

# Climate services to build resilient communities in the Hindu Kush Himalaya



## Introduction

Climate services involve the production, translation, transfer, and use of past, present, and future climate data and information to support climate-informed planning, policy, and practice in key sectors. These services are an essential component of a country's efforts to address climate-related risks and improve livelihoods and ensure economic, environment, and food security.

Climate services enable policy makers and practitioners to anticipate and manage climate-related shocks and opportunities effectively. These services are not only about reducing vulnerabilities and enhancing resilience. Their most visible outcomes are in supporting developmental interventions, increasing productivity, protecting ecosystems, and conserving biodiversity by influencing decision making on climate-dependent policies, plans, and actions.



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Adaptation to climate variability and change is an urgent issue that requires partnerships and joint action at scale. Such adaptation measures also need to be better integrated into sustainable development and disaster risk reduction agendas.

International Centre for Integrated Mountain Development's (ICIMOD) Climate Services Initiative, in partnership with a range of partners, will improve climate knowledge, build capacities, and promote data and information exchange. Climate services will be developed in line with national policies supporting member countries to achieve Sustainable Development Goals (SDGs) by 2030.

## Global Framework for Climate Services (GFCS)

The GFCS, led by the World Meteorological Organization, supports the development and application of science-based climate information and services for effective decision making. The GFCS draws attention to regional and national needs to enable society to better manage risks and opportunities arising from climate variability and change. It offers science-based climate information for planning, policy, and practice. The GFCS primarily aims to ensure that the best available scientific knowledge on climate is effectively used and communicated to various sectors, with agriculture, food, water, health, tourism, energy, and disaster risk reduction as priority areas.



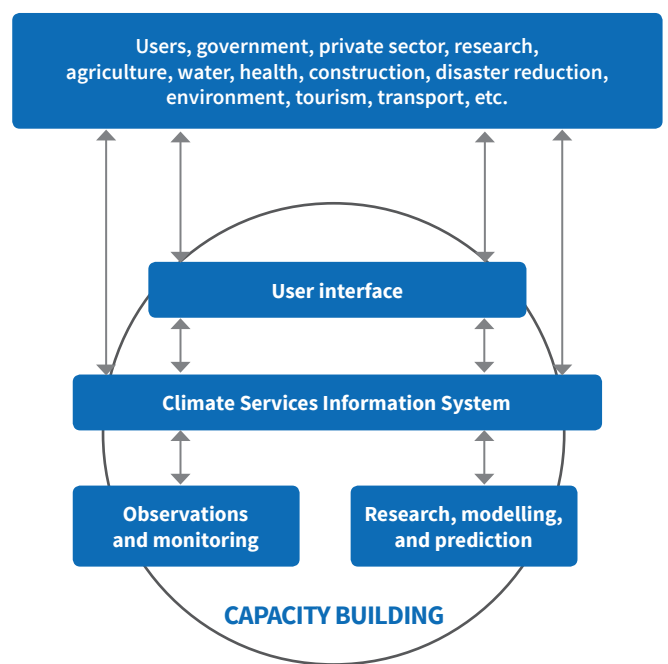


## ICIMOD's framework for climate services

The framework for the Climate Services Initiative under the ICIMOD has been conceptualized around the GFCS's core functional values with a regional and mountain perspective. In essence, the Climate Services Initiative will develop a framework for climate services in the Hindu Kush Himalayan (HKH) region, with its role and purpose framed around the supportive and facilitative service principles of improving climate knowledge, building capacities of providers and users, and promoting free and open-exchange of data and information. The framework will also respect existing data policies and facilitate timely service provisioning to better manage the risks and opportunities arising from climate variability and change, especially for those who are most vulnerable to such risks.

At ICIMOD, the Climate Services Initiative is strategically placed under the regional programme (RP) on Mountain Environment Regional Information System (MENRIS) to ensure synergy with broader Earth observation and geospatial technologies, consequently supporting the delivery of efficient and effective climate services.

ICIMOD's approach is to develop the institutional and technical capacity of various stakeholders, particularly to improve the generation, processing, and use of climate services. A key assumption in this approach is that demand-driven, co-designed, and co-developed climate services



A schematic of the components of the Global Framework for Climate Services, with capacity building occurring within and between all other components.

Source: WMO (2011), *Climate knowledge for action: A Global Framework For Climate Services – empowering the most vulnerable services*. Geneva, Switzerland: WMO.





with improved capacities will reduce future climate risks and support more robust adaptation planning and policy decisions, thereby increasing resilience to climate change.

ICIMOD facilitates the implementation of the GFCS within the HKH region.

## ICIMOD's climate services-related activities

Through its six RPs – Adaptation and Resilience Building, Transboundary Landscapes, River Basins and Cryosphere, Atmosphere, Mountain Environment Regional Information System, and Mountain Knowledge and Action Networks – ICIMOD is piloting and monitoring innovative approaches, promoting transboundary cooperation, and meeting capacity-building needs in the region. The RPs are oriented towards integrating knowledge, orientating research into use, and delivering impacts through interventions in various sectors such as water resources management and disaster risk reduction, agriculture and food security, and ecosystem management for enhancing climate resilience. Other areas of interventions include livelihood and food security, ecotourism and ecosystem conservation, and green businesses linked to climate-smart agriculture and marketing.

ICIMOD serves as a knowledge hub for the Himalaya, Hindu Kush, and Karakoram, including the Tibetan Plateau – together known as the Third Pole because of the reserves of snow and ice the region stores. The Centre serves eight

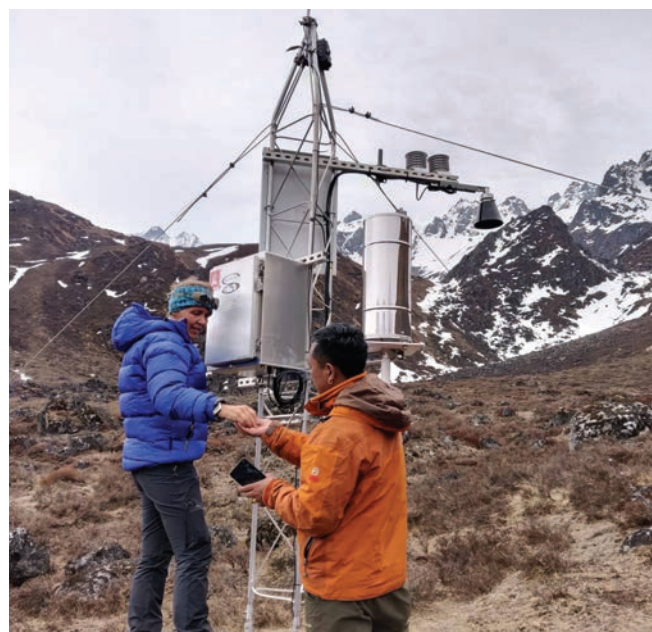
regional member countries: Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. A blend of mountain-specific climate services are being shared for mountain communities within the region. A few of ICIMOD's ongoing initiatives are described below.

### REGIONAL FLOOD INFORMATION SYSTEM IN THE HINDU KUSH HIMALAYAN REGION (HKH-HYCOS)

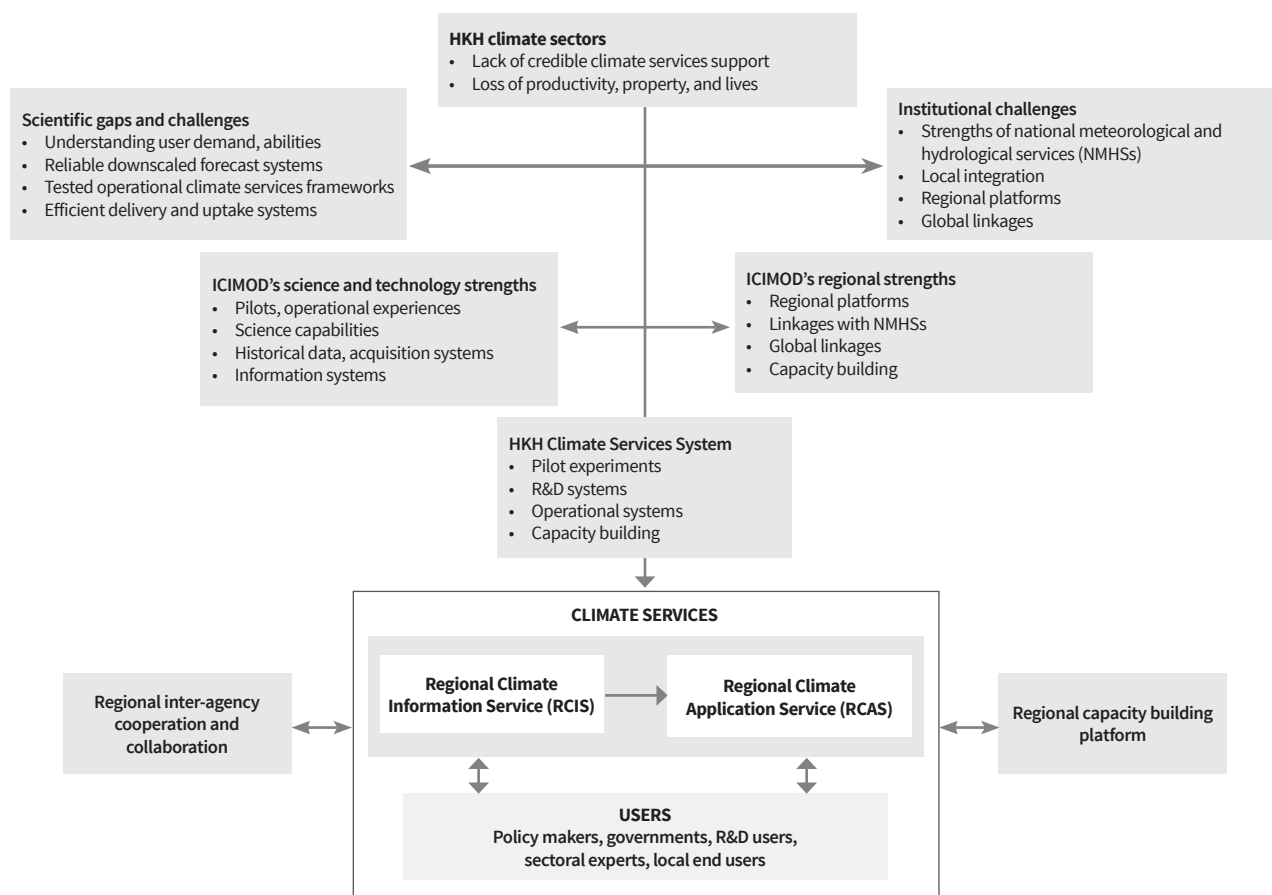
HKH-HYCOS has strengthened the hydrometeorological monitoring capacity and establishment of a regional flood information system based on state-of-the-art communication and information dissemination technology. Hydrometeorological data from Bangladesh, Bhutan, Nepal, and Pakistan are shared in real time and the regional flood outlook has been developed to support accurate forecasting and effective early warning in the region. Bangladesh, Bhutan, and Nepal have since been able to attract sizeable investments for the modernization of their hydromet networks. Activities funded through HKH-HYCOS have improved the capacity of the hydromet services to take up these projects and contributed to building climate resilience for people at risk.

### SERVIR HINDU KUSH HIMALAYA (SERVIR-HKH)

SERVIR-HKH caters to the specific needs of regional member countries in addressing different aspects of environmental degradation and climate change impacts and promotes the effective use of Earth observation and geospatial analysis for sustainable climate services. It strengthens and institutionalizes the technical capacity of various stakeholders including government decision makers and key civil society groups for improved decision making, planning, and communication. Working closely with partner institutions, SERVIR-HKH has co-developed the High Impact Weather Assessment Toolkit (HIWAT) to monitor extreme weather-based events in the HKH. A Regional Drought Monitoring and Outlook System has also been developed to reduce risks for South Asian farmers.



## ICIMOD'S ROLE IN CLIMATE SERVICES



### ASIA REGIONAL RESILIENCE TO A CHANGING CLIMATE (ARRCC)

The ARRCC programme seeks to deliver new techniques and innovative approaches to help vulnerable communities use weather warnings and forecasts to better prepare for climate-related shocks in Afghanistan, Bangladesh, Nepal, and Pakistan. This programme focuses on strengthening both national and regional development of weather and climate services across South Asia by building capacity and capability in the four countries and working across all meteorological time scales – weather, seasonal, and climate. ICIMOD in partnership with the UK National Meteorological Service has brought together the providers and users of climate information in national and regional forums to better understand their needs and gaps in climate services. It adopts a co-production approach to develop relevant climate products, including decision-support information for farmers and other stakeholders, thus fostering resilience to climate-related risks.

### VALUE CHAIN DEVELOPMENT FROM A CLIMATE CHANGE PERSPECTIVE

Climate change is expected to reduce productivity and make production more erratic in many areas of the HKH where agricultural productivity is already low and means for coping with adverse effects are limited. Climate change is a threat multiplier for smallholders: it magnifies traditional risks and leads to new sources of risks. Climate services can be a critical means of resilience building for smallholders. It is important to consider the impact of climate change – from the selection of a value chain to the design of upgrading and development of strategies – and to plan proper adaptation measures. Integrating climate information and assessing products that are less vulnerable to climate risks through a participatory approach are key steps in the development of a pro-poor value chain. ICIMOD is further engaged in co-development of gender and socially sensitive and responsive climate services to support agricultural value chains and develop capacities required to use climate services.

### For further information

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