

The Indus Forum Technical Working Group meeting

Towards a joint research framework
in the Indus basin

22–23 November 2019, Dubai, United Arab Emirates

Executive summary

The ‘proposed joint research programme on understanding and assessing the impact of climate change in the Indus Basin’, alternatively envisioned as the Indus Forum, had its first working group meeting on 22–23 November 2019 in Dubai. The aim was to deliberate on the research areas and funding opportunities that can better support the joint research project. The meeting was designed to firstly revisit some of the key questions identified in a research proposal document prepared by the International Centre for Integrated Mountain Development (ICIMOD) and the World Bank, and secondly to discuss about the leads of each of the technical working groups. The meeting also deliberated and agreed on the operational mechanism of the joint research programme. The key messages from the discussions are outlined below. For further details on these key messages, please see the “Outcomes” section

KEY OUTCOMES

Similar engagements that had taken place earlier through a series of exploratory workshops had identified the potential research areas relevant to the basin. The proposed Indus Forum has taken this further and is exploring potential funding

opportunities. There is a consensus among the forum members, firstly to have ICIMOD function beyond the ambit of the agreement on the South Asia Water Initiative (SAWI); secondly, customized joint research proposals are to be submitted in order to take relevant calls. A proposal is likely to be developed for the Global Innovation Fund, which is considered an immediate funding opportunity. The operational mechanism to conduct the joint research programme was also deliberated and agreed upon in this context if the funds are secured to conduct the research.

The list of institutional and individual work package (WP) leads has been revised, which is different from the original proposed WP framework presented in the operational manual. The members of the WPs have explored areas such as collaboration among the forum institutions, intra-WP partnership, and submitting the WP leads’ and members’ profiles to the secretariat.

Cross-cutting areas like gender and socio-economic factors, as well as knowledge management, will also play crucial roles in supporting the forum’s research objectives. These would not only provide a human face to the science research areas, but also aid in identifying relevant forums and channels through which these issues could be communicated.

Introduction

Envisioned and then discussed at the inception workshop as a research proposal, the Indus Forum had been proposed as a research programme to be jointly explored by ICIMOD, the International Water Management Institute (IWMI), and SAWI. Here the proposal had highlighted three key components that explained the motivation behind the research proposal: changing climate in the cryosphere; the uncertainty brought by this in the basin; and fragmented research.

The three are interlinked in the staggered impacts that they have on the socio-economic, political, and physical components of the basin. The global warming trends in the Hindu Kush Himalaya (HKH) are likely to have a drastic impact on water sources and the communities dependent on them. The region has been under a continuous warming trend “even during the global warming hiatus...between 1998 and 2014 when global warming appeared to have slowed down” (Krishnan et al. 2019). Trends show a rise in warming, with the number of cold periods also decreasing. The cryospheric changes in the high-mountain areas of the Indus Basin, which is mostly meltwater dependent (Lutz 2016), will have similar impacts on the 268 million inhabitants who call the basin their home.

A study projects that by 2050, the basin will house some 400 million people (Laghari et al. 2012), while

there are also studies which indicate that the current models are inaccurate in projecting the future hydrology of the basin (ibid. 2016). These crucial factors are likely to have a significant impact on the basin member countries’ development agendas. The basin member countries have also been individually contributing to research on the Upper Indus within their countries. However, the body of evidence generated still presents a piecemeal picture of future scenarios in the basin.

The joint research proposal aims to increase cooperation among the four countries – Afghanistan, China, India, and Pakistan – through a systematic approach in assessing the overall physical and socio-economic components; this shall be done through coordinated research activities divided among WPs. The workshop was designed to ideate on these coordinated activities and discuss the following objectives:

1. Options to seek financial resources in order to implement the proposed joint research programme prepared by the Indus Forum Working Group
2. The need to update/modify the proposal as per potential funding opportunities
3. Decide on the operational mechanism of the Indus Forum
4. Explore ways to ensure the sustainability of the Indus Forum

Governance and structure

The joint research programme will be managed and coordinated by a programme secretariat which would be hosted by ICIMOD. For better coordination of the WPs, an institution will function as a lead coordinator. This was further put forth for deliberations at the workshop, with most of the WPs sharing the lead responsibility among a minimum of two institutions (please see Outcome No. 2).

A Steering Committee (SC) and a Review Committee (RC) have also been proposed to ensure better governance of the overall trajectory of the forum work areas and strategic activities. Both these committees will play advisory and quality review roles (refer to Annex 1: Concept Note).

The four WPs are: WP 1 – baseline observations; WP 2 – climate change scenarios; WP 3 – climate change adaptation; and WP 4 – capacity building and knowledge exchange.

Outputs of the meeting

Similar engagements that had taken place earlier through a series of exploratory workshops had identified the potential research areas relevant to the basin. The proposed Indus Forum has taken this further and is exploring potential funding opportunities. There is a consensus among the forum members, firstly to have ICIMOD designated as the forum secretariat which will function beyond the ambit of the agreement on SAWI; secondly, customized joint research proposals are to be submitted in order to take relevant calls. A proposal is likely to be developed for the Global Innovation Fund, which is considered an immediate funding opportunity.

There are very many examples of combining research expertise within platforms like the Indus Basin Knowledge Forum. As noted in the opening remarks, when ICIMOD and IWMI had both explored this through a joint conference in February 2016,¹ the participants had emphasized on the need to collate research efforts and coordinate on long-term research objectives. These research priorities have not changed, which indicates that collaboration on these work areas among the basin member countries can be strengthened.

Building on these discussions, the proposed joint programme aims to develop a framework for integrated basin-wide water resource assessment. As identified in the opening session of the forum, this is largely due to the adverse impacts of climate change on the cryosphere of the basin. In order to sustainably manage the increasing sectoral demands on water resources, these impacts need to be better understood. Although significant gaps remain in understanding these changes, one participant stressed on combining the efforts of government and research institutions. The potential areas for collaboration were further explored in the sessions that followed.

Governance needs

It is essential that before deciding on the working modality of the forum, basic governmental decisions have to be arrived at. Thus, a session on the first day

focused on revisiting the working group structure and proposed an operational framework for the forum. The unanimous decision among the forum members was that ICIMOD would function as the secretariat head. Along with this, the developed operational manual that documents the essential functions and meeting modalities of the forum was also accepted with some deliberations on the WP leads and lead institutions.

Funding mechanisms

In another session on the first day, the forum members explored potential funding mechanisms. A number of available sources were presented, ranging from well-established funding agencies like USAID, UK Aid, and Sida, to funds that are set up to primarily focus on climate change adaptation. The following topics on funding were discussed: Adaptation Fund; Green Climate Change Alliance and the Green Climate Fund. During the discussions, the members pointed out that applying to agencies like USAID may not be ideal, given its parameters on assessing cost-effective, innovation-driven solutions. Since the forum is largely oriented towards a research partnership approach, many suggested that applying to the Global Innovation Fund would be more relevant.

As regards the final decision on funding opportunities, the members authorized the secretariat to customize joint research proposals and invite the relevant parties to submit these. The secretariat is committed to submit proposals even after contract maturity and can also explore other opportunities.

The list of institutional and individual WP leads has been revised, which is different from the original proposed WP framework presented in the operational manual. The members of the WPs have explored areas such as collaboration among the forum institutions, intra-WP partnership, and submitting the WP leads' and members' profiles to the secretariat. The presentations by the WPs also focused on exploring funding opportunities.

As envisioned in the operational structure, the WPs make up the foundation of the activities being carried out by the forum. The forum's objectives will be achieved through individual research areas which each of the working group further deliberated on during the focused sessions on the list of WP leads to decide on the individuals and institutions that would be added or revised based on the members' willingness. There was a discussion on ensuring balance in the representation of leads from all

¹ https://www.iwmi.cgiar.org/Publications/Other/PDF/indus_conference_report_final.pdf

Work Package number	Lead Coordinators of WPs (institutions and focal points)	Sub-WPs
Work Package 1	Baseline observations <ul style="list-style-type: none"> Shakil Romshoo, Kashmir University, India Attaullah Shah, Karakorum International University, Pakistan 	1.1 Hydromet data analysis 1.2 Benchmark glaciers 1.3 Streamflow partitioning
Work Package 2	Climate change scenarios <ul style="list-style-type: none"> Muhammad Hanif, Chief Meteorologist, Pakistan Meteorological Department Zhang Yinsheng, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, China A.P. Dimri, Professor, Jawaharlal Nehru University, India 	2.1 High-resolution climate change predictions 2.2 Glacio-hydrological modelling
Work Package 3	Climate change adaptation <ul style="list-style-type: none"> Shresth Tayal, The Energy and Resource Institute, India Tayib Bromand, Water Resources Department, Ministry of Energy and Water, Afghanistan 	3.1 Water, food, energy impacts 3.2 Adaptation strategies
Work Package 4	Capacity building and knowledge exchange <ul style="list-style-type: none"> Jiang Tong, Chinese Academy of Sciences, China 	4.1 Master's course 4.2 Specialized trainings

the basin countries. Furthermore, the WPs also highlighted potential gaps in the proposal that should be filled to comply with the funding needs.

The list of revised leads is shown in the table above. (*Please see Annex 3 for a complete list of working group members).

During the discussions, some members from Afghanistan pointed out the need for having an equitable distribution of institutions and focal points to lead the WPs. For this, the Water Resources Department under the Ministry of Energy and Water, Afghanistan, was nominated as co-lead for WP 3. Similarly, the Institute of Tibetan Plateau Research was suggested as co-lead for WP 2.

Funding, innovation, and synergy

In the breakout session, each of the WPs identified the areas of innovation that would better strengthen the research objectives of their respective WPs. These were not only identified in terms of how the new areas of research could be incorporated into the WPs, but also in terms of how each group could identify further opportunities for transboundary and interdisciplinary collaborations.

WP 1: BASELINE OBSERVATIONS

Subgroups: WP 1.1: Statistical analysis of the past hydro-meteorological, biophysical, and social data; WP 1.2: Establishment of long-term benchmark

glacier monitoring sites; and WP 1.3: Streamflow partitioning using isotope fingerprinting and modelling.

WP 1, which consisted of three subgroups, highlighted that institutional funding mechanisms like the secretariat of the Alliance of International Science Organizations (ANSO) and the Ministry of Science and Technology, China, could be tapped as potential funding sources. In terms of gaps, the group identified that funding from UNDP has existed in the area of exploring glacial lake outburst floods in Gilgit-Baltistan (UNPO 2019). A few areas of innovation suggested by the group were: strengthening of the early warning system network in the Upper Indus; automatic telemetry data collection; and integration of all glaciological, meteorological, and hydrological process, along with socio-economic factors, to be used in a modelling framework in order to guide policy and decision-making.

Research and potential funding opportunities

- Upscaling of the existing early warning systems and strengthening present networks and observation systems
- Local/regional database development that can be utilized for planning or vulnerability assessment
- Standardization of databases (baseline and future projections) across the basin countries
- Linking with media outlets to highlight issues

and common concerns on different challenges within the basin

- Linkage of project outcomes to basin-wide livelihood strategies

WP 2: CLIMATE CHANGE SCENARIOS

Subgroups: WP 2.1: Future high-resolution climate change projections; and WP 2.2: Glacier-hydrological modelling under climate change projections.

WP 2 identified funding bodies like GIZ and the Asian Development Bank, as well as funding agencies that support activities specifically related to environment, and projects which focus on mountains, like the Indian National Mission on Himalayan Studies. The group proposed that an innovative area of research that needed to be looked at was Shared Socio-economic Pathways (SSPs), and linking them to the need of policy-relevant intervention areas in the basin countries.

Research and potential funding opportunities

- Policy-relevant research that feeds into understanding the applicability of frameworks like the SSPs
- Understanding the role of melt and rainwater contribution and its impacts on community-driven livelihoods
- Development of capacity-building exercises – on modelling and climate change impacts, among other topics – within the basin either as independent programmes or as part of on-the-job trainings

WP 3: CLIMATE CHANGE ADAPTATION

Subgroups: WP 3.1: Assessing the impacts of plausible future scenarios of cryosphere and climate in the water–energy–food (WEF) nexus; and WP 3.2: Utilizing insights from observations and simulations to develop robust adaptation strategies.

WP 3 identified larger multilateral funding agencies like the Green Climate Fund, the Department for International Development, and the International Development Research Centre as potential funding sources. In terms of innovative research areas, the group thought that it would be useful to conduct perception-based surveys in order to better understand the climate adaptation strategies being adopted by the basin countries. This could be done through a combination of top-down and bottom-up approaches wherein present and future climatic

scenarios could be merged with activities such as stakeholder consultation and identification of traditional knowledge.

Research and potential funding opportunities

- Proposal to work on projects that take the ecosystem into account
- Integrated modelling to understand sectoral demands on the WEF nexus
- Building a climate-risk index for the basin
- Understanding of traditional knowledge and the role of community networks

WP 4: CAPACITY BUILDING AND KNOWLEDGE EXCHANGE

Subgroups: WP 2.1: Master's and PhD courses; and WP 2.2: Short-term training courses.

Along with the standard multilateral agencies, WP 4 also identified organizations such as Azim Premji Foundation and Aga Khan Foundation which fund training the trainer programmes and make other capacity building interventions. The group also pointed out that prior to reaching out for funds, it would be important for the group to understand the kinds of desired capacity building programmes that the forum wants to highlight. An innovative input came in the form of a proposal to develop a virtual centre of excellence where the curricula would be linked to the Sustainable Development Goals.

Research and potential funding opportunities

- Chinese research institutions can host master's and PhD students for conducting research and training on the Indus over a longer period (three years)
- Short-term (two weeks) training courses offered by Chinese institutions
- Potential to develop a project on engaging and training affected communities in the basin.

INTRA-WP AND COUNTRY COLLABORATION

One of the key areas that all groups highlighted in terms of promoting collaborative practices was to set up means through which results could be actively shared among the WPs and the institutions of the member countries. Besides, the lead of WP 4 suggested investing in student networks where early-career researchers could participate in the research activities. Other suggestions were to identify neutral platforms like ICIMOD and IWMI as meeting areas

for knowledge sharing and collaboration.

Cross-cutting areas like gender and socio-economic factors, as well as knowledge management, will also play crucial roles in supporting the forum's research objectives. These would not only provide a human face to the science research areas, but also aid in identifying relevant forums and channels through which these issues could be communicated.

GENDER AND SOCIO-ECONOMIC FACTORS

A focused session on gender highlighted how the ongoing research within the basin, although important in terms of science, needed to incorporate gender as a socio-economic component into the research plan. Citing the example of pilot interventions carried out by ICIMOD in Gilgit-Baltistan, the presenter underlined that the pilot has shown that targeted poverty alleviation strategies are effective means through which women and their issues can become part of the research plan.

The pilot intervention is two-fold in nature – it focuses on increasing the size of arable land in the intervention area, and also accommodates women's cooperatives in the pilot. Its success has been in how women farmers have now become increasingly part of the decision-making process in terms of overall farming activities.

Furthermore, as explored in some of the later sessions, gender as a cross-cutting component of the forum's research activities would be crucial in bringing in the human aspect to research. One forum participant pointed out that while focusing on gendered and societal impacts of climate change, one could also think of interlinked areas of health and migration, and how local knowledge is being impacted. A similar discussion had also taken place during the Fourth Indus Basin Knowledge Forum, where health had been identified as a potential area that researchers could focus on incorporating. Another participant remarked that areas in the Gilgit region were under multiple forces of change due to changing socio-economic conditions, i.e. while some were forced to migrate to larger cities in search of employment, others from a higher income background were able to invest in businesses catering to the growing demands of the tourism industry.

KNOWLEDGE MANAGEMENT AND COMMUNICATION, AND IDENTIFYING CHANNELS FOR OUTREACH

In another focused session, the participants were familiarized with the need for a communication strategy. Although the forum is in its nascent stage,

the presenter encouraged the members to think of the key communication needs of the forum; this would entail focused discussions: firstly on identifying the “elevator pitch” of the forum; and then supporting it by developing key messages.

Elevator pitch would be a condensed objective of what the Indus Forum wants to achieve. Key messages are statements that support the elevator pitch and which ensure that the findings are disseminated in a concise manner.

The need to think about a communications strategy arises from recognizing the importance of ensuring a cohesive and consistent level of messaging from the forum. In order for the forum to incorporate the communication strategy into its research plan, the working groups would have to further discuss and agree on an internal and external communication strategy. While the former would maintain internal communication between the working groups to guarantee transparency and promote collaboration, the latter would be the outward face of the forum through which its members would publicize research findings.

A key area that would equally be supported by the communication and research components of the forum would be Research-into-Use – RiU (Harvey and Van Epp 2017). RiU makes sure that there is a self-assessing mechanism in place built into the research plan that judges the effectivity of the research being conducted. This also prompts researchers to think about research uptake and ask important questions on the value of their findings.

Action areas

To reiterate, a few key decisions were made during the forum which would need appropriate coordination by the secretariat (ICIMOD). These decisions were:

- All members mandated ICIMOD to host the secretariat of the Indus Forum
- The members authorized the secretariat to customize joint research proposals and invite the relevant parties to submit these.
- The WP leads mandated the secretariat to use their profiles and names of their organizations where necessary while applying for funds.
- The working group endorsed the operational manual and accepted the feedback that can be put to use after funding is secured.
- The secretariat is committed to submit proposals to different funding agencies after contract maturity.
- The working group also revisited the list of WP leads as many of them had either retired from their services or been inactive in the forum.

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