Progress made in the Upper Indus River Basin in SDIP-I and ICIMOD's strategy for engagement in SDIP-II



#### Arun Shrestha

International Centre for Integrated Mountain Development

Kathmandu, Nepal

#### River Basins Programme



FOR MOUNTAINS AND PEOPLE

#### Goal

 Improved integrated river basin management, to reduce physical vulnerabilities and improve food and energy security for mountain and downstream communities in the HKH region while recognizing upstream interests.

#### Outcome

 Actionable proposals for integrated water resource management practices and policies, including measures for risk management and for equitable access to water for energy and food security, formulated, shared, and used at basin and community levels

### The River Basin Programme





#### **Indus Basin Initiative**

stakeholders and policy engagement



FOR MOUNTAINS AND PEOPLE

NIH

Implementin Strategic Outcome Outputs Impact Partners Partners MoFS (Pk), MoCC Improved scenarios (data) Improved understanding or climate change and National agencies are involved in furthering the scientific understanding of process linking climate and other drivers with cryosphere, water availability and demand and water related risk Hydromet monitoring plan (report) PMD, IITM, KIU (Pk)), MEW (Af), variability to support better impact assessment agriculture practices are managed sustainably impacts Monsoon and westerly dynamics (report) NEPA (Af) Benchmark glaciers established (report) Improved understanding of cryopshere dynamics PMD, WAPDA, Cryosphere dynamics (report) MoFS (P), MoCC and its impacts on local and basin scale water KIU, SUPARCO, Provincial and national policies and plans addresses the climate change water resources sector and includes appropriate management options Imroved glacier and snow cover data (data and report) (P), MEW (Af) availability CAREERI, ITP Status Karakorum Anomaly (special report) State of the art hydrological model of the upstream MoFS (Pk), Indus Basin (model, report, data) PMD, WAPDA, MOCC(Pk), MoWR Improved understanding of current and future Current and future water demand analysis considering PCRWR, PARC, (Pk), NPC (Pk), water availability and demand infrastructure and W-E-F nexus (Report) NIH, MEW MoWR (In), NEPA Linking upstream water availability and downstream (Af), MEW (Af) water demand (model, report) Local knowledge on natural hazard management Focus, WWF, NIDM (P), NIDM Improved understanding of drivers and (report) LEAD, PMD, KIU, (In), ANDMA (AF), consequences of natural hazards Gender aspect in risk management (report) AKRSP GB Govt, KP Govt Mechanism and processes leading to GLOF (report) Linking CBFEWS with RFIS (pilots) future irrigation and nt to climate change Local level DSS forrisk and response planning (pilot, Focus, WWF, GP Govt, KP Govt, LEAD, PMD, report) Building resilience to natural hazards MEW (Af), Flood outlook (model, pilot, report) PRCWR KIU, WAPDA Operational flood mapping usig RS/GIS (maps, latfrom, AKRSP report) Strengthening institutional capacity to better WRM. GB Govt, KP Govt, (pilot, report) are resilient Building resilience in water management and WWF, PCRWR, MoFS (Pk), MoCC Existing and Innovative ways of WR management (pilot) agriculture system (Pk), MoEF (in), AKRSP, Adaptation options for increasing water-energy-and MEW (Af) food security (toolbox, report) Scientific interactions (reports) PMD, WAPDA, WB, IWMI, IUCN Improved coordination and sharing among UIB Network support (reports, field visits) MEW, CAS, TERI,

Policy interactions/dialogues (event reports, media)

#### **Indus Basin Initiative**



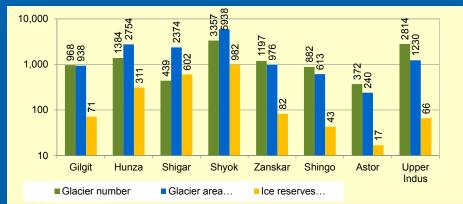
- Understanding of CC and variability
- Cryosphere dynamics and impacts on local and basin scale water availability
- Drivers and consequences of natural hazards
- Resilience to cc and natural hazards
- Resilience in water management and agriculture
- Improved coordination and sharing among stakeholders
- Strengthened policy engagement

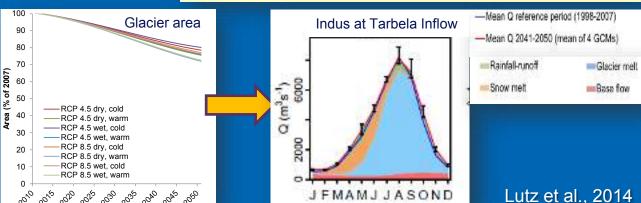
### Indus Initiative in SDIP Phase -1

### Knowledge development



- Cryosphere dynamics and impact on water availability
- Glacier debris dynamics: links to Karakorum anomaly
- Precipitation variations: innovations in filling data gaps (using glacier mass balance)





# Enabling environment through innovation



- 1. Community based GLOF monitoring
- 2. Local level water management
- 3. Improved agricultural practices
- 4. Access to household energy
- 5. Partnership: WWF, KIU, FOCUS, PCRWR, GB Govt









# Facilitate dialogue, coordination and sharing



- Upper Indus Basin Network
  - Coordination of research
  - Joint planning
  - Standard monitoring protocols
- Indus Basin Knowledge Platform
- Indus Conference



#### SDIP Phase 2



- Develop basis and mechanisms for regional cooperation
- Creation and use of critical new knowledge
- Promoting best practices, capacity development and Innovations

#### Indus Initiative in SDIP-II



FOR MOUNTAINS AND PEOPLE

#### Component 1

# Develop basis and mechanisms for regional cooperation

- Scientific knowledge used for policy and regional cooperation
- Regional Science Network in Upper Indus Basin (UIB)
- Regional multi-scale system for disaster risk reduction (DRR)
- Establish and enhance gender resources and network

#### Indus Initiative in SDIP-II



FOR MOUNTAINS AND PEOPLE

#### Component 2

#### Creation and use of critical new knowledge

- Understanding climate change and its implications on rivers, natural hazards, hydropower and consequences for livelihoods particularly women and girls.
- Solutions for food, energy and ecological security in high mountain agriculture given impacts of climate change.
- Improved understanding of groundwater sustainability and spring rejuvenation: narrowing the gap between science, policy and society
- Knowledge base for developing solutions for gender and inclusive development

#### Indus Initiative in SDIP-II



FOR MOUNTAINS AND PEOPLE

#### **Component 3**

## Promoting best practices, capacity development and Innovations

- Benefit sharing from hydropower projects at local level for the mountain people
- Flood resiliency building spatial planning and advocacy tools
- Innovations in water sector, improving water management and livelihoods
- Basin-wide gender responsive knowledge systems that provide development solutions for empowering women and disadvantage groups

## Thank you



