

## Building Trust and Confidence

# Facilitating an Enabling Environment for Indus Basin-Wide Cooperation Through Technical Collaboration on Climate Change Research



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### CONTEXT

A key area where climate change is likely to have a severe impact is the cryosphere—the frozen water part of the Earth system—and dependent water supply. In the Indus Basin, shared by Afghanistan, China, India and Pakistan, a significant amount of annual flow is generated predominantly from cryospheric waters (glacial and snowmelt) in the Hindu Kush Himalaya (HKH).



The Indus Basin supports about 270 million people in one of the most water-stressed areas in the world, trending toward permanent water scarcity. Management of the basin is limited

by insufficient knowledge of its glaciated land, which totals 21,000 square kilometers and is one of the most extensive glacier-covered areas outside the polar regions.

The 18,000 Hindu Kush Himalaya glaciers feeding the basin are understudied for several reasons. The area is remote and inaccessible at 5,000 meters or more above sea level. There is a lack of conceptual models of the mountain hydro-meteorological environment, limited data exchange, and inadequate analysis of existing databases. Finally, decision makers in the basin are often disconnected from developments in the scientific community.

Without better data on glacial and snowmelt water trends, it is difficult to understand future hydrological changes driven by climate change. Researchers from the four Indus Basin countries and elsewhere have monitored and analyzed the cryosphere regions in each country but there is limited coordination among scientists, and only piecemeal cross-border initiatives. As a result, knowledge is fragmented, with data gaps hindering water policy development and implementation. Uneasy relationships among the Indus basin countries and varying levels of capacity pose additional challenges to regional cooperation for water resources management.

## APPROACH

The South Asia Water Initiative (SAWI), a trust fund administered by the World Bank, established the Indus Forum in 2013 as a subgroup of a wider regional dialogue that began six years earlier.

The Indus Forum benefitted from the Bank's leadership as an impartial knowledge broker and set itself apart from other dialogues by applying a basin-wide perspective. The forum aimed to galvanize the study of hydrology, glaciology, and climatic and socioeconomic processes at the basin level to inform decision making for sustainable water resources management. During the first Indus Forum, hosted in June 2013 in Kabul by the Government of Afghanistan, participants identified climate change research as an area for cooperation.

The second forum in January 2014 included a SAWI-funded study tour for 37 senior Indus Basin government officials, technical experts and civil society leaders to Ecuador to build capacity and knowledge to establish national and regional glacier monitoring networks. Participants visited member institutions of the Regional Adaptation to the Impact of Rapid Glacier Retreat in the Tropical Andes Project. The project was relevant for Indus countries because Andes communities depend on glacier-fed water resources for economic development and Andes countries are investing in glacier monitoring technologies to improve water management and climate change adaptation.

The 2014 study tour visited the Antisana Glacier and its monitoring stations more than 4,000 meters above sea level. Forum participants agreed to explore glacier monitoring and climate change as entry points for collaboration. Specifically, they agreed to work on coordination among water institutions within individual basin countries and to form a technical working group to study climate change impacts on the Indus Basin.

The third Indus Forum convened in March 2015 in Lahore and was hosted by the Government of Pakistan, its Water and Power Development Authority, and the Water and Environment Forum. The forum formalized a technical working group with wider participation from each basin riparian country and the World Bank, and a mandate to develop a joint research proposal on understanding climate change impacts in the Indus Basin. The technical working group initiated a joint research proposal development through virtual discussions and a scientific visit to China in June 2015.

The fourth Indus Forum was held in February 2016 in Kathmandu and organized by SAWI, International Centre for Integrated Mountain Development, and International Water Management Institute. The event included workshops to map synergies for research work and to consolidate other collaborative work such as the Upper Indus Basin Network. In October 2016, SAWI supported

a knowledge exchange study tour to the European Alps for officials from the four Indus countries and experts on climate change, glaciology and hydrology. The University of Zurich's geography department organized an information exchange between Hindu Kush Himalayan participants and Alps experts and officials about glacier monitoring.

The Indus Basin Knowledge Forum (Knowledge Forum) evolved from the Indus Forum as a strategic platform to build stronger collaboration between scientist researchers and policy makers who need data to make better decisions. The Knowledge Forum included SAWI, International Centre for Integrated Mountain Development, International Water Management Institute, and later the International Institute for Applied Systems Analysis.

In July 2017, the principal outcome of a Knowledge Forum in Colombo, Sri Lanka was a plan to strengthen Indus Basin knowledge sharing and accessibility. The following year, the Knowledge Forum was held in Laxenburg, Austria and updated participants on the plan's progress. The 2018 meeting proposed ways to foster better connections between scientists and policy makers and endorsed collaboration among researchers and funders with a shared interest in Indus basin water issues.

The fourth Knowledge Forum was held in August 2019 in Kathmandu. Participants explored pathways for impact-focused research and recognized the urgency of research collaboration among the four basin countries. SAWI supported a special session that focused on ways researchers can effectively engage with stakeholders and incorporate gender in research to enhance results.

## OUTCOMES

The dialogue process facilitated by SAWI and its development partners increased engagement on water management issues in the Indus River Basin. Over time, the dialogue expanded from a small group of 15 riparian stakeholders to meetings that regularly involved 100 people from the four basin countries, international water experts, and donor partners.

Dialogue sessions similarly expanded and tackled the multi-faceted complexities that decision makers face with integrated water management and policies. The dialogue meetings allowed participants to get to know each other, develop trust, and share information and experiences – a notable accomplishment in South Asia.

The Indus Forum fostered existing partnerships and built new ones. For example, relationships forged in the related Indus Basin Knowledge Forum process led to a 2018 agreement by China, Pakistan and Afghanistan on a joint capacity building project

on water and disaster risk management in the Upper Indus Basin (Hunza and Kunar Basins) under a Shanghai Cooperation Organization grant.

“This (Indus dialogue process) helps us to keep thinking on a broader scale and in a transboundary context, to encourage collaborations, knowledge sharing and joint activities”.

*Indus Basin Knowledge Forum participant,  
June 2018*

The groundwork for joint research was created with commitments from participants in the Indus Basin Forum and Indus Basin Knowledge Forum, interest from potential international partners, and resource mobilization by national, bilateral and international research funds. ICIMOD received a SAWI recipient-executed grant to advance the dialogue process and to institutionalize the joint research program. The grant also helped ICIMOD take on secretariat functions for the dialogue process, including fundraising, coordinating activities, and ensuring quality control of research outcomes.

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**ABOUT SAWI:** The South Asia Water Initiative (SAWI) was a multi-donor trust fund supported by the UK, Australia and Norway and administered by the World Bank. SAWI supported a portfolio of activities designed to increase regional cooperation in the management of the major Himalayan river systems in South Asia to deliver sustainable, fair, and inclusive development and climate resilience. It did this through four complementary outcome areas: strengthening awareness and knowledge on regional water issues; enhancing technical and policy capacity across the region; facilitating dialogue and participatory decision processes to build trust and confidence; and scoping and informing investment designs. SAWI's work was structured across three river basins (Indus, Ganges and Brahmaputra) and the Sundarbans, spanning Afghanistan, Bangladesh, Bhutan, China, India, Nepal and Pakistan. SAWI reports, briefs, and knowledge products are at <https://www.worldbank.org/en/programs/sawi>.