Koshi Basin Programme

ICIMOD 30

THREE DECADES
FOR MOUNTAINS AND PEOPLE

Encouraging equitable and regionally coordinated river basin management and poverty reduction in the Koshi River basin through the development of evidence-based knowledge for integrated, innovative, and inclusive decision support

The Koshi River basin contains a rich biodiversity and is a source of valuable ecosystem services that sustain the lives and livelihoods of millions of people in China, India, and Nepal. The basin plays a key role in the irrigation of downstream areas and has a large potential for hydropower development. However, the basin's diverse topography, young geological formations, high degree of glaciation, and strong monsoon influence make it highly prone to erosion, sedimentation, and natural hazards, including glacial lake outburst floods (GLOF), landslides and debris flow, droughts, and flood. These events may increase in magnitude and frequency in the current context of global environmental change. Increasing population, urbanization, and encroachment have added additional pressures on the basin's freshwater ecosystems. Poor mountain women and men are often the most vulnerable to natural disasters and the least able to adapt and respond to rapid changes. Facing these challenges requires a collective effort among all stakeholders.

With support from the Australian Government, ICIMOD in partnership with key national and international partners, has initiated the Koshi Basin Programme (KBP) Phase I (2012–2016) to develop strategies to enhance the regionally coordinated management of water resources in the Koshi basin for improved wellbeing of local communities and sustainable use of ecosystem goods and services. The KBP aims to contribute to inclusive poverty reduction in the Koshi basin by evaluating possible water-related development pathways through knowledge development, evidence-based decision making, and basin-wide cooperation considering climate change, hazards, and the provision of sustainable ecosystem services.

Why the River Basin Approach?

A river basin has common biophysical, economic, social, and cultural attributes that facilitate relations among those living in them because of shared resource utilization patterns and emergent issues. River basin management promotes meaningful interaction and reconciliation of the interests of the various actors at a basin-wide scale to maximize benefits, such as irrigation and hydropower, while minimizing adverse events, such as floods and landslides.

ICIMOD, as a regional institution, has embraced the river basin approach to water management in the transboundary river basins of the Hindu Kush Himalayan (HKH) region. The Koshi Basin Programme aims to promote and test this approach in the HKH region through its work in the Koshi River basin by developing a comprehensive understanding of the system dynamics, providing impact analysis, and facilitating decision making based on an improved knowledge base.

The KBP will approach river basin management through a mix of policy-relevant scientific, economic, social, and ecological knowledge and decision support to promote the sustainable use of transboundary water resources and develop 'win-win' solutions that can be supported by all countries. Particular focus will be given to issues of gender and inequality and their linkages to drivers of change and river basin management, as well as to the potential of employing incentive-based mechanisms to improve water use efficiency and productivity.

Objectives

- **Support evidence-based policy interventions** through the development of knowledge on how climatic and socioeconomic drivers effect ecosystem services and the livelihoods of dependent populations
- **Develop and test appropriate and adaptable livelihood strategies** to address the increasing impacts of change on ecosystem goods and services at local, national, and regional scales
- **Contribute to developing an enabling environment** for policy and decision makers to create integrated, innovative, equitable, inclusive, and effective responses to protect and manage river basin ecosystems and to reduce poverty in the frame of integrated natural resources management and improved basin-wide cooperation, including capacity building at all levels

Working closely with partners in the riparian countries, a basin-wide decision support mechanism will support development pathways and strategies for sustainable water use in agriculture and energy; livelihood promotion; improved ecosystem services; the needs and uses of climate, water, and agricultural-related information; and current water-related hazard risk management and adaptation practices. Action research and showcase programmes will be conducted to

- improve understanding of the impact of water and risk management on people and livelihoods;
- propose structural and non-structural measures for water storage;
- prepare community adaptation strategies for different change scenarios; and
- minimize livelihood shocks due to climate and hazard-related uncertainty.

Map of the Koshi River Basin

Questions addressed by the Koshi Basin Programme:

How will changes in climate, monsoon, glacier and snow melt, and land use affect the hydrological regime and sedimentation of the Koshi River basin?

How will the frequency, magnitude, and exposure to water-induced hazards change in response to climate, land use, and other change drivers?

What is the status of ecosystem services and to what level are local livelihoods dependent upon them?

How can water security, water storage, and efficient water use be ensured for agricultural, domestic, and other uses under current and projected climate variability and uncertainty?

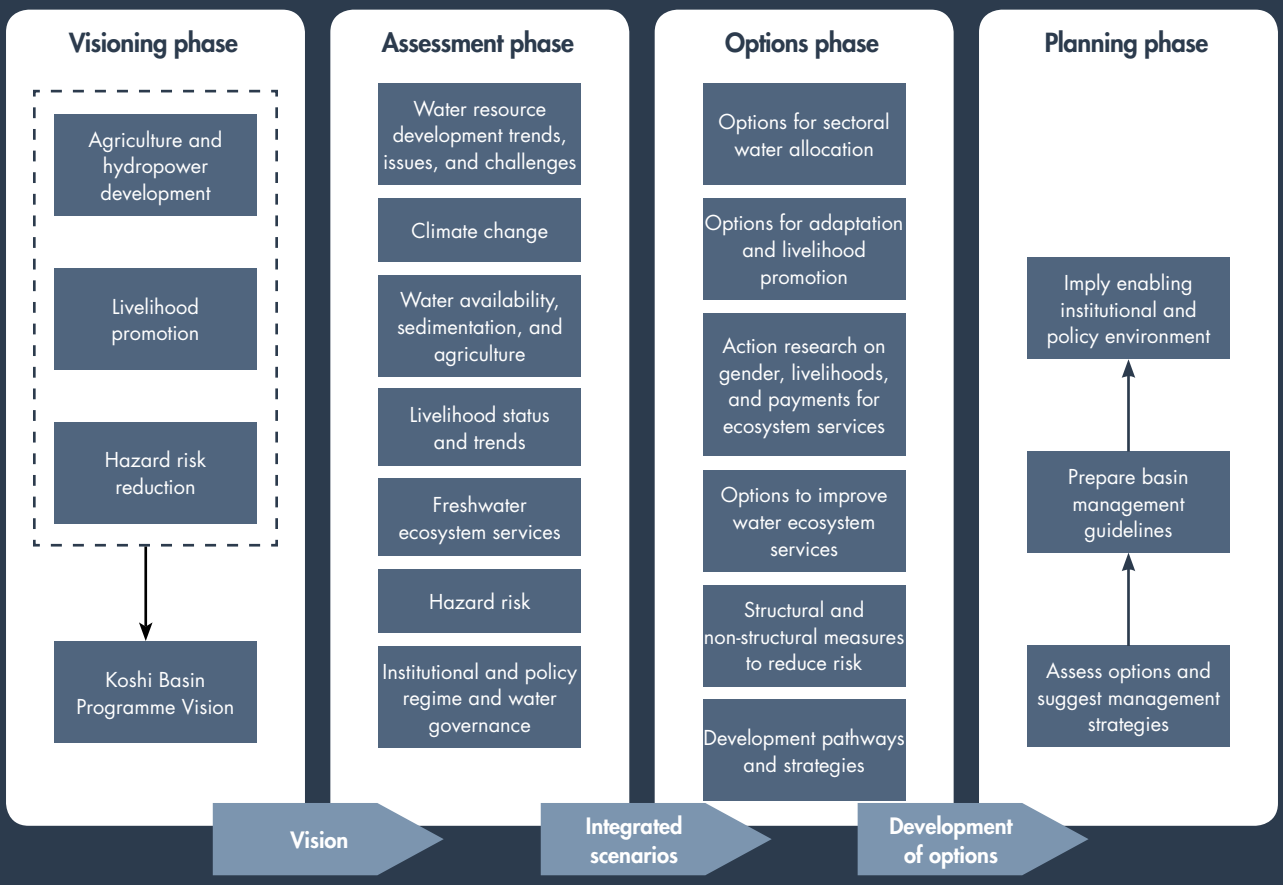
What are the key requirements for better integration of the transboundary approach to water management into existing water and ecosystem policies, institutional capacities, and each country's overall development agenda?

The effects and uncertainty resulting from climate change, changes in the cryosphere, natural disasters, sedimentation, issues related to agricultural production and market access, and accessibility of ecosystem services are all key challenges for the effective management of the Koshi River basin.

Conceptual framework

The Koshi Basin Programme will approach basin-wide water management with a set of processes leading to practical outputs in the form of water development strategies, plans and activities, and improved communication to support evidence-based decision making.

- Visioning phase. Develop a shared understanding of effective and equitable basin-wide water resource development and management.
- Assessment phase. Evaluate available resources, infrastructure, demand, and access considering livelihood status and trends, climatic uncertainty and system of water governance and gender issues and identify challenges and opportunities for finding solutions.
- Options phase. Evaluate the efficacy, feasibility, and usefulness of development support associated with available options using modelling, evaluation, and resource optimization.
- Planning phase. Produce viable, high-quality implementation plans based on assessed options to maintain the broader process of dialogue and attention on issues of social equity.



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