Upper Indus Basin Network

International Conference on Climate and Environment Change Impacts on the Indus Basin Waters

Dates: 17 - 18 February 2016

Kathmandu, Nepal

Khalid Mohtadullah
The Indus Basin

- Basin area 1,140,000 sq.km.
- Pakistan (47%), India (39%) China (8%) and Afghanistan (6%)
- Most glaciated river basin
- Indus: 21,192 km²
- Glaciation 35.3 % of basin area
- Largest contiguous irrigation system in the world
- Heavy dependence of downstream users on upstream water
- Knowledge about upstream resources is scanty
- Various organizations involved in knowledge generation - coordination weak
The Upper Indus Basin Network

• Proposed by ICIMOD in partnership with national institutes

• Major objective:
  - To study climate change impacts in the Indus Basin in consultative mode
  - Support interested institution in related subject
  - Establish good coordination and sharing between institutions

• A comprehensive field visit was organized in April 2014
  - First hand look at the UIB environment
  - Better understanding of needs, institutions, priority research areas
  - Methodologies for monitoring
  - Selection of sites

Mission
“Promote coordination and collaboration among organizations working in the Upper Indus Basin for improved understanding of present and future water availability, demand, and hazards and to develop solutions for various stakeholders from local to national levels.”
UIB Network Working Groups

• Data collection, quality and sharing (Group 1): Daniyal Hashmi and Matthias Winiger
• Climate variability and trends (Group 2): Ghulam Rasul and Elisa Vuillermoz
• Cryosphere monitoring and modeling (Group 3): Atif Wazir (PMD) and Pradeep Mool (ICIMOD)
• Hydrology, water availability and demand-basin scale (Group 4): Yinsheng Zhang and Arun Shrestha
• Hazards and risks (Group 5): Philippus Wester and Muhammad Asif Khan
• Adaptation strategies at local level - water use and management and socioeconomic factors (Group 6): Luca Listo and Muhammad Zafar Khan
Progress of UIB Network

- Working groups are progressing very well
- Meetings are held regularly (Nov 2014, July 2015)
- Several initiatives have come up:
  - Himalayan University Consortium
  - HI-AWARE
  - Cryosphere programme with KIU
  - GLOF monitoring with Focus
  - Water management with WWF
  - Cryosphere by WAPDA with WB
- Strong need felt for integration
- Formed a strategic team
- Decided to prepare a comprehensive proposal
Current challenges

• To keep the Network moving forward

• Developing a integrated funding proposal

• Maintaining regular communication among the working groups.
Areas of future strategic focus to be addressed in the proposed integrated funding proposal

The big questions:

1. What were the climatic trends and variability in the basin in the past and how will it be in the future?
2. What is the state of various cryospheric components (glacier, snow, permafrost) and how they are changing with time and will change in the future under climate change?
3. How can the present observation system be strengthened to support previous questions?
4. How to enhance the effectiveness of data collection, quality control and dissemination at national and regional levels?
5. How will climate change and cryosphere dynamics impact the water availability in the future?
6. What will be the water demand scenario of the future?
7. How can the supply-demand gaps be addressed?
8. What are the most suitable and sustainable development options for the upstream part of the basin?
9. What are the natural hazard hotspots and how is the vulnerability changing?
10. What could be the impact of cryosphere change on ecosystem?
Thank You