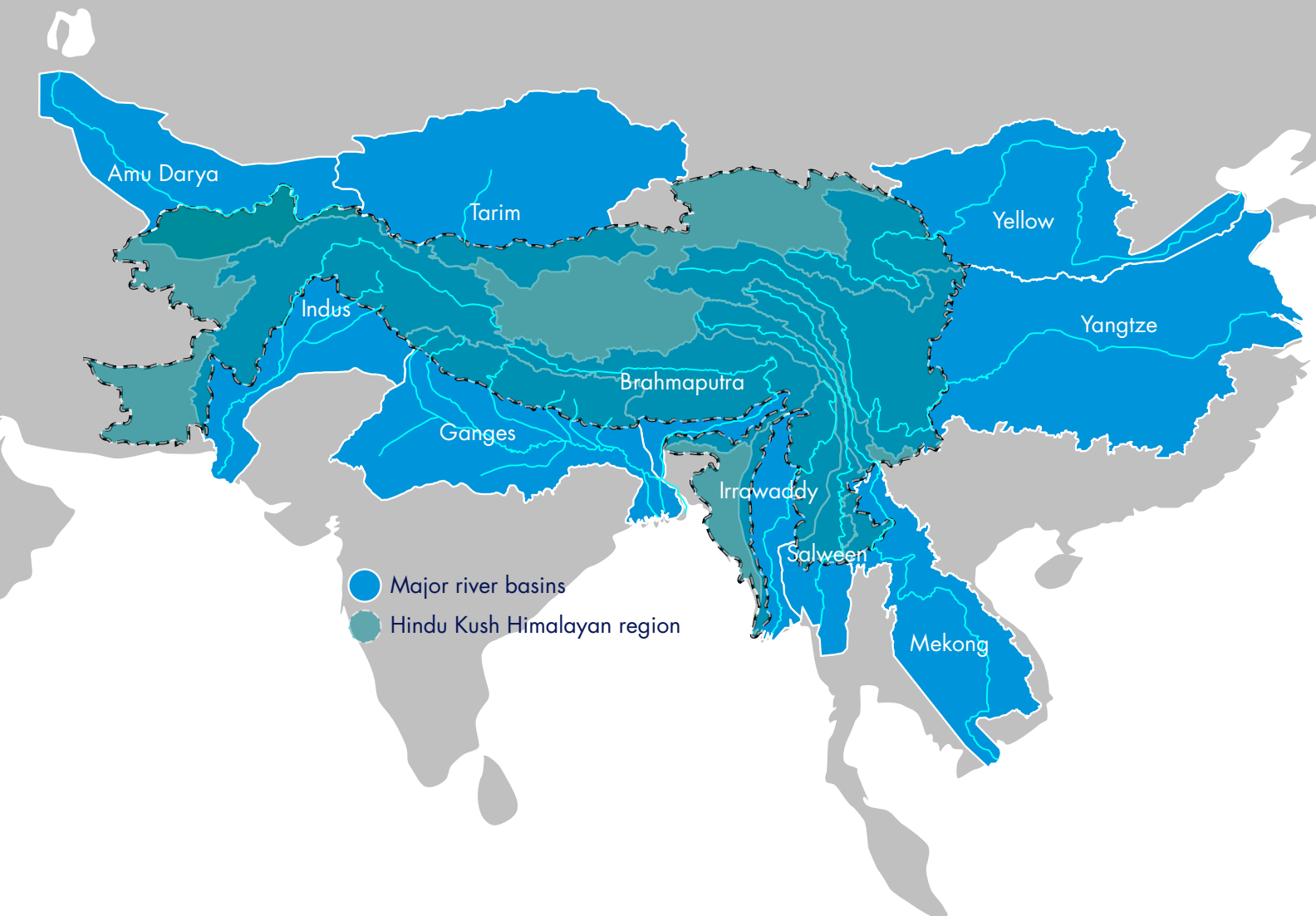




RIVER BASINS AND CRYOSPHERE



What we do

The River Basins and Cryosphere Regional Programme addresses data and knowledge gaps in water and cryosphere science in the Hindu Kush Himalaya (HKH). Through its initiatives, the programme adopts a holistic, flexible, and inclusive integrated river basin and cryosphere approach that transcends scales, borders, modalities, and disciplines in research and pilots. This approach includes managing water resources, prioritizing the sustainable use of water and land resources to enhance livelihoods, understanding the role of the cryosphere and scenarios for future water availability, improving the health of environments, and reducing water-related disaster risks in river basins.

Our initiatives

Cryosphere

HI-AWARE

HI-RISK

Indus Basin

Koshi Basin

SWaRMA

Special Projects

Contact



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CRYOSPHERE



The Cryosphere Initiative works collaboratively with partners to study the importance of snow, ice, and permafrost and their impact on downstream communities in the HKH. The initiative has established a Cryosphere Monitoring Programme (CMP) to assess cryosphere water resources, cryosphere-related disaster risks and scenarios of future water availability, and to share data and knowledge through a regional cryosphere knowledge hub, the CryoHub HKH. It works to strengthen its partner organizations' capacities to monitor the cryosphere for practical solutions and policies to better manage cryosphere water resources and cryosphere-related risks.



Cryosphere monitoring activities are categorized into three components:

- Field-based observations and monitoring
- Remote sensing-based observations and monitoring
- Modelling of cryosphere and related processes



It works continuously with its partners to strengthen their capacities and to co-produce knowledge to ensure the sustainability of its monitoring activities.



The regional cryosphere knowledge hub, CryoHub HKH, is a collaborative effort to integrate, share, and disseminate data and information to support cryosphere-related knowledge development.



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HI-AWARE



Himalayan Adaptation, Water, and Resilience (HI-AWARE) Research is one of four consortia of the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA). It conducts research and pilot interventions, and works on capacity building and policy engagement on climate resilience and adaptation in the mountains and floodplains of the Indus, Ganges, and Brahmaputra river basins. Its goal is to contribute to increasing the climate resilience and adaptive capacities of the poor and vulnerable women, men, and children living in these river basins and improving their livelihoods by using findings from its research and pilot interventions to influence policy and practice.



HI-AWARE generates knowledge and scientific evidence to address major research gaps that prevail in the Himalayan region. This is done through five inter-related research components that look at food, energy, health, urban habitats, and hazards management.



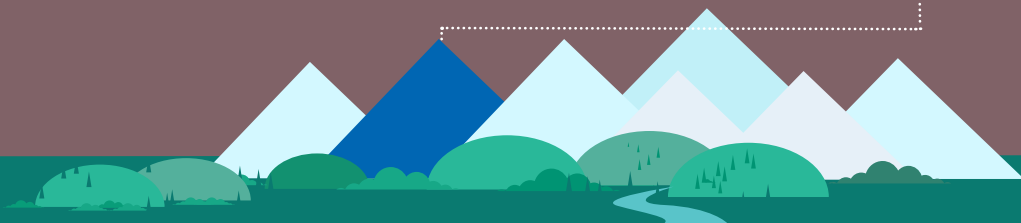
It focuses on strengthening expertise by building the capacities of selected MSc and PhD students through interdisciplinary research on climate change vulnerability, adaptation and resilience.



Research uptake is fostered by engaging with key stakeholders, practitioner, policymakers, and vulnerable communities.



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Hi-RISK



The Hi-RISK initiative aims to prevent or minimize the occurrence of water-induced disasters and their adverse impacts in the Hindu Kush Himalaya. It provides a regional platform for sharing data, information, and good practices on the management of water-induced hazards in river basins; water induced disaster risk reduction; and institutional and human capacity building for disaster risk communication, preparedness, and response.

More specifically, the HYCOS User Phase (2017–2019), a project under the Hi-RISK Initiative, focuses on 'last mile connectivity' – reaching flood vulnerable communities with early warning and knowledge products to address disaster awareness, preparedness, and the need for early action response.



Hi-RISK conducts strategic assessments of the four pillars of flood early warning systems used in Nepal with a focus on dissemination and communication.



It documents and shares case studies on current or best practices in disseminating and communicating flood early warning in Bangladesh, Bhutan, Nepal, and Pakistan.



It works with national partners – especially hydrometeorological agencies and disaster management authorities – to ensure flood early warning reaches those who need it most, taking into account gender equity and social inclusion (GESI).



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INDUS BASIN INITIATIVE



The Indus Basin Initiative conducts research and facilitates exchange of knowledge on agricultural water and hazard management. The main objective of the initiative is to improve understanding of the impact of climate change and associated changes in the cryospheric and cryo-hydrological regimes. This has improved understanding of present and future water availability and use in the basin and improved the resilience of riparian communities through sharing of drought information and early warning about upstream flood situations.



The initiative supports research institutions, governments, and civil society organizations to develop better adaptation strategies and, in turn, underpin strategic thinking and interventions for enhanced community resilience in the Indus basin.



It develops and pilots water management packages of practice and supports the Upper Indus Basin Network, several community-based flood early warning systems, a drought monitoring system, and a flood outlook in Chenab, Pakistan in collaboration with the Pakistan Meteorological Department.

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KOSHI BASIN INITIATIVE



The Koshi Basin Initiative aims to contribute to inclusive development, poverty reduction, and enhanced resilience to climate change by supporting evidence-based decision making and promoting regional cooperation. While the basin has huge potential for irrigation and hydropower development, it is also a multi-hazard environment, vulnerable to landslides, floods and glacial lake outburst floods, and droughts. The transboundary basin is also under pressure from climate change, rapid urbanization, and increasing demands on ecosystem goods and services. Poor mountain women and men are often the most vulnerable to natural disasters and the least able to adapt and respond to rapid change.



The initiative supports evidence-based policy interventions to create integrated, innovative, equitable, inclusive, and effective responses to manage river basin ecosystems and reduce poverty.



It contributes to the development of an enabling environment and strengthened regional cooperation for policy and decision makers.

It develops and tests actionable and appropriate adaptation pilots and livelihood strategies to address the increasing impacts of climate change on ecosystem goods and services at local, national, and regional scales.



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SWaRMA



Strengthening Water Resources Management in Afghanistan (SWaRMA) aims to co-create knowledge and enhance capacity for water resources management in Afghanistan. It covers tributaries and watersheds in the Kabul basin with regional linkages to neighbouring countries in the upper Indus basin. SWaRMA is a joint project with the Government of Afghanistan (Ministry of Energy and Water) and the Government of Australia, and implemented through the International Centre for Integrated Mountain Development (ICIMOD) in collaboration with the Commonwealth Scientific and Industrial Research Organization (CSIRO) and national organizations in Afghanistan.



The initiative's partners include the Ministry of Energy and Water, the Ministry of Agriculture, Irrigation and Livestock, the Ministry of Foreign Affairs, and the Afghanistan National Disaster Management Authority.



Focusing on tributaries and watersheds in the Kabul River basin, the initiative looks to increase knowledge and cooperation on water availability analysis, cryosphere monitoring, flood monitoring and early warning, water resources management, water resources planning at basin scale, water information system, and regional cooperation.

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SPECIAL PROJECTS – BRAHMAPUTRA AND ENERGY



The Brahmaputra and Energy projects focus on addressing water issues as well as studying them. They promote research, and the generation and documentation of knowledge on water and equity in the HKH. Both projects focus on reviving springs and improving access to water for domestic and agricultural purposes in the region.



Brahmaputra

Since 2014, ICIMOD has been working with the Advanced Center for Water Resources Development and Management on spring revival and springshed management. Its first spring-related research was carried out in Sindhupalchowk and Dailekh districts of Nepal. Spring revival activities were implemented in Dailekh following this research.



Energy

The special project on Energy installed 53 solar powered irrigation pumps (SPIPs) in the Terai districts of Saptari, Bara, Rautahat, and Sarlahi in Nepal from January 2015 to December 2016. The project aims to understand the demand for SPIPs under different financial schemes, the impact of SPIPs on agriculture, and benefit-sharing in hydropower projects.



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