2010) *Introduction to access and benefit-sharing*. www.cbd.int/abs/infokit/brochure-en.pdf (accessed 20 February 2012)
- Environment Law Institute (ELI) (2003) cited as in, Oli, KP; Gupta, JD (2008) *Regional framework on Access and Benefit Sharing (ABS) in the Himalayan region*. Kathmandu, Nepal: ICIMOD
- European Community Biodiversity Clearing-House Mechanism (2005) cited as in, Bogers, RJ; Craker, LE; Lange, D (eds) (2006) *Medicinal and aromatic plants*, 121–128. The Netherlands: Springer
- FAO (2007) *What is agro biodiversity?* <ftp://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf> (accessed 17 February 2012)
- ICIMOD (2007) *Glossary of access and benefit sharing*. Kathmandu, Nepal: ICIMOD <http://books.icimod.org/index.php/downloads/publication/292> (accessed 22 February 2012)
- Intergovernmental Panel on Climate Change (IPCC) (2007) *Climate Change: Working Group II: Impacts, adaptation and vulnerability*. www.ipcc.ch/publications_and_data/ar4/wg2/en/frontmattersg.html (accessed 20 February 2012)
- IPCC (2012) 'Summary for policymakers.' In Field, CB, Barros, V; Stocker, TF; Qin, D; Dokken, DJ; Ebi, KL; Mastrandrea, MD; Mach, KJ; Plattner, G-K; Allen, SK; Tignor, M; Midgley, PM (eds), *Managing the risks of extreme events and disasters to advance climate change adaptation*, A special report of working groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge, UK: Cambridge University Press
- IUCN (no date) *About biodiversity*. www.iucn.org/what/tpas/biodiversity/about/?gclid=CLypm_y94K4CFUwa6wodqDIFYQ (accessed 20 February 2012)
- IUCN (2004) cited as in, ICIMOD (2007) *Glossary of access and benefit sharing*. Kathmandu, Nepal: ICIMOD <http://books.icimod.org/index.php/downloads/publication/292> (accessed 17 February 2012)

Overwalle (2006) cited as in, Bogers, RJ; Craker, LE; Lange, D (eds) (2006) *Medicinal and aromatic plants*, 121–128. The Netherlands: Springer

Swiss Academy of Sciences (SAS) (2006) cited as in, ICIMOD (2007) *Glossary of access and benefit sharing*. Kathmandu, Nepal: ICIMOD <http://books.icimod.org/index.php/downloads/publication/292> (accessed 17 February 2012)

The National Invasive Species Council (NISC) (2006) *Invasive species definition clarification and guidance*, White paper submitted by the Definitions Subcommittee of the Invasive Species Advisory Committee (ISAC). www.invasivespeciesinfo.gov/docs/council/isacdef.pdf (accessed 17 February 2012)

World Intellectual Property Organization (WIPO) (2001) *Intellectual property needs and expectations of traditional knowledge holders*, WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999). Geneva, Switzerland: World Intellectual Property Organization

About ICIMOD

The International Centre for Integrated Mountain Development, ICIMOD, is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalayas – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalization and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.



ICIMOD gratefully acknowledges the support of its core and programme donors: the Governments of Afghanistan, Austria, Bangladesh, Bhutan, China, Germany, India, Myanmar, Nepal, Norway, Pakistan, Sweden, and Switzerland, and the International Fund for Agricultural Development (IFAD).



© ICIMOD 2012

International Centre for Integrated Mountain Development

GPO Box 3226, Kathmandu, Nepal

Tel +977-1-5003222 **Fax** +977-1-5003299

Email info@icimod.org **Web** www.icimod.org

ISBN 978 92 9115 250 6