

ICIMOD Manual 2018/5

# Community Training Manual



Management for Ecosystem Services

ICIMOD

FOR MOUNTAINS AND PEOPLE



भारतीय वन्यजीव संस्थान  
Wildlife Institute of India



UN environment WCMC

# 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 Himalaya (HKH) – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – based in Kathmandu, Nepal. Globalization and climate change are having 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 and downstream issues. ICIMOD supports regional transboundary programmes through partnerships with regional partner institutions, facilitates the exchange of experiences, and serves as a regional knowledge hub. It strengthens networking among regional and global centres of excellence. Overall, ICIMOD is working to develop economically- and environmentally-sound mountain ecosystems to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now and in the future.



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ICIMOD Manual 2018/5

# Community Training Manual



## Management for Ecosystem Services

International Centre for Integrated Mountain Development, Kathmandu, Nepal, June 2018

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## About Transboundary Landscape Initiatives in the Hindu Kush Himalaya

The Hindu Kush Himalaya is extremely varied, yet there are many interlinkages between biomes and habitats as well as strong upstream-downstream linkages related to the provisioning of ecosystem services. The Convention on Biological Diversity advocates for the use of landscape and ecosystem approaches for managing biodiversity in the region, recognizing the need for increased regional cooperation. ICIMOD and its partners have identified seven transboundary landscapes for programmatic cooperation. From west to east, these are: Hindu Kush Karakoram-Pamir, Kailash, Everest, Kangchenjunga, Far Eastern Himalayas, and Cherrapunjee-Chittagong. The transboundary landscape concept makes it possible to address the conservation and sustainable use of natural resources (biodiversity, rangelands, farming systems, forests, wetlands, and watersheds) in landscapes defined by ecosystems rather than administrative boundaries. The approach is people-centred and includes cultural conservation, which is an essential first step to resource conservation efforts in the region and helps translate collaborative action into sustainable and equitable development.

## About the Kailash Sacred Landscape

Located within the remote southwestern portion of the Tibet Autonomous Region of China, adjacent districts in the far-western region of Nepal, and the northeastern flank of Uttarakhand State in northern India, the Kailash Sacred Landscape (KSL) is spread over an area of about 31,000 km<sup>2</sup> and represents a diverse, multi-cultural, and fragile landscape.

The Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI) is a transboundary collaborative programme between China, India, and Nepal that has evolved through a participatory, iterative process among various local and national research and development institutions within these countries. The programme aims to achieve long-term conservation of ecosystems, habitats, and biodiversity while encouraging sustainable development, enhancing the resilience of communities in the landscape, and safeguarding the cultural linkages between local populations.

## About Ecosystem Services

The simplest and most widespread definition of ecosystem services is, “the benefits people obtain from ecosystems”, as defined by the Millennium Ecosystem Assessment (MEA 2005). The MEA categories of ecosystem services — provisioning, regulating, cultural, and supporting — are still the most widely used classification.



## Picture Series: A methodology for inclusive adult education

Picture Series is a participatory, inclusive adult education training method for communities and other local-level stakeholders in development programmes.

This method:

- Simplifies difficult technical subjects into the language and messages that resonate with the local communities, NGO staff, and other stakeholders in the field.
- Allows participants to be actively involved in discussions.
- Provokes and steers the participants' thought processes.
- Is an intensive process for participants, as well as trainers, that results in new insights on the topic of the training.

The material can be used by local authorities or field staff of governmental or non-governmental organizations working in an area related to the respective topic and who have adequate knowledge.



# How to Use This Manual

**Target group:** Community members, local authorities, conservation practitioners, community forest user groups, and others. The ideal number of participants ranges from 20 to 30. Up to 60 participants may be accommodated if the amount of time provided is doubled.

**Aim:** Participants understand the concept of ecosystem and ecosystem services and the interlinkages between ecosystem health, sustainable management, and the ability of an ecosystem to provide services.

**Duration:** 2 to 2.5 hours

**Note:** *In addition to using the picture series as a whole during a well-organized training session, trainers can also use individual pictures to conduct short, flexible, ad hoc awareness-building activities for a specific purpose.*

## General rules for the training

1. Give everyone a chance to express his/her point of view freely and without interruption.
2. Actively involve women and quieter participants in the discussion, as they may remain quiet while more active participants express their opinion more emphatically.
3. Listen to each participant attentively, and give her/him the feeling that every answer is important.
4. There are no wrong answers.

An efficient and successful training session on management for ecosystem services has three parts:

- Preparation
- Conducting the training
- Assessment

Making the training a success is a difficult task and depends on the way you, as the trainer, address the community members.



## Preparation

Choose the place for the training. Inform the participants about the place, date, and time well in advance. Gather all the materials and familiarize yourself with them. Arrange the pictures in order. Seats should be arranged in a semi-circle. Ensure there is enough light to see the pictures during the training. Encourage women to participate.

## Conducting the training session

- Step 1** Get introduced by the local leaders and/or the partner. Create a warm and positive atmosphere by telling a story about yourself, the topic, the area, and your visit.
- Step 2** Select one volunteer and ask her/him to come to the front. Ask her/him to take the first picture and to show it to the audience. She/he can move around if necessary to ensure that everyone sees the picture properly. Take your time to ensure that everyone has seen the picture. Do not rush.

**Remember:** It is best if you show the picture yourself, as you can guide the direction, speed, and level of discussion, for example by requesting the participants to only look at the picture and to speak later.

- Step 3** Ask the question: What do you see on the picture? Encourage the participants to describe and discuss the contents of the picture, but not the meanings or stories behind the picture. There are no wrong answers, as people are interpreting the pictures. Make sure they do not feel like they are making any mistakes. If they are not giving the desired answers, ask other questions to steer the discussion and to encourage people to consider other points of view. Do not describe or explain the picture to the participants at any time.
- Step 4** If the participants (and you) are satisfied with the description of the picture, take the next one according to the order suggested in the manual.
- Step 5** After all, or a few connected pictures from the first topic are shown, ask the participants to create stories using the pictures. Ensure that everyone understands the objective and messages of the topic. Only then move on to the next topic. Please leave only pictures relevant for the discussion visible to not disturb the through processes.
- Step 6** Please note that you can be flexible regarding the order of the pictures. You can always go back to already used pictures, ask people to make the right order of a series of pictures, or ask them to set priorities. Adapt to the situation. Play with the pictures, and let others also play with them as well. For example, let sequences change, use volunteers to stand in different sequences with pictures, request new or better drawings, etc.

## Assessment

At the end of the session, ask questions to find out if the participants understand the topic. Gather feedback on the material used and the training session. Make notes of the collected feedback after the training session and try to incorporate the feedback into your next training session.



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# 1. What are ecosystems?

## Aim of the topic

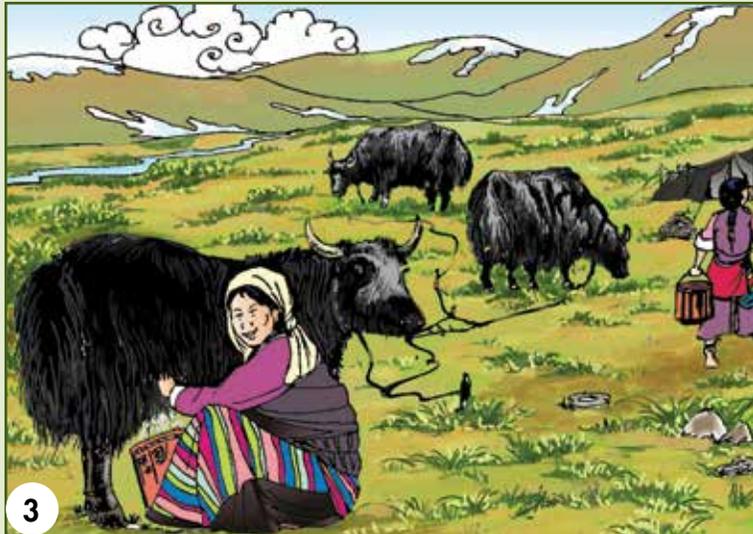
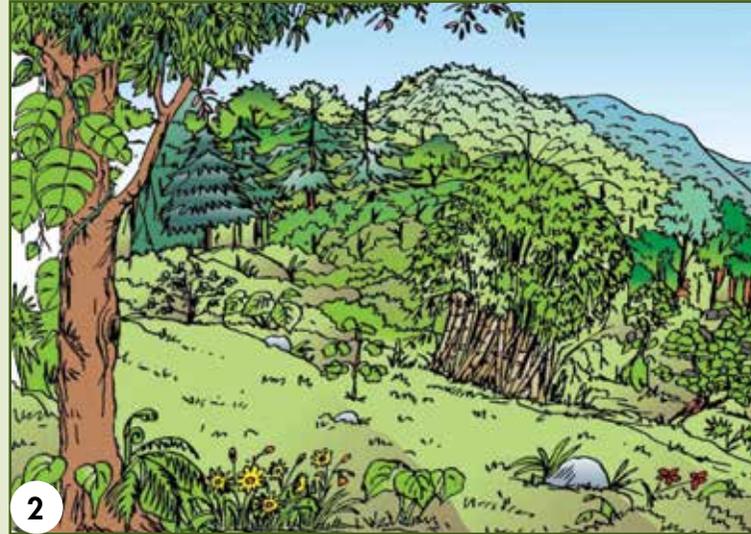
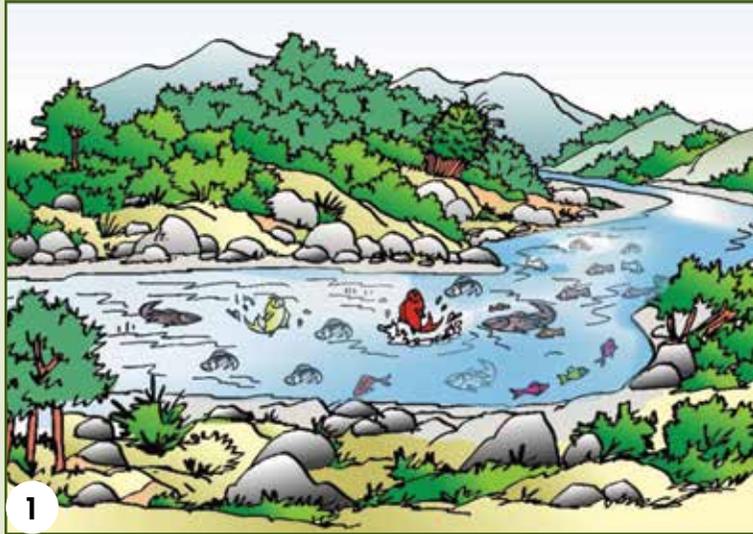
Participants know what an ecosystem is, and can describe different ecosystems in their own area.

## Messages

- An ecosystem is made up of living (plants, animals, microorganisms) and non-living (rocks, soil, water, air) things that interact/work with each other to exist together.
- Human beings are a part of the ecosystem.
- There are different types of ecosystem, such as wetlands, river, grassland, forest, desert, agricultural land, or even a city.
- Ecosystems vary in scale from a very small area (pond) to a very large area (forest).
- In an ecosystem “everything is in its place”.

Remember

## Describe the pictures and tell stories



## Indicators of the pictures

- 1 Healthy river ecosystem with fish
- 2 Different plants in a forest
- 3 Fertile high altitude ecosystem with yaks and humans
- 4 Small agricultural ecosystem within a bigger forest ecosystem



## 2. What are ecosystem services?

### Aim of the topic

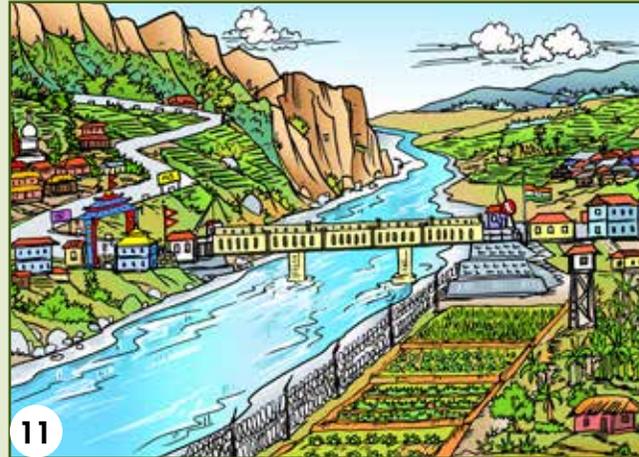
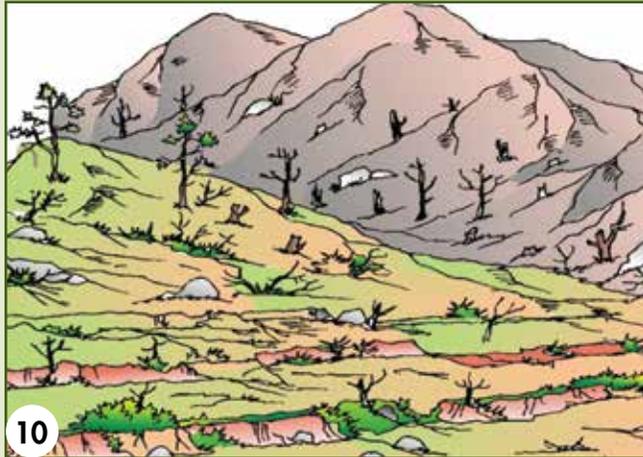
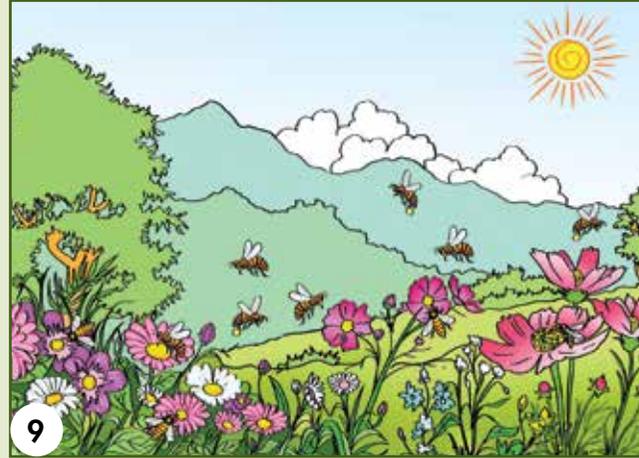
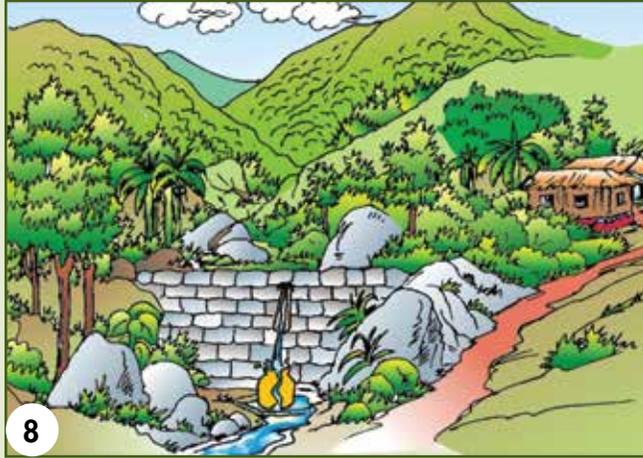
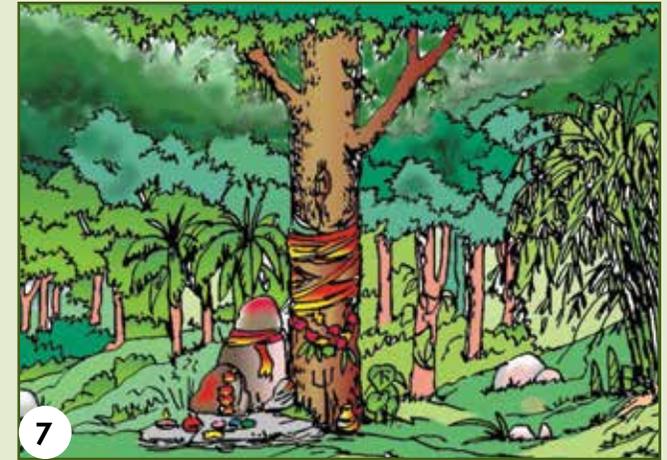
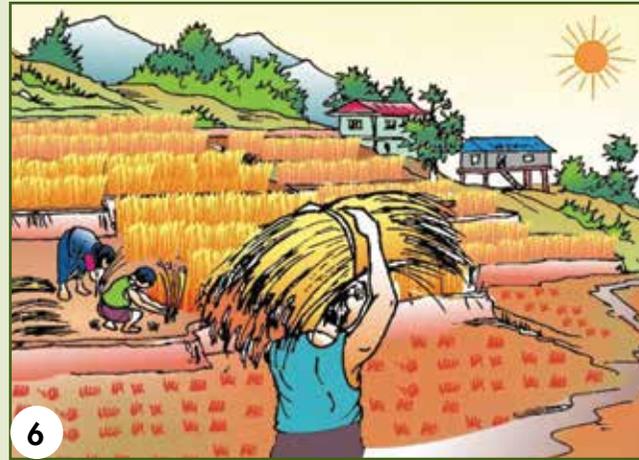
Participants understand that ecosystems deliver goods and services to the living beings around and within them.

### Messages

- Our life depends on what nature gives us in the form of ecosystem services:
  - Food, wood, fibre, fruits, and medicinal plants
  - Good soil (quality) for growing crops and fodder
  - Fresh, clean water (quantity and quality) and fresh air
  - Spiritual, cultural, educational, and recreational services
- Ecosystems provide more services when they are in a healthy state.
- Ecosystem services cross all boundaries: villages, provinces, and countries.

Remember

## Describe the pictures and tell stories



### Indicators of the pictures

- 5 Women with different provisions like water, food, and fodder
- 6 Agricultural ecosystem with labourers
- 7 Landscape with religious place
- 8 Healthy landscape with clean and fresh spring water
- 9 Flower field with bees
- 10 Barren land after deforestation
- 11 Ecosystem crossing country borders



# 3. How does an ecosystem function?

## Aim of the topic

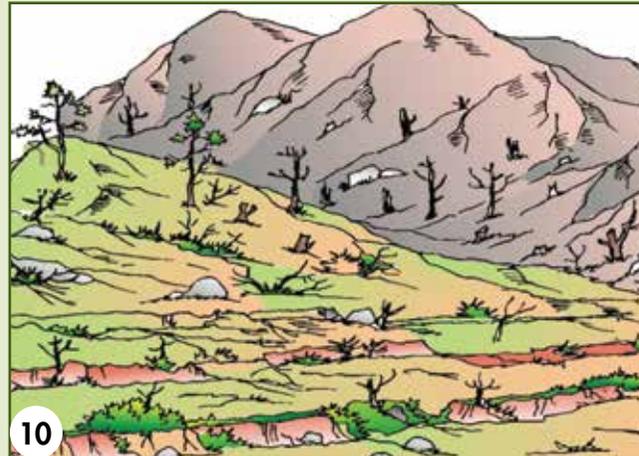
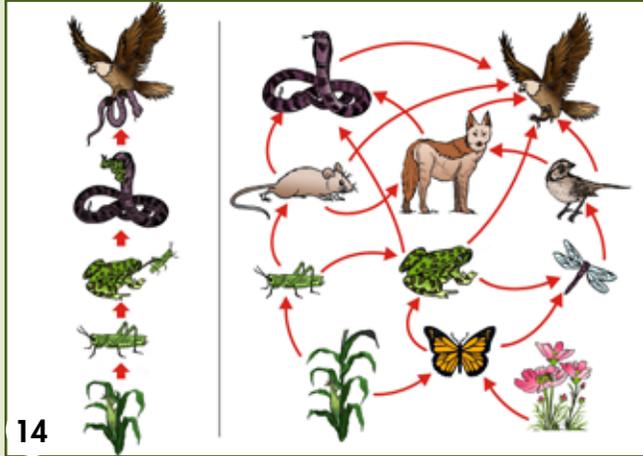
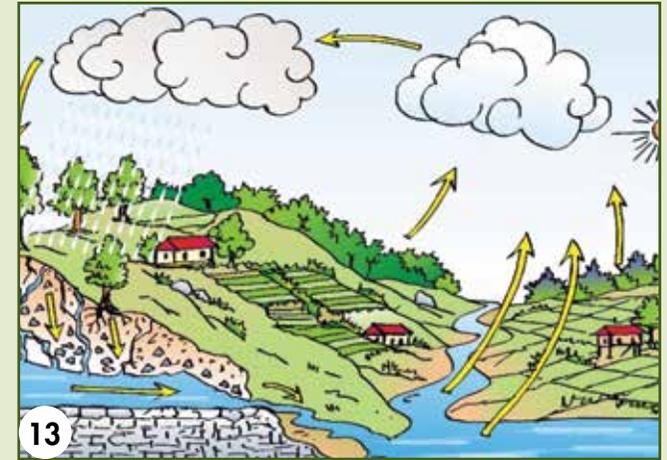
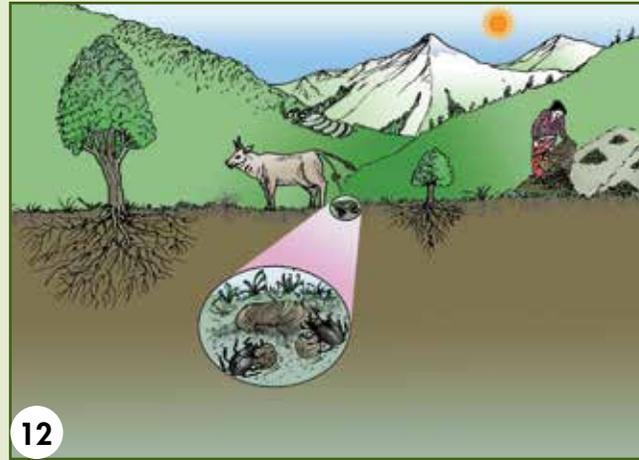
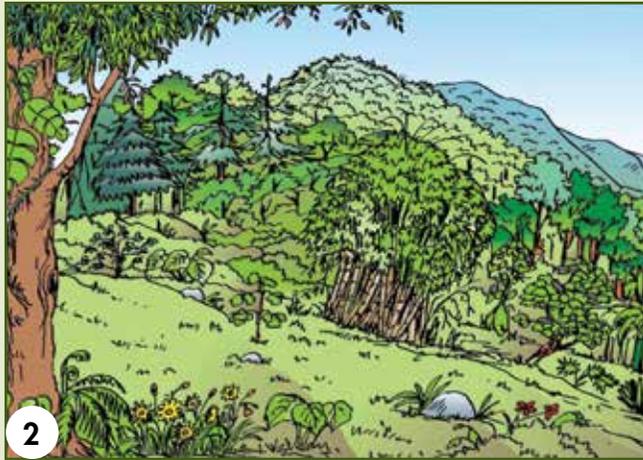
Participants understand how an ecosystem functions to give us the desired services.

## Messages

- Ecosystem functioning refers to the ability of an ecosystem to provide goods and services to people.
- Every ecosystem has four interlinked processes occurring in them:
  - Water cycle
  - Mineral (composts, farmyard manure, chemical fertilizers) cycle
  - Solar energy flow (all the energy comes from the sun)
  - Biological growth
- Ecosystem structures are parts of an ecosystem that can be seen and measured:
  - Vegetation structure
  - Food web/chain structure
  - Soil structure
- The processes and structures work together to provide ecosystem services, such as pollination, decomposition, and seed dispersal. If one or more of the processes or structures are disturbed, the ecosystem can't provide the desired ecosystem services anymore (*for example, felling a large number of trees from a hillside can lead to higher erosion during rains, which affects the ecosystem's function to hold soil*).

Remember

## Describe the pictures and tell stories



### Indicators of the pictures

- 2** Different plants in a forest
- 12** Minerals from composts and others can either stay in or leave an ecosystem
- 13** Water cycle
- 14** Food chain and food web
- 15** Soil structure
- 9** Flower field with bees
- 10** Barren land after deforestation



## 4. How do we know, if an ecosystem is healthy or not?

### Aim of the topic

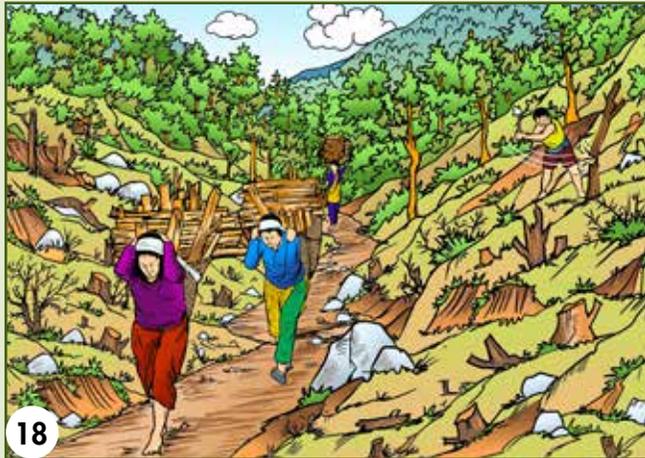
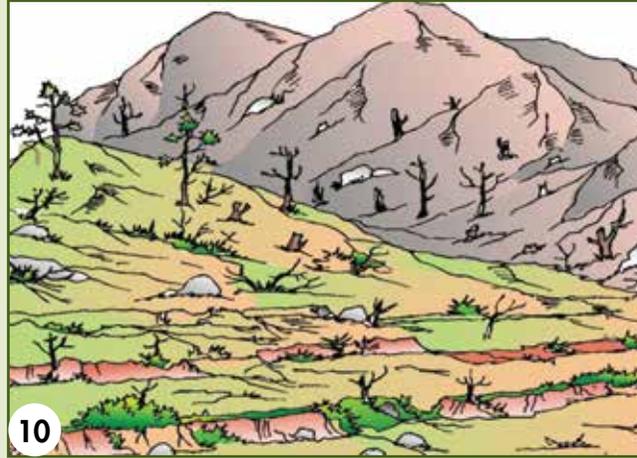
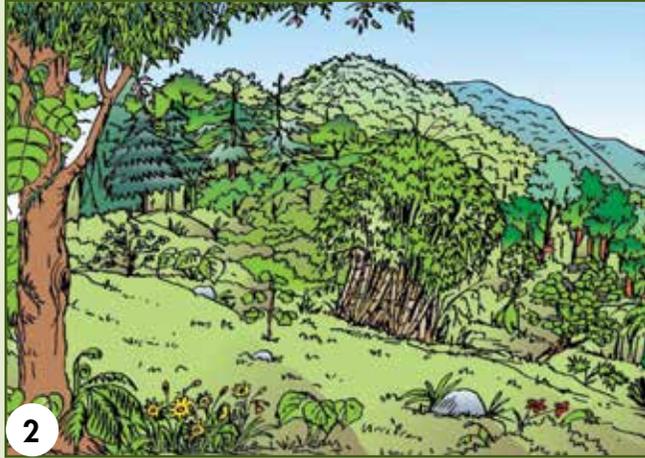
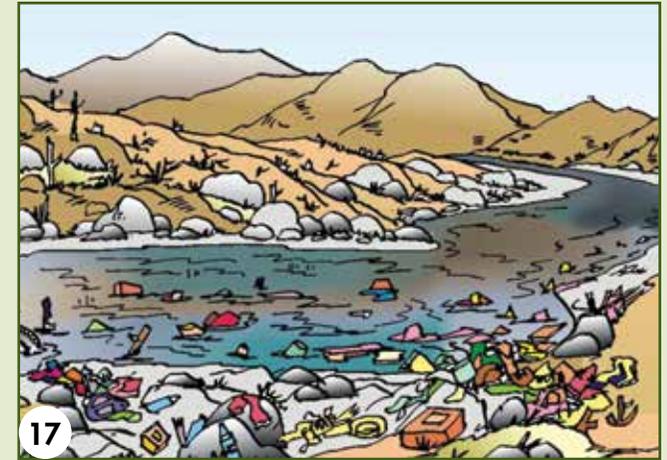
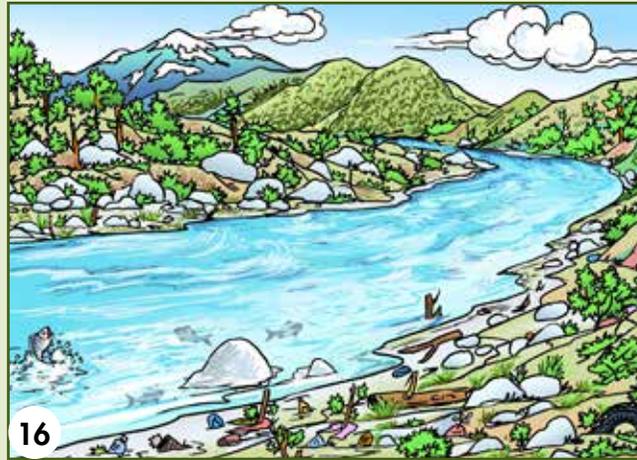
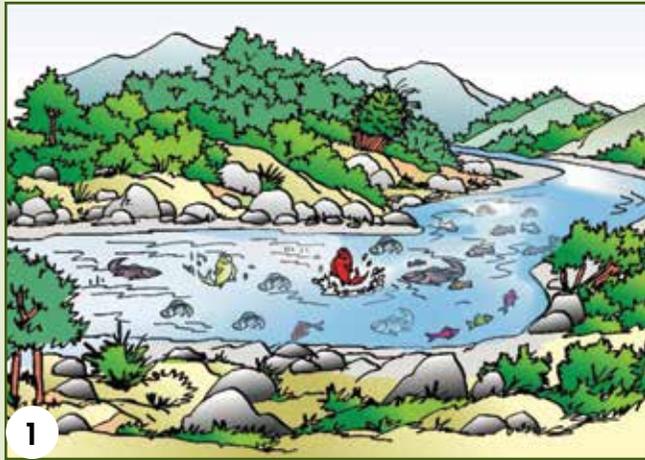
Participants are able to identify healthy and unhealthy parts of an ecosystem and understand that an ecosystem has a limit to going back to its original state.

### Messages

- The whole ecosystem or only some parts of the ecosystem can be healthy or unhealthy.
- Healthy ecosystems provide more clean water and air, plants, and animals.
- In an unhealthy ecosystem “not everything is in its place”.
  - Parts of the ecosystem structure are missing that have been there before like plants, some animals, or the top soil.
  - Parts of the ecosystem have not been there before like foreign plants and animals.
- An ecosystem has the ability to recover from changes and disruption to a certain degree. If the change or disruption exceeds a certain point, it will be difficult for the ecosystem to go back to its original state.

Remember

## Describe the pictures and tell stories



### Indicators of the pictures

- 1 Healthy river ecosystem with fish
- 16 Partly healthy river ecosystem with some signs of pollution
- 17 Unhealthy river ecosystem with no fish
- 2 Different plants in a forest
- 10 Barren land after deforestation
- 18 Partially degraded forest
- 19 Heavily degraded forest



## 5. What factors influence the health of an ecosystem?

### Aim of the topic

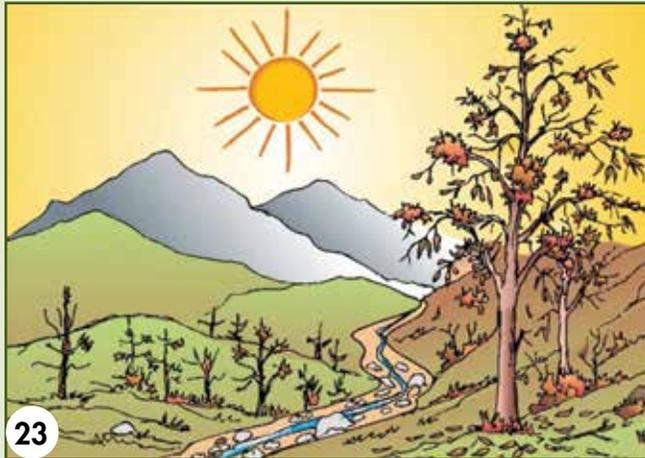
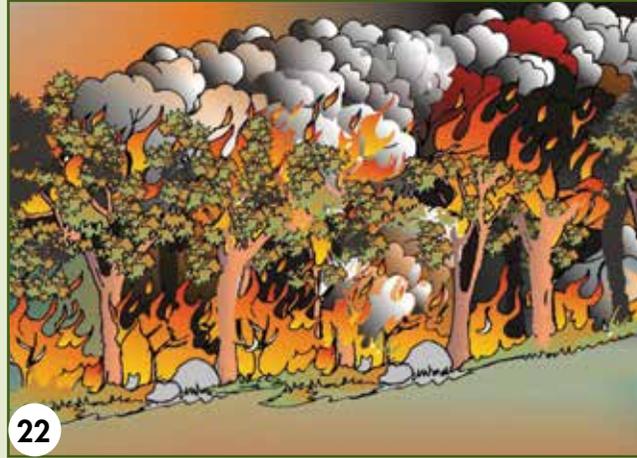
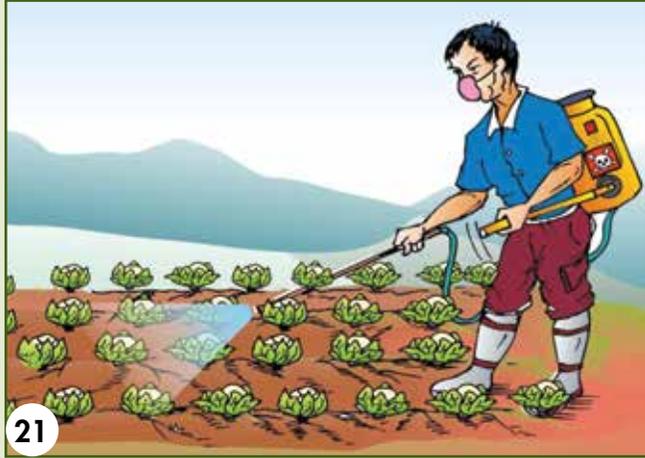
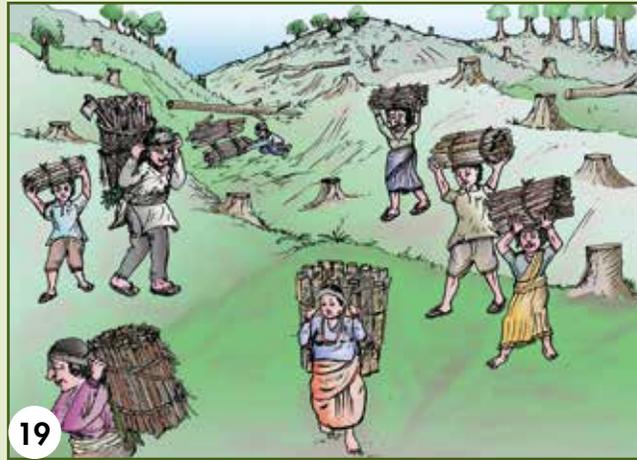
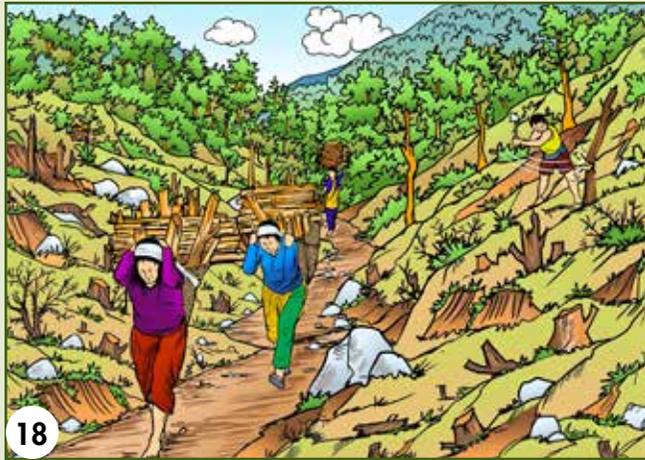
Participants know human-made and natural factors of change that impact the health of an ecosystem and are able to identify them in their own ecosystems.

### Messages

- There are human-made and natural factors that contribute to a change in an ecosystem making it healthy or unhealthy.
  - Human made: degradation, deforestation, road construction, urbanization, intensive agriculture, overexploitation of resources, fertilizer and pesticide use (nutrient load), population increase, pollution, invasive alien species, fire, etc.
  - Environmental and natural: landslides, floods, droughts, earthquakes, climate change in general, etc.

Remember

## Describe the pictures and tell stories



### Indicators of the pictures

- 18 Partially degraded forest
- 19 Heavily degraded forest
- 20 Lowland ecosystem with settlement and pollution
- 21 Use of chemicals
- 22 Forest fire
- 23 Drought
- 24 Flash flood



## 6. How can we improve ecosystem services?

### Aim of the topic

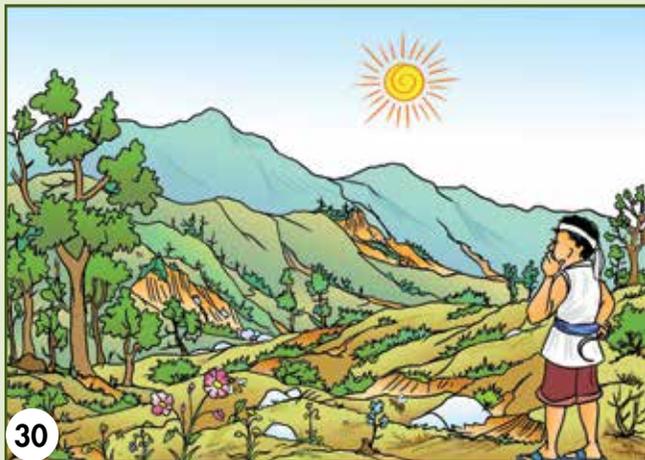
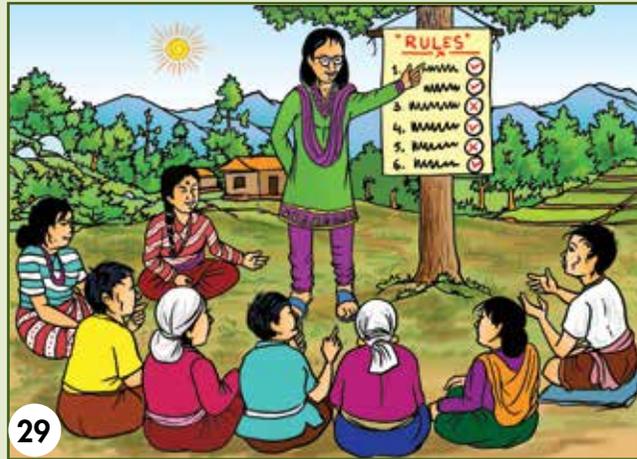
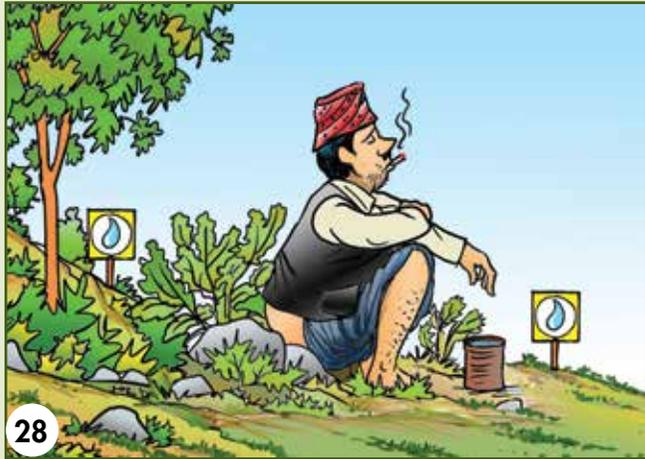
Participants understand ways to improve ecosystem services and are able to implement improvements themselves.

### Messages

- Identify the main ecosystem services and causes of change in your area.
- Select a management strategy that improves ecosystem services and reduces causes of change.
- Possible management strategies include:
  - Fodder: rotational grazing, reseeded, improved livestock breed, stall feeding
  - Fuelwood: collecting dead and dry wood, reforestation, agroforestry, selection of right species
  - Clean water: well-maintained recharge area (no construction, littering of waste), banning open defecation, increased vegetation cover and structure, awareness raising
  - Wildlife: introduction of no-poaching policy, maintaining vegetation structure, highlighting the value of the species beyond your own area
- Monitor the condition of the vegetation, animals, water, and soil quality to ensure that you chose the right management strategy.

Remember

## Describe the pictures and tell stories



### Indicators of the pictures

- 25 Group sitting together discussing
- 26 Rotational grazing system
- 27 People planting new trees
- 28 No open defecation in the recharge area of a spring
- 29 Setting and following rules and regulations
- 30 Man observes changes



## 7. Participatory ecosystem management planning

### Aim of the topic

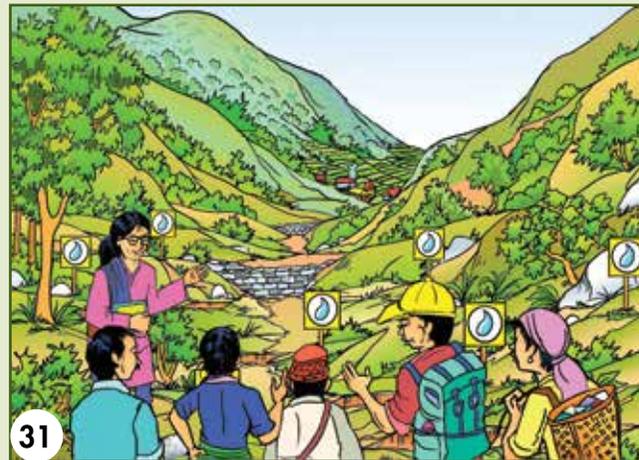
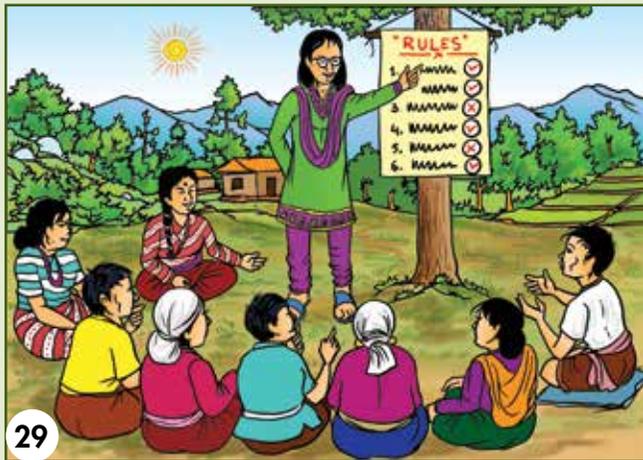
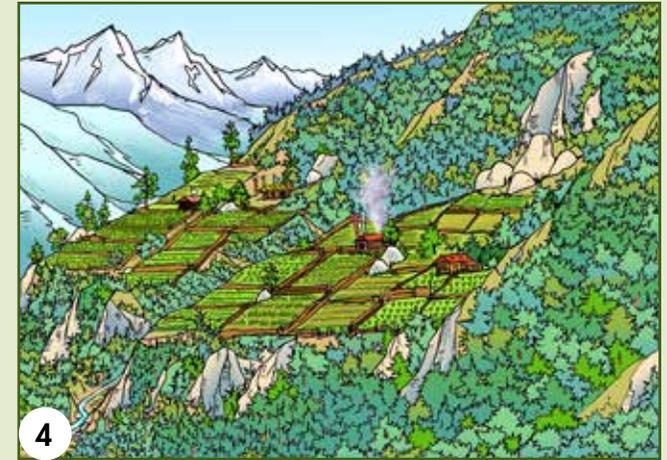
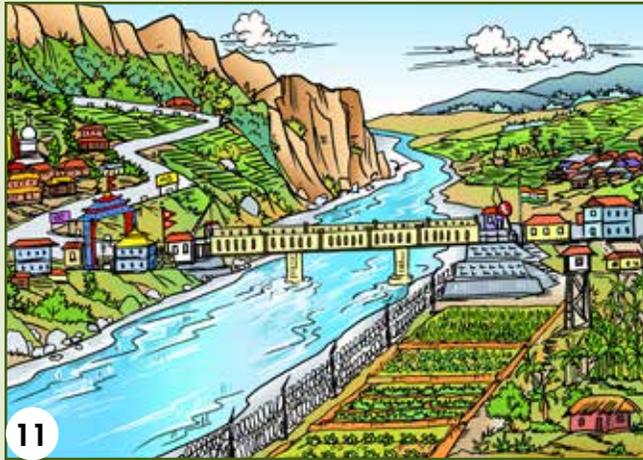
Participants understand the need for a participatory approach for improved ecosystem management as well as binding rules and regulations.

### Messages

- An ecosystem is used by many people in the community or even beyond it.
- Involve all stakeholders in the planning, implementation, and evaluation process. Integrate women, men, young people, elders, marginalized groups, community groups, government officials, etc.
- Think about the possible positive and negative effects of different ecosystem services when managing an ecosystem. Compromise might be needed.
- Rules and regulations can be better enforced if prepared through a participatory approach.
- Conduct awareness-raising programmes for all stakeholders.

Remember

## Describe the pictures and tell stories

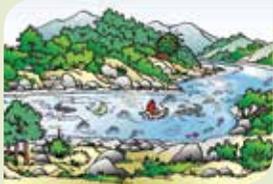


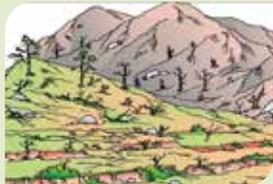
### Indicators of the pictures

- 11 Ecosystem crossing country borders
- 25 Group sitting together discussing
- 4 Small agricultural ecosystem with in a bigger forest ecosystem
- 29 Setting and following rules and regulations
- 31 People with different backgrounds study ecosystem



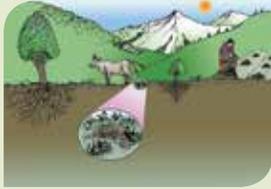
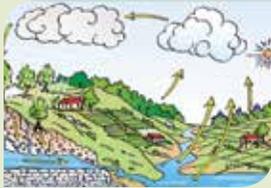
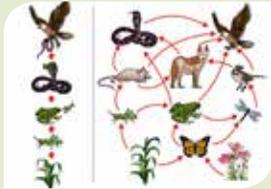
## Summary of the pictures

No.	Picture	Indicator of picture
1		Healthy river ecosystem with fish
2		Different plants in a forest
3		Fertile high altitude ecosystem with yaks and humans
4		Small agricultural ecosystem within a bigger forest ecosystem
5		Women with different provisions like water, food, and fodder

No.	Picture	Indicator of picture
6		Agricultural ecosystem with labourers
7		Landscape with religious place
8		Healthy landscape with clean and fresh spring water
9		Flower field with bees
10		Barren land after deforestation



## Summary of the pictures

No.	Picture	Indicator of picture	No.	Picture	Indicator of picture
11		Ecosystem crossing country borders	16		Partly healthy river ecosystem with some signs of pollution
12		Minerals from composts and others can either stay in or leave an ecosystem	17		Unhealthy river ecosystem with no fish
13		Water cycle	18		Partially degraded forest
14		Food chain and food web	19		Heavily degraded forest
15		Soil structure	20		Lowland ecosystem with settlement and pollution



## Summary of the pictures

No.	Picture	Indicator of picture
21		Use of chemicals
22		Forest fire
23		Drought
24		Flash flood
25		Group sitting together discussing

No.	Picture	Indicator of picture
26		Rotational grazing system
27		People planting new trees
28		No open defecation in the recharge area of a spring
29		Setting and following rules and regulations
30		Man observes changes



## Summary of the pictures

No.	Picture	Indicator of picture
31		People with different backgrounds study ecosystem







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