

# First annual meeting of the Upper Indus Basin Network–Pakistan Chapter

30–31 January 2020  
Islamabad, Pakistan

## Executive summary

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The International Centre for Integrated Mountain Development (ICIMOD) organized the first general meeting of the Upper Indus Basin Network–Pakistan Chapter (UIBN-PC) at Islamabad during 30–31 January 2020. The meeting was chaired by Muhammad Riaz, Coordinator, UIBN-PC, with support from Hina Lotia, Co-coordinator, UIBN-PC, and Nisar Memon, Advisor, UIBN-PC. It was attended by more than 90 representatives from federal and provincial institutions, the academia, and NGOs. Ahmad Kamal, Chairman, Federal Flood Commission (FFC), Pakistan, Khalid Mohtadullah, Chair of the regional UIBN, and Shozab Abbas, Director General of Foreign Office, Pakistan, were the guests of honour during the inaugural session.

This was the first general meeting since the birth of the Pakistan Chapter in November 2018. The objectives of the meeting were the following: expanding and nurturing an inclusive network through new memberships and bringing in more organizations under each Technical Working Group (TWG); enhancing the effectiveness of the UIBN-PC through policy targeted plans of the TWGs in line

with the Theory of Change (ToC); and preparing for the regional UIBN meeting.

Day one of the meeting saw technical presentations from the leads and co-leads of the TWGs, group work on future action plans, and deliberations on preparations for the regional UIBN meetings as well as on the sustainability of the network. During the first half of the second day, the participants learnt about the process of achieving the objectives of the UIBN-PC keeping in view the Theory of Change; while during the second half, all the TWGs developed their future action plans using the Theory of Change.

The meeting was deemed successful in terms of achieving its objectives. The key outcomes were the expansion of the UIBN-PC through inclusion of new members in all the TWGs with women too being represented well; the meeting also saw the preparation of the future working plans of the TWGs in line with the objectives of the UIBN-PC by applying the Theory of Change.

# Proceedings of Day 1

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## Opening session

### Welcome remarks

#### a. Muhammad Riaz, PMD/Coordinator of UIBN-PC

The Upper Indus Basin Monitoring Working Group was formed in 2012 mainly to build resilience to climate change impacts. Since the formation of this working group, the Pakistan Meteorological Department (PMD) has been part of it. This working group was then renamed as the Upper Indus Basin Network at Passu, Hunza, Gilgit-Baltistan, in April 2014 during a historic field visit organized by ICIMOD with representatives from the federal and provincial governments. The newly shaped network had six TWGs working in different domains and consisting of members from national and international organizations operating in the Upper Indus Basin (UIB).

The UIBN remained focused on Pakistan until 2018, when the network was regionalized and country chapters were formed. The UIBN-Pakistan Chapter was established in November 2018.

As the Indus Basin meets 96 per cent of the irrigation water requirement of Pakistan, special focus has to be paid to the area. The phenomenon of climate change has led to fluctuations in weather patterns, resulting in disasters like the 2010 flood. All the six TWGs are very relevant and have been formed to enter into collaborations on issues related to the UIB. These TWGs will present studies on climate change and its impacts on the environment, hydrology, and the cryosphere; they will look into natural disasters and hazards, and come up with relevant adaptation measures. It is hoped that this large gathering here today will benefit from the different sessions and that the inputs provided will enhance the progress of the Pakistan Chapter; these inputs will be shared at the regional meeting in Kathmandu.

#### b. Ghulam Rasul, Regional Programme Manager, MENRIS, ICIMOD

The most important natural resource of a country is water. The largest national resource of a country is water. However, it's water that is the first and

foremost victim of climate change and this disturbs the other elements that are required to sustain life on earth. The UIB is cryosphere of Pakistan which has been disturbed by climate change. In April 2014, a mission of experts from national and international agencies visited Gilgit-Baltistan where the UIBN was created. This field mission used to visit glaciers, riverbanks, farms, etc. during the day and have great deliberations in the evening. Based on these deliberations, six TWGs were formed. These TWGs are supposed to share updates on the progress achieved in scientific research since the last country chapter meeting. This is the only basin in the world where six TWGs are working in different domains. The academia can play a vital role in these research areas. The Pakistan Chapter is well ahead of other country chapters in terms of finalizing the chapter membership and structure. It is hoped that it will keep this legacy in the future too.

The journey of UIBN: Observations by Abdul Wahid Jasra, ICIMOD, and Ajaz Ali, ICIMOD It has been a very long journey since 2012, when the Upper Indus Basin Technical Working Group came into being with three members – the Water and Power Development Authority (WAPDA), the Pakistan Meteorological Department (PMD), and the University of Bonn. This working group had a series of meetings for the next couple of years in order to discuss data sharing. Initially, it seemed that it was failing. So, to revive this group, in April 2014, a historic UIB field visit was organized by ICIMOD with the support and ownership of federal and provincial governments; some 60 to 70 national and international scientists were part of this visit. It was during this field visit that the UIB Network was created at Passu. And this network remained confined to Pakistan for the next 4 years. In 2018, it was regionalized to include all the four countries sharing the basin. Moving forward, a decision was taken to have more country chapters, like the Pakistan Chapter which was established in November 2018.

### An overview of the UIBN governance structure

Ajaz Ali, ICIMOD

The following were the key highlights of the presentation:

1. The evolution of UIB-N took place in several stages: the formation of the UIB Monitoring Group in 2012; the creation of UIBN at Passu in April 2014; the collaboration of the UIBN with

the Indus Forum for the annual Indus Basin Knowledge Forum; the regionalization of the UIBN in April 2018; the creation of the UIBN Pakistan and Afghanistan chapters in 2018; the formation of the China and India chapters in 2019; and the adaptation of the Governance Framework for UIBN in January 2019.

2. The major objectives of the UIBN are: regional cooperation for improved understanding; collaborations to formulate evidence-based regional policies; building upstream-downstream linkages; establishing solutions in the areas of sustainable water resources and water-induced hazard management; and capacity building.
3. The network principally is people centric, value neutral, voluntary, and regional.
4. The UIBN, as a regional platform, has four country chapter. There will be annual meetings of stakeholders and biannual meetings of the Regional Strategic Committee (RSC).
5. The Regional Strategic Committee has 11 members and six advisors.
6. Each country chapter consists of 17 members, including two RSC members, 12 leads and co-leads, one advisor, one ICIMOD representative, and one representative from another international organization.
7. The regional UIBN Annual Meeting (RUAM) will be attended by 51 participants.
8. The governance framework also lists out the criteria for entry and exit of members, and their terms of references.

## **Objectives of the UIBN-PC meeting, and overall recap**

**Hina Lotia**, Co-coordinator, UIBN-PC

The Upper Indus Basin Pakistan Chapter is multisectoral in nature as it encompasses themes such as gender, energy, water, food, and land resources. While creating a network is important, what holds more significance is its proper functioning and sustenance. The following were the key objectives of the UIBN-PC meeting;

1. To expand and nurture an inclusive network: expanding the membership of the network; bringing in more organizations under each TWG; and making it Gender Inclusive

2. Enhancing the effectiveness of the UIBN-PC through policy targeted plans of the TWGs, in line with the ToC
3. Preparing for the Regional Forum Meeting:
  - Encapsulate the technical progress of each country chapter
  - Identify the areas of cooperation between riparian countries

Till now, five meetings the UIBN have been held. The first meeting was based on establishing a strategic committee that could define the terms and regulations of the network. The second meeting pondered on whether the terms and conditions devised and defined in the previous meeting were appropriate. The third meeting was held in Gilgit and was supported by the Karakoram International university (KIU) and the Asia Foundation. It focused on evaluating the technical progress of all the thematic groups that are a part of the network. The fourth UIBN meeting was hosted by the PMD and it shed light on the progress of the TWGs which was to be shared with the RSC, and figured out the gaps that needed to be filled. The fifth meeting lay emphasis on the strengths and skills of the UIBN members and focused on the actions that ought to be taken towards making UIBN a self-sustaining network.

The network is governed by a strategic committee consisting of Coordinator (Muhammad Riza, DG-PMD), Co-coordinator (Hina Lotia of Lead-Pakistan), and advisors (Nisar Memon and Khalid Mohtadullah). Each TWG has a lead and a co-lead who are mostly from government institutions.

## **Keynote remarks**

**Khalid Mohtadullah**, Chair, UIBN

The Pakistan Chapter's performance has been better than that of the other three riparian countries sharing the Indus basin. This success story could not have been achieved without the continuous support of certain vital organizations. The following points were the cornerstones on which the UIBN was founded:

1. On why the UIB is important;
2. On why a more vigorous cooperation between different institutions is needed for the effective working of the UIBN; and
3. On why regional cooperation is necessary.

Pakistan is the most dependent on the water resources of the Indus Basin. It also has one of the largest and contiguous irrigation systems of the world. Indeed, Pakistan can be considered to be a water- and agriculture-based economy. However, the current per capita annual availability of water in the country is insufficient to meet the requirements of a growing population. Thus, there is a dire need to enhance the productivity and sustainability of the water resources in order to meet the rising demand, especially in a context where the population is predicted to rise by 50 per cent by 2025.

Meanwhile, more research is needed on the impacts of global warming so that energy and other critical issues can be tackled effectively. The hydro-electric potential of Pakistan should be exploited to its maximum but in a rational way in order to solve the problem of electricity shortage in the country.

Collaborations between different organizations are also crucial. And any venture ought to be gender equal and socially inclusive to overcome funding constraints.

## Opening remarks

### a. Ahmad Kamal, FFC

The Federal Flood Commission (FFC) is new to the UIBN and it hopes to learn from today's deliberations and discussions. The FFC is currently developing an implementation framework for Pakistan's National Water Policy. The World Bank intends to develop a large-scale multi-stakeholder group in the water sector that involves 14 countries, including Pakistan. The UIBN-PC can also approach the World Bank and link the network with this proposed large-scale multi-stakeholder group.

The major portion of surface water in the Indus River Basin System comes from the UIB. Last year, 1.6–1.7 million acre feet (MAF) of water was received in the reservoirs but this year the figure is 6.4 MAF, mainly due to massive snowfall in the catchment area. The UIBN-PC is a forum where when individual countries share their situation, a better idea emerges of the overall regional situation.

There are areas related to climate change and its impacts that need to be included in the implementation framework for the national water policy; these are also linked to the UIBN-PC. Thus, the FFC would request the sharing of the recommendations of today's gathering. The FFC would also incorporate the UIBN structure into the

National Water Policy implementation framework. The UIBN-PC can be an advisory forum for the FFC on issues related to water and disaster management in the country.

### b. Syed Shozab Abbas, Foreign Office

Pakistan can be steered out of its stressful water and energy situation through consistent efforts. One component that has been missing in our research is the aspect of why the percentage of water has been going down despite the plentiful water resources that we have. Perhaps this is due to lack of effective management of this valuable resource. Managing water resources effectively and keeping control on the population size are inevitable requisites to combating the current dilemma. We need to sensitize people about their improper attitude towards using this source. Pakistan needs better water storage strategies that include building dams and reservoirs but at the same time, promoting practices like rooftop rainwater harvesting. If we look along the western ranges across Punjab, every summer it produces gushes of water but it is not made use of.

Besides, research on the transboundary relations of Pakistan in the context of the Indus Basin should be given prime importance and should include political and geospatial perspectives. One of the core problems that we need to work hard on is procrastination, i.e. we think too late about the questions that should have clicked in our minds earlier. Solutions to our problems are always injected and imposed on us from outside and we don't focus on grooming our capacity to devise solutions by ourselves.

We need to come closer together and collaborate in order to manage these issues. The enthusiasm of the researchers, officials and young people will encourage people from the four countries to probe into these fundamental queries which are vital to our existence.

## Technical session

Chaired by Syed Shozab Abbas, Foreign Office

### TECHNICAL WORKING GROUP-1

## Data collection, quality, and sharing

Furrukh Bashir, PMD

The following were the key messages from his presentation:

### TECHNICAL PROGRESS

The Indus basin meets 96 per cent of the irrigation water requirement of Pakistan; however, due to the increase in population, the number of mouths is increasing, while water availability is decreasing.

Climate change is evident globally and coordinated efforts are required at the national/provincial and local levels.

TWG-1 has identified free data sets which can support the TWGs in answering research questions 1-5 and 9. The details are below:

- Research question-1: What were the climatic trends and variability in the basin in the past, and how will they be in the future?
  - Reanalysis data sets
    - Climate Forecast System Reanalysis (CFSR)
    - ERA-15
    - ERA-Interim
    - JRA-25, JRA-55
    - NASA MERRA
    - NCEP Reanalysis (R2)
  - Climatic indices
    - Atlantic Multi-decadal Oscillation (AMO)
    - North Atlantic Oscillation (NAO) Index
    - MJO: Madden-Julian Oscillation Diagnostics
    - Multivariate ENSO Index
    - Nino SST Indices (Nino 1+2, 3, 3.4, 4; ONI and TNI)
    - Pacific Decadal Oscillation (PDO)
- In situ observations
  - Observatories and AWS (PMD)
  - DCP and River Gauges (WAPDA)
- Gridded data sets
  - Global Historical Climate Network (GHCN-Daily) based on WMO Data
  - NOAA Merged Land Ocean Global Surface Temperature Analysis Data Set (NOAAGlobalTemp)
  - APHRODITE's (Asian Precipitation – Highly-Resolved Observational Data Integration Towards Evaluation) daily gridded precipitation (1951 onwards)
  - CMAP: CPC Merged Analysis of Precipitation
  - CPC Unified Gauge-Based Analysis of Global Daily Precipitation
  - CRU TS Gridded precipitation and other meteorological variables since 1901
  - Global surface temperatures: BEST: Berkeley Earth Surface Temperatures (1901-2020)
- Research question-2: What is the state of the various cryosphere components (glacier, snow, permafrost), how are they changing with time, and how will they change in the future under climate change?
  - Global Land Ice Measurements from Space (GLIMS)
  - Randolph Glacier Inventory (RGI 6.0) supplemental to GLIMS
  - World Glacier Inventory (WGI) by the NSIDC
  - Central Karakoram National Park (CKNP) Glacier Inventory by EV-K2-CNR
  - Glacier Inventory of Pakistan (Space and Upper Atmosphere Research Commission (SUPARCO) )
  - Glaciers in the Hindu Kush Himalayas (ICIMOD)
  - Glacial Lakes Inventory of Pakistan (GLOF Project)

- Research question-3: How can the present observation system be strengthened to support the previous questions?
  - The Observational Network (Observatories and AWS of PMD and DCP, and River Gauges of WAPDA) is continuously growing
- Research question-4: How can the effectiveness of data collection, quality control, and dissemination at national and regional levels be enhanced?
  - PMD provides data through its website (<http://www.pmd.gov.pk/index-old.html>) on daily temperature, relative humidity, wind speed, wind direction, pressure, atmospheric conditions, clouds, precipitation (snowfall/rainfall)
- Research question-5: How will climate change and the cryosphere dynamics impact water availability in the future?
  - It can be done using weekly snow cover information collected from gridded satellite-based data from Northern Pakistan (sq. km)
- Research question-9: What are the natural hazard hotspots, and how is vulnerability changing?
  - Inventory: Glacial Lakes, Landslides, Mudslides, other Hotspots

- Shishper Glacier Surge and GLOF
- Seismic activity

#### FUTURE WORKING PLANS

- TWG-1 has aligned its future working plan with three national policies:
  - Under the Climate Change Policy of Pakistan, the area of future work is on “development of observational network”
  - Under the National Water Policy, the area of future work is on “data quality and standardization”
  - Under the National Food Security Policy, the area of future work is on “data sharing and dissemination”
- Future areas of work:
  - Criteria for AWS at high altitudes
  - Data quality issues in terms of authenticity, credibility, and comparability
  - Data sharing issues between departments
  - Establishing the structure of a common database

Questions	Answers
What is the relationship between present climate trends, past trends, and monsoon conditions?	As each basin of Indus has its own dynamics, we need to install more observatories. The currently available data sets are on the PMD website.
What is the state of the cryosphere in the Indus Basin? How does climate change affect the dynamics of the cryosphere?	An early inventory has indicated the number of glaciers and glacial lakes; however, there is a need to update the inventory of glaciers in Pakistan.
How can the present observatory station be strengthened?	The PMD has decided to install 50 more such stations. Similarly, WAPDA is also planning to install new observatories.
How can the quality of data be enhanced?	A standardized mechanism for installation of observatories and data collection should be devised.
There is a big volume of data that is available. What's the quality of that data and how can it be integrated with climate change scenarios?	Data is open to different climatic parameters. It indeed has quality and we are developing our own data sets. While there's Enough knowledge is available but more is required.
A common data format is required to establish workflow. How can the authenticity and compatibility of data be ensured?	TWG-1 is planning to make a common data format for academics.

## TECHNICAL WORKING GROUP-2

### Climate change and variability in the Upper Indus basin

Muhammad Tahir Khan, PMD

The following were the key points of his presentation:

#### TECHNICAL PROGRESS

These were the research studies conducted during the reporting period which were jointly funded by the Pakistan Science Foundation (PSF) and the National Natural Science Foundation of China (NSFC):

- Interaction of the Westerlies with the Monsoon Systems in the Upper Indus Basin and Its Possible Impact on Water Resources
- Projection and Attribution of the Streamflow Composition at Mountain Rivers in China and Pakistan (Chitral)
- The Relationship of Precipitation and Temperature with Altitude/Elevation

The activities during the reporting period included:

- Visit of the climate experts to Gilgit-Baltistan and the Glacial Region of Khyber Pakhtunkhwa
- New data monitoring stations installed in Gilgit-Baltistan and Khyber Pakhtunkhwa

#### FUTURE WORKING PLANS

The following are the future working studies to be conducted by TWG-2:

- The relationship of precipitation and temperature with altitude/elevation
- East-west and north-south variations in climate, climate extremes, and climate extreme events
- Identification of black carbon deposition sites and monitoring them to study their impacts

#### Goal 1: Relationship of precipitation and temperature with altitude/elevation (for the year 2020)

Key action steps	Timeline	Expected outcomes	Data source and evaluation methodology	Person/area responsible	Comments
1. Data collection (completed)		Improved understanding about the changes in temperature and precipitation at different elevations that will help to better assess the future of our glaciers	WAPDA and PMD Statistical trend analysis with the help of widely used efficient techniques	Zia Hashmi (Global Change Impact Studies Centre – GCISC)	Comments are optional
2. Quality control of the data (completed)					
3. Analysis of the data (by April 2020)					
4. Developing a research paper draft (by June 2020)					

#### Questions/Comments

#### Answers

What's the influence of atmospheric effect on water resources?	No work has been done in this sector up till now SPARCO is contributing to this sector of the study
The GCISC has conducted a study on black carbon. That should also be reflected in TWG-3.	Agreed
Gilgit-Baltistan Environmental Protection Agency and provincial water departments have done good work on air pollution	They will be invited to TWG-3

## Cryosphere monitoring and modelling

Adnan Shafique Rana, PMD

The following were the key points of the presentation:

### TECHNICAL PROGRESS

The field activities during the current reporting period are:

- Installation and maintenance of hydro-meteorological equipment by the PMD
- Vulnerability assessment of potentially dangerous glacier lakes revealed 33 dangerous glacial lakes in the Gilgit-Baltistan and Chitral region.
- The monitoring of the Shishper Glacier surge and the probability of glacial lake outburst was carried out by the PMD, the Aga Khan Agency for Habitat (AKAH), KIU, and the Gilgit-Baltistan Disaster Management Authority (GBDMA) in coordination with the relevant stakeholders and the district government
- Monitoring and physical assessment of the Badswat Glacier. AKAH is also investigating the vulnerability level of the Badswat Glacier.
- Assessment of GLOF event in the Golain Valley, Chitral (July 2019)
- Snout and ablation monitoring through field surveys at various glaciers under the WB project continues to be carried out by WAPDA
- Observation of permafrost at Deosai is being undertaken by WAPDA in collaboration with Institute of Tibetan Plateau Research (ITPR), China

- Upscaling of two community-based early warning systems and handing them over to the GBDMA in Passu and Sherqilla (AKAH)
- Monitoring by AKAH of eight glaciers (four in Gilgit and four in Chitral) that have been showing frequent fluctuations
- Inventory preparation of glacial and snowmelt irrigation systems in the Hunza Basin is in its final stages (NARC)

The research activities during the current reporting period are:

- Two research projects by the PMD on glacier and future water resource assessment are under way, in collaboration with the ITP, China Meteorological Administration, and Xinjian Institute of Ecology and Geography; this is funded by the PSF. Specifically, these two projects are:
  - Interaction of the Westerlies with the Summer Monsoon in the UIB and Its Impacts on Water Resources
  - Projection and Attribution of Streamflow Composition at Mountain Rivers in China and Pakistan
- COMSATS (Abbottabad) is carrying out a research project with the University of Yunnan on the impacts of climate change on the glacier merit in the Hunza Valley
- A Project titled “Socio-economic Vulnerability Assessment and Community-based Management of Glacial Lake Outburst Flood: A Case Study in Yasin Valley by Dr Karamat Ali and Dr Attaullah Shah

### Questions/Comments

What is the actual progress of TWG-3?

How much is the PMD communicating with the local communities regarding disasters?

### Answers

On the modelling side, TWG-3 has taken up couple of works, but more remains to be done

The PMD has been transferring information to the local communities through local agencies like AKAH

## Surface and groundwater hydrology, water availability and demand

Bashir Ahmad, NARC

The following were the key points of the presentation

### TECHNICAL PROGRESS

- Under the Himalayan Adaptation, Water and Resilience (HI-AWARE) programme, a study was conducted on how glacial melt supported irrigation in the HKH region. This revealed that in northern Pakistan, dependence on glacier melt for irrigation is above 90 per cent, while in the mid-hills, the dependence is about 70–80 per cent. Meanwhile, 60–70 of agriculture in the lower Indus Basin depends on glacial meltwater.
- Rice and cotton crops depend highly on glacial meltwater from mid-May to July
- The study also showed that climate change would affect timely water availability
- It also showed that the gap between water supply and demand will remain as it is since it is driven by socio-economic changes. In Indus, this gap is the widest compared to the other basins in the HKH.
- The SustaIndus project is currently under way and it focuses on science to support the Sustainable Development Goals (SDGs) and sustainable water management in the transboundary Indus River Basin
- The Government of Pakistan is implementing a new initiative called “Conserve and Increase Productivity of Water” in irrigated, *barani*<sup>1</sup>, and arid mountain areas

- In the irrigated areas, the lining of water channels would save 9 MAF water
- The real-time flow measurement of major canals by the Pakistan Council of Research in Water Resources (PCRWR) with the help of the International Water Management Institute (IWMI) has increased trust among the federating units regarding the flow data
- A study on the depth of the water table has revealed that 80 per cent of the plain area between the Indus and Satluj (Punjab) rivers has normal depth
- The water quality reduces with distance from a water body
- The monitoring of groundwater storage with the help of the gravity satellite “GRACE” has been going on for effective surface and groundwater resource management at Doab levels

### FUTURE WORKING PLANS

- Introducing new technologies to save water, including the dug-well solar pumping system, sub-surface drip, moveable micro sprinkler, grow stream, and Tal-Ya
- Focusing on previously neglected water resource areas:
  - Glacier-fed irrigation systems
  - Springs
  - Dug-wells
  - Spate irrigation
  - Karezes
  - Trais (Rainwater harvesting)
  - Small dams (Rainwater harvesting)
- Capacity building of relevant organizations

### Questions/Comments

As groundwater is depleting by the day, is there any water policy on recharging it?

### Answers

We have a policy on artificial groundwater recharge. But there is a need to have a separate groundwater policy and regulation.

<sup>1</sup>“In Pakistan, *barani* areas are those that primarily lack access to water for crop and livestock production, resulting in lower and uncertain crop yields and livestock productivity.” Asian Development Bank, 2013

## Understanding and managing hazards and risks

Salman Uddin Shah, Aga Khan Agency for Habitat

The key messages of the presentation were:

### TECHNICAL PROGRESS

- Keeping in view the hazards faced by Gilgit-Baltistan, it's of utmost importance to carry out hazard analysis in all the districts of Gilgit-Baltistan
- The decision to conduct a hazard analysis in 10 districts of Gilgit-Baltistan has been approved
- A multi-hazard vulnerability risk assessment of all the 10 districts will be carried out jointly by the National Disaster Management Authority (NDMA) and the Gilgit-Baltistan Disaster Management Authority (GBDMA) in collaboration with the National Disaster Risk Management Fund (NDRMF). A proposal to this effect has already been submitted to the NDRMF.
- AKAH has done a village-level hazard and risk assessment and mapping of 47 per cent of the villages of Gilgit-Baltistan

Recent field and research studies include:

- Badswat GLOF incident
- Shishper GLOF incident by the PMD, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), GBDMA, and AKAH
- Installation of community-based early warning systems for GLOF at Passu, flash floods at Sherqilla, debris flow at Damas, and landslides at Mayoan

### Questions/Comments

How is the dissemination of warning carried out for the layman?

What is the role of women in hazard management?

## Managing gendered socio-economic impacts through adaptation measures

Haider Raza, WWF Gilgit-Baltistan

The key messages from the presentation were:

### TECHNICAL PROGRESS

- The target areas of TWG-6 are Guronjur, Minapin, Sikandarabad, SAS Valley, Hoper, Rahimabad, Haramosh, Bagicha, Sadpara, Shigar, Khyber, Morkhun, and Passu 9400544960
  - TWG-6 has conducted activities to mainstream gender issues in Gilgit-Baltistan by: capacity building in areas like – mulberry value addition; seed banking; kitchen gardening; producing kilao, vinegar, and jam; hospitality management; and tour guiding
- In the targeted areas, several projects focusing on sustainable methods and resilient technologies have been implemented. They are: building eco-friendly washrooms at the Rakaposhi point, greenhouses-cum-fruit dryers, solar dryers, pulping machines, and tumblers for compost making; enabling river water lifting using hydro rams and solar pumps; promoting off-season vegetable farming; creating model orchards, and installing drip irrigation systems

### FUTURE ACTION PLANS

The future focus areas include:

- Agro-based-tourism
- Off-farm income-earning opportunities to reduce pressure on land resources
- Promoting the skills of youth in marketable trades with a focus on tour Guiding and hospitality management training
- Promoting organic food in the GB
- Block plantation campaign/drive
- Entrepreneurship development
- Market surveys and linkages development
- Waste management

### Answers

The information from the PMD is transferred to the community with simple messages that say that there is probability of heavy rain and floods

Women are engaged in all levels of hazard management.

## Gender session

### Gender Resource Group's role in the UIBN

Kosar Bano, ICIMOD

The following were the highlights in this presentation:

- Twenty-five women from twenty-three organizations of the governments of Khyber Pakhtunkhwa, Gilgit-Baltistan, and Azad Jammu and Kashmir participated in the Gender Resource Group (GRG) meeting held on 29 January 2020
- Women's participation and representation is always less at national-level forums and in the decision-making process; so, ICIMOD has decided to establish a gender resource group in the UIBN
- Compared to other countries in South Asia, Pakistan ranks the lowest in terms of the human development index(2019). The status of women is cause for alarm in the South Asian context.
- ICIMOD carried out an exercise in 2017 wherein all the existing gender networks were identified
- The GRG meeting concluded that there is a need for strong networking, capacity building, resource mobilization, and visibility
- Policy advocacy/influence is required
- The GRG has suggested a fourth element in the water-energy-food nexus, i.e. land
- In the Sindh province, women farmers have been accorded a proper status; this should be replicated in the whole of Pakistan
- Women are working 24/7 but no statistics or data in this regard is available
- Studies are required to understand gender dynamics
- Narratives need to be changed
- Institutional reforms are required. While there is an 18 per cent quota for women, only 2 has been filled
- The Asia Foundation has assured full support to the GRG

- Seepa has extended full support to the GRG for capacity building, trainings, etc.
- Women in the renewable energy sector have also become members of the GRG
- The GRG should provide advice to each group in the UIBN about how to incorporate gender into all the research and development activities
- The GRG should be linked with other water and energy groups across the country
- Transgender groups and women with disability should also be included in the GRG

Some of the core functions of the GRG are:

- Generating knowledge through research and data collection
- Fostering collaboration and partnerships between different organizations comprising the UIBN
- Advocacy and policymaking
- Capacity building and women's leadership development (integration of women in all the six thematic groups)
- Building linkages with the existing networks in Pakistan
- Sharing of resources and opportunities

### Group work

Moderated by **Hina Lotia**, Co-coordinator, UIBN-PC

The participants were divided into six groups based on the TWGs and were asked about the following topics:

- a. New members
- b. Future focus areas
- c. Skills/capacity required and available

The responses are tabulated below:

Technical Working Group	Q1. New members	Q2. Future focus areas	Q3. Skills/capacity required and available
01	PMD, IST	Capacity building on missing data, reliability, spatial gaps, availability, and computation Data assimilation of in situ and satellite data Snow mass data of Pakistan Impact of large infrastructure on the local environment	Skills are required in terms of standardization of observatories, data collection, error avoidance, data processing, etc.
02	NUST, PMD, GCISC, CEWRI/NARC	Air quality monitoring, including aerosol monitoring Integration of CPEC impacts Data/information sharing among the stakeholders The impact of climate change on air quality and vice versa Statistical models for climate change prediction and variability	
03	PMD, KIU, COMSATS, UET (Peshawar), PCRWR, NUST, AKAH, NCEG (Peshawar), SUPARCO, GCISC, GMRC/WAPDA, NDMA, Media, EPA, WWF	Updating data plus in situ validation of the inventory of potentially dangerous GLOF lakes Correcting bias on cryosphere data through the involvement of the academia Mapping of debris cover thickness mapping Ablation zone monitoring of large glaciers. Glacial mass balance modelling based on in situ observation Glacio-hydrological modelling Avalanche modelling Energy exchange processes/degree-day factor (DDF)	Skills available: Geophysical studies (CCRD, COMSATS) GBR/ERT seismic refraction training to be delivered Improved hydro-climate modelling DDF and ablation zone monitoring RS/GIS training (KIU, UET, PMD)  Required trainings: On avalanche monitoring and modelling
04	CEWRE, UET (Lahore), IWMI-Pakistan, CEES-Punjab University, UET (Peshawar), CEWRI/NARC, Hisaar Foundation/PPF, SACAAN, Federal Water Management Cell,	Hydrological modelling, GIS/RS, data collection ICT real-time monitoring Groundwater recharge area identification and potential area determination Resistivity studies Land use/ Land cover changes impacts Optimization of agriculture water use Water demand and river morphology studies Water availability	

05	CEWRI/NARC, KADO, KIU, Centre for Mountain Research, University of Punjab, AKAH	<p>Web-based real-time satellite data analysis</p> <p>Simulation and modelling</p> <p>Use of modern tools like GIS, drone tracking</p> <p>High resolution data availability</p> <p>Geomorphologically based disaster risk potential and mapping using GIS tools</p> <p>Early warning system and historical data management system</p> <p><b>Institutional Interventions</b></p> <p>Capacity building of local institutions</p> <p>Review of existing disaster management framework</p> <p>Follow-up of bottom-up approach for disaster management</p> <p>Collaboration between government, academia, and community</p> <p><b>End-to-end forecast system</b></p> <p>Transfer of scientific knowledge to the community</p> <p>Gender/Physical challenges and people's involvement</p> <p>Inventory of resources</p> <p>More reliable local weather forecast data</p> <p>Disaster education and social media use</p> <p><b>Early warning system for disaster</b></p> <p>Micro-level studies/maps</p> <p>Regular monitoring</p> <p>Capacity building and training of vulnerable communities</p> <p>Computer/mobile apps or push notification</p> <p>Remote hazard monitoring and assessment</p> <p>Sensitization of local community on hazards</p>	
06	ETI-GB, Technology Times, PWD-GB, SEPLAA Foundation, WWF-Pakistan, Hashoo Foundation, Planning & Development (AJK)	<p>Income diversification strategies</p> <p><b>On farm</b></p> <p>Horticulture (apple, apricot, walnut, vinegar, jam making)</p> <p>Introduction of improved variety of crops; ornamental and medicinal plants, apiculture, sericulture</p> <p><b>Off farm</b></p> <p>Gem cutting/polishing, embroidery, designing, software building, e-marketing, marble and granite cutting</p> <p>Capacity building and installation/maintenance/usage of solar units</p> <p>Access to credit sources</p> <p>Livestock and poultry farming</p> <p>Watershed management (rainwater harvesting, sensitization training)</p> <p>Training for women in leadership</p>	

## Discussion session

Moderated by Senator **Nisar A. Memon**, Chairman, WEF/Advisor UIBN-PC

The moderator requested the participants, particularly the new members, to share their expectation as well as suggestions for the UIBN-PC. The following were the responses:

- The UIBN-PC should work to transform research into policy
- Visible integration of the six TWGs
- Gender integration in all the TWGs
- Identification of the skill matrix of all the TWGs for need assessment
- In the areas of research and knowledge, the TWGs should opt for regional collaboration
- Dissemination of the workings of the UIBN-PC is required at a wider scale through different mediums

- All levels of stakeholders should be invited into the Pakistan Chapter
- A common data portal and easy access for all the stakeholders
- The future working plans of the TWGs should be developed in line with the national policies in order to identify the gaps, and based on this, proposals must be developed to seek funding
- The UIBN-PC should also focus on transboundary issues
- There is a need to identify the knowledge gaps in the UIB and find ways to fill them
- The UIBN-PC should provide solutions to the issues identified through research
- The UIBN-PC must focus on future funding for sustainability

The moderator asked the participants a few more questions on certain topics. The responses are below:

Questions	Response
How to prepare for the RUAM (February 2020) <ul style="list-style-type: none"> <li>- Scientific presentation: Experience from the Indus Basin and new research findings</li> <li>- Presentation on the progress of the UIBN-PC</li> </ul>	These will be decided in the sixth meeting of the UIBN-PC
Identification of three areas for joint research or policy areas involving another member country	Common issues like pollution/black carbon/smog; comparative studies on socio-economic challenges with other member countries and solutions linked to climate change affects
How to sustain the UIBN-PC	<ol style="list-style-type: none"> <li>Wider dissemination and fundraising and fund seeking from donors</li> <li>Research should be linked to the needs of industry, farmers, and environmentalists</li> <li>Research proposals to seek funding</li> <li>Inviting funding agencies to the country chapter meetings</li> </ol>
Next UIBN-PC meeting, date, and venue	This will be decided in the sixth UIBN-PC meeting.

# Proceedings of Day 2

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## UIBN-PC's Theory of Change

Chair Remarks by Attaullah Shah, KIU

The world has been experiencing changes in the twenty-first century; changes such as globalization and the evolution of new technologies. But these have not really been part of the future planning. So, we should learn and implement the ToC and align it with the work plans of the TWGs in order to make these more effective in terms of achieving the envisioned goals.

### Why do we need a Theory of Change/ Participatory Impact Pathways for a programme/project/initiative?

Farid Ahmad, ICIMOD

The key points of this presentation were:

- It has been almost seven years since the establishment of the UIBN the ToC has not been applied yet. During the last RSC meeting, the ToC for the regional UIBN was shared and it was decided that the ToC will also be shared at the country chapter level
- The ToC directs the process of all decision-making, results, etc. of the TWGs; overall, this makes the UIBN-PC more effective and strategic
- The ToC ought to be part of the daily business and should be applied by everyone in order to aim and achieve
- The discussions on the future working plans of the TWGs must be cross-checked with the ToC
- Whenever a project is perceived, it consists of three steps: planning, implementation, and evaluation
- A project/programme consists of inputs, activities, outputs, outcomes, and impacts
  - Inputs are the resources that support any activity that Involves human resource and funding

- Activities are a set of interventions to achieve outputs, outcomes, and impacts; for example, dialogue and piloting
- Outputs are short-term results such as reduction in poverty and improving the ecosystem
- Short-term outputs are used to influence policy makers and all the other relevant stakeholders
- Outcomes are medium-term results such as change in policy based on the influence of short-term results called outputs
- Impact is the long-term result of activities
- Any project that is designed must target outputs, outcomes, and impacts for its successful implementation
- The sphere of change consists of sphere of control, sphere of influence, and sphere of interest
  - The sphere of control includes project inputs (resources), activities, and outputs
  - The sphere of influence includes change in behaviour
  - The sphere of interest includes the impact in the form of change in the state
- Assumptions are an integral part of a programme (risk management plan) to avoid any uncertainty during the implementation
- A project can be classified as simple, conceptual, and complex
- The key to successful project implementation is communication
- Usually, the donor requires a simple narrative: from planning to vision. But in actuality, there's always back-and-forth exchanges during the implementation of a project/programme; this is due to uncertainties. This means that project implementation is not a linear process.
- The ToC answers four key questions:
  - What do we need to do to achieve results? (Activities and strategies)
  - What framework conditions are required to lead to results? (Assumptions)

- What are the issues, challenges, and opportunities for ICIMOD in the HKH and beyond? (Context)
- What are we trying to achieve? (Results)
- The ToC has been defined by many, but the most comprehensive definition is: “Explanation of process of change by outlining causal linkages in an initiative, i.e. its shorter-term, intermediate, and longer-term outcome.”
- Regional collaborative projects in science and capacity building
- Increased policy interactions of the network with relevant government set-ups
- Increased evidence of use of UIBN products for policies, development projects, and research

### **The Regional UIBN’s Theory of Change: Soliciting inputs and suggestions to further improve ToC**

Farid Ahmad

- The ToC of the regional UIBN consists of one larger and longer impact, four outcomes, five outputs, key strategies related to regional, national and science-based engagements, and three assumptions
- The envisioned impact of the regional UIBN is a resilient and empowered UIB region
- The four outcomes of the regional UIBN’s ToC are:
  - Improved regional cooperation in the Indus Basin
  - Strengthened upstream and downstream linkages
  - Improved capacity of institutions and individuals
  - Uptake of context-specific and gender-sensitive solutions
- The outputs (the immediate results) of the regional UIBN’s ToC are:
  - Increased country ownership of the network
  - Policy-level participation in the network meetings

- The key strategies are focused on regional, national and science-based engagements
- There are three assumptions in the ToC of the regional UIBN:
  - Country ownership is critical for the success of a regional network
  - The network believes in being managed on an open learning platform which adapts to changes and makes strategies for long-term outcomes and impacts
  - Science diplomacy is a key to regional cooperation given the geopolitical situation in the HKH region
- There are four major challenges and associated opportunities included in the ToC

### **Group work**

Farid Ahmad

The participants were divided into five groups and asked for: a) actor/stakeholder mapping of each outcome and defining their critical roles for change pathways; and b) actor-based outcome strategies. Below are the strategic plans drafted by the groups:

## Group-1: Governing body of the UIBN-PC

S#	Key strategies	1-3Y	3-6Y	6-10Y	Identify the relevant stakeholders with whom you will work (name Institutions at different levels)
<b>Outcome 5: A self-sustained, independent, and effective think tank of the UIBN-PC</b>					
Strengthened network	Participation of key institutions, including governmental ones, civil society organizations (CSOs), media, academia, and the private sector				Relevant ministries and departments at federal and provincial levels, relevant CSOs, media professionals, universities
	Liaison with the government to facilitate relevant policy advice and influence				EAD, FO, IWC, IRSA, Planning Commission
	Involvement of young professionals and relevant faculty members in researchable areas				Universities and training institutes
	Facilitate collective wisdom for collaborative projects				
Effective network	Liaison with international institutions				CAS, foreign universities, donor agencies, GWP, WMO, UN Water
	New research findings to be shared with all members – avoiding duplication and encouraging partnerships				All TWG leads/co-leads (through WhatsApp groups, Twitter, Google groups, ICIMOD web portal)
	Virtual communication mechanism to be promoted for frequent interactions				All TWG leads/co-leads
	Social media platforms to be used for sharing of policy recommendations and key messages				All TWG leads/co-leads
Sustainable network	Capacity building of participating institutions and individuals – to upgrade skill sets and remain relevant				Coordinator and all TWG leads/co-leads
	Generate financial support				Needs further discussion
	House the network in a resourceful and influential institutional partner/ministry				Needs further discussion
Gender inclusive	Inclusion, recognition, and mainstreaming gender issues across all TWGs				Gender Resource Group, coordinator, and all TWGs
	Awareness, exposure, and training of women's groups				Gender Resource Group
	Establishing linkages with other women's networks and including them in the UIBN				Gender Resource Group

## Group-2: Cryosphere monitoring and modelling (TWG-3)

S#	Key strategies	1-3Y	3-6Y	6-9Y	Identify the relevant stakeholders with whom you will work (name institutions at different levels)
<b>Outcome 1. Evidence-based policies, strategies, and programmes, and their effective implementation</b>					
1.	Knowledge management: Integration of baseline information/database; research on identified gaps	■			PMD, KIU, CUI, NCEG (PU), NUST, IST, AKAH, NDMA, GBDMA, EPA, PIEAS, QAU, WAPDA, GCISC, NARC
2.	Joint field Visits		■		PMD, KIU, CUI, NCEG (PU), NUST, IST, AKAH, NDMA, GBDMA, EPA, PIEAS, QAU, WAPDA, GCISC, NARC
3.	Development of data base			■	ICIMOD/PMD
<b>Outcome 2. Regional collaboration and Integration</b>					
1.	Regional knowledge management: Ongoing initiatives in Pakistan, China, Afghanistan, India, and Central Asia	■			ITP-China, ISRO (if possible), Afghan counterpart, and local and regional entities like the PMD, academia, NDMA, and GBDMA
2.	Joint initiatives such as exchange programmes; joint research on thematic areas		■		PMD, KIU, CUI, NCEG (PU), NUST, IST, AKAH, NDMA, GBDMA, EPA, PIEAS, QAU
				■	
<b>Outcome 3. Improved governance, management, and effective delivery of services</b>					
1.	Capacity building	■			PMD, KIU, CUI, NCEG (PU), NUST, IST, AKAH, NDMA, GBDMA, EPA, PIEAS, QAU
2.	Confidence building and network Expansion		■		PMD, KIU, CUI, NCEG (PU), NUST, IST, AKAH, NDMA, GBDMA, EPA, PIEAS, QAU
3.	Finding donors for establishing monitoring stations			■	National and regional donors
<b>Outcome 4. Optimal and effective utilization of resources</b>					
1.	Sharing of identified resources	■			PMD, KIU, CUI, NCEG (PU), NUST, IST, AKAH, NDMA, GBDMA, EPA, PIEAS, QAU
2.	Collaborative trainings		■		PMD, KIU, CUI, NCEG (PU), NUST, IST, AKAH, NDMA, GBDMA, EPA, PIEAS, QAU

### Group-3: Surface and groundwater hydrology, water availability, and demand (TWG-4)

S#	Key strategies	1-3Y	3-6Y	6-10Y	Identify the relevant stakeholders with whom you will work (name institutions at different levels)
<b>Outcome 1. Evidence-based policies, strategies, and programmes, and their effective implementation</b>					
1.	Creation, sharing, and transfer of scientific data at the regional level about groundwater and surface water				Academia and all members of TWG-4
	Capacity building at individual and institutional levels to improve skills, governance capability, and deliverables regarding groundwater and surface water				
<b>Outcome 2. Regional collaboration and integration</b>					
1	Joint studies				Universities, research and development organizations, NARC, PCRWR, IWMI, ICIMOD, PMD, WWF, ministries and departments, i.e. MoWR, MoCC and MoFSR,
	Regional workshops, conferences, webinars, Twitter, Skype, social media groups				
	Development of water, food, and population nexus at national and regional levels				
<b>Outcome 3. Improved governance, management, and effective delivery of services</b>					
1	Use of climate-resilient technologies to improve governance, management, and delivery of services				Universities, research and development organizations NARC, PCRWR, IWMI, ICIMOD, PMD, WWF, ministries and departments, i.e. MoWR, MoCC, and MoFSR
<b>Outcome 4. Optimal and effective utilization of resources</b>					
1	Rationalizing water demand and supply for agricultural, domestic, and industrial uses				Universities, research and development organizations NARC, PCRWR, IWMI, ICIMOD, PMD, WWF, ministries and departments, i.e. MoWR, MoCC, and MoFSR
	Sensitizing stakeholders on future demand for groundwater and surface water				

## Group-4: Understanding and managing hazard and risk (TWG-5)

S#	Key strategies	1-3Y	3-6Y	6-10Y	Identify the relevant stakeholders with whom you will work (name institutions at different levels)
<b>Outcome 1. Evidence-based policies, strategies, and programmes. and their effective implementation</b>					
1.	Knowledge management: Integration of baseline information/database; research on identified gaps	█			NDMA. Regional Disaster Management Authority, academia, civil society/non-governmental organizations
2.	Hazard and vulnerability assessments (on a regular basis)		█		Regional authority (GBDMA), academia
3.	Development of policies and plans for local and regional levels			█	GBDMA, NDMA. academia, civil society, community representatives
4.	Implementation of the proposed policy and associated framework			█	Relevant stakeholders such as building regulation authorities
<b>Outcome 2. Regional collaboration and integration</b>					
1	Regional knowledge management: Ongoing initiatives in Pakistan, China, Afghanistan, India, and Central Asia	█			Local and regional entities like the NDMA and GBDMA
2.	Joint initiatives such as exchange programmes, joint research		█		Local and regional entities
				█	
<b>Outcome 3. Improved governance, management, and effective delivery of services</b>					
1.	Development of a regional forum on disaster risk reduction (DRR)	█			Local and regional entities
2.	Basic education/awareness, especially at the school level; dynamic pressures		█		NGOs
3.	Capacity building and strengthening of DRR institutions and other key stakeholders			█	NDMA, Regional Disaster Management Authority, academia, civil society/non-governmental organizations
<b>Outcome 4. Optimal and effective utilization of resources</b>					
1	Improving emergency response and post-disaster recovery	█			NDMA, PDMA
2.	Mainstreaming disaster management at the developmental level		█		

## Group-5: Managing gendered socio-economic impacts through adaptation measures (TWG-6)

S#	Key strategies	1-3Y	3-6Y	6-10Y	Identify the relevant stakeholders with whom you will work (name institutions at different levels)
<b>Outcome 1. Evidence-based policies, strategies, and programmes, and their effective implementation</b>					
1.	Improve women's socio-economic resilience through varied climate-resilient on-farm interventions				GB line departments, WWF, HF, PARC, GBRSP, AKRSP, ICIMOD, LSOs, IFAD
2.	Improve women's socio-economic status through sustainable off-farm interventions				HF, GBRSP, WWF, AKRSP
3.	Improve women's representation at the policy level by encouraging women's leadership development and inclusiveness				IFAD, HF, AKRSP, GB, government
<b>Outcome 2. Regional collaboration and Integration</b>					
1.	Creating strong linkages, coordination, and collaboration at the regional level with the relevant stakeholders				ICIMOD, ministries, departments
<b>Outcome 3. Improved governance, management, and effective delivery of services</b>					
1	Create various platforms (CBOs, WOs, women's business groups) and capacity building				HF, WWF, CBOs, LSOs
<b>Outcome 4. Optimal and effective utilization of resources</b>					
1	Capacity building of beneficiaries for maximum utilization of the given resources and access to other service delivery institutions				GB line departments, WWF, HF, PARC, GBRSP, AKRSP, ICIMOD, LSOs

The event was well covered by the media. The following are the links to the news items published by different agencies:

1. "The Indus Basin and Our Water Crisis", The News: <https://www.thenews.com.pk/print/610419-the-indus-basin-and-our-water-crisis>
2. "The Cold Wave", The News: <https://www.thenews.com.pk/tns/detail/610875-the-cold-wave>
3. News piece, The Nation: <https://nation.com.pk/E-Paper/islamabad/2020-02-03/page-3>
4. News piece, Daily Observer: <https://pakobserver.net/uibn-pc-call-for-indus-basin-protection-from-climate-change/>
5. News piece, Express Tribune: <https://tribune.com.pk/story/2149116/1-protection-indus-basin-climate-change-impacts-stressed/>
6. Blog, Technology Times: <https://www.technologytimes.pk/icimod-organizes-1st-general-meeting-of-uibn-pc-in-islamabad/>
7. A YouTube channel, High Asia Herald, also carried out an exclusive programme on the event where the following spoke: Khalid Mohtadullah, VC, Karakoram International University; Syed M Abubakar, environmental journalist; and Kosar Bano, ICIMOD gender expert. (Yet to be aired.)

## Closing session

The way forward by **Muhammad Riaz**, PMD/  
Coordinator, UIBN-PC

The following were the key action points at the meeting:

1. Meeting of the coordinator, co-coordinator, advisor, and TWG leads and co-leads on preparations for the Regional Annual Meeting within the next couple of weeks.
2. There should be regional collaboration on common issues like pollution/black carbon/smog; and a regional comparative study ought to be carried out on the socio-economic challenges and solutions linked to climate change
3. A team has to be put together to explore future funding possibilities for the UIBN Pakistan chapter.
4. More inputs from members on the Theory of change for finalizing it
5. The future plans of the TWG have been operationalized
6. The date, venue, and host of the next UIBN-PC meeting have to be decided
7. The recommendations at this meeting are to be shared with the FFC and the entire network in order to be incorporated into the implementation framework of the National Water Policy

Special remarks by **Shozab Abbas**, Foreign Office

This forum has a great potential to steer Pakistan out of its water crisis and issues pertaining to climate change. While nature has blessed Pakistan with plentiful water, the deficiency is more related to mismanagement. Nature has given us 140 MAF of water in the Indus Basin System, of which almost 41 MAF water is available to the people of Pakistan. Now the availability of water per capita has decreased. Perhaps the physical scientists will put it down to increasing population and misuse. It is important to know “how the users of water are using it”. The important initiative taken by this forum is on the ways to conserve water. Controlling the population and reducing misuse will help in solving the problem. It is time to focus on solutions.

Resources are always limited and the trick is to sustain the life circle with these available resources. Meanwhile, we need to increase the capacity of our country to store more water. There is also a need to conserve the water that comes from the mountain ranges west of Punjab and Balochistan. It's here that transboundary issues come into play here.

The UIBN-PC has made significant progress and it is hoped it will continue achieving its goals.

Vote of thanks by **Abdul Wahid Jasra**

The three days of this UIBN-PC event saw a Gender Resource Group consultation meeting on 29 January and then two days of the UIBN-PC general meeting. During day one, around 30 women from different field areas had great discussions. It had never been possible in the past to bring so many female experts to this network. Thus, ICIMOD is thankful to all the female participants for their presence during these three days. We saw a great number of experts from different fields during the UIBN-PC general meeting. The response to the network was overwhelming and we witnessed great enthusiasm and excitement among the participants. The participants had great deliberations and provided strategic inputs in developing the TWG working plans. ICIMOD expresses its appreciation for such enthusiastic participation and for providing strategic inputs. ICIMOD is also thankful to all the participants who travelled from far-off areas in order to discuss important issues during the first general meeting of the UIBN-PC.

I am also thankful to all the senior officials for their presence and guidance during the meeting. Special thanks to our headquarter colleagues, including Mr Farid Ahmad, Mr Ajaz Ali, and Ms Kosar Bano for being with us during this Pakistan Chapter meeting. At the end, I am also thankful to the Pakistan Country Office team for their efforts to make this event successful.

**Additional event information and materials are available at:**

<https://www.icimod.org/event/first-general-meeting-of-the-upper-indus-basin-network-pakistan-chapter/>

**File links:**

[Agenda](#)

[List of participants](#)

Proceedings prepared by Muhammad Mudassar Maqsood and Ajaz Ali



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