Koshi Basin Initiative

Water-livelihoods-gender nexus to advance Koshi Basin Management

Wahid, SM

International Centre for Integrated Mountain Development
Kathmandu, Nepal
Knowledge and competence

Local planning
- Water conservation and spring rejuvenation
- Catchment water allocation
- Small infrastructure planning
- Benefit sharing of ecosystems services
- Community capacity building

River basin planning
- Decision support to develop and manage water infrastructure
- Tools to monitor and reduce disaster risk
- Facilitating knowledge sharing and competency building
- Enabling environment for regional cooperation

Resilient livelihoods
- Governance considering gender equity and social inclusion
- Equipped communities and implementing agencies to adapt to change
Charting change path
Example

**Climate-Water Agriculture-hydropower nexus**
- Climate scenarios
- Hydrological-agriculture-HP-economic scenarios
- Options for agriculture and hydropower development
- Pilot and showcase programme for testing and demonstrating dev options

**Scale up** – DOI, WECS, DWSS, DHM, WRD, MOAD, DOA

**Scale out** – HELVETAS, PA, NWCF, NAST, NARC, ICAR etc.

**Change in Actors Knowledge, Attitude and Skills**

**Hydro-met departments**
- Access new and improved data and able to build better model

**WR departments**
- Understand common critical issues for basin-wide water management

**Agriculture departments**
- Have improved understanding of trade-offs and synergies amongst water users

**Research organisations and NGOs**
- Get open access info on basin-wide climate-water-agriculture-hydropower development scenarios

**Farmer communities**
- Trained to cope with environmental changes

**Goal**
- A regional coordinated approach to water resources development and community practices for water, energy and food security
Charting engagement
DRR example

ICIMOD

IMHE

TAR-DoLR

County Adm1

County Adm2

DHM

DDC1

DDC2

IIT-K

BSDMA

NDMA

DisDMC1

DisDMC2

Programme partners
Change

Next Users

End Users

Research participation

Disseminating

Capacity Building

Scaling Out

Experience sharing

China

Nepal

India

China

India

Nepal
Evidence of change

Water scarcity in the middle hills

“….the project taught us that in order to flourish, the springs need high levels of groundwater, and the community needs to conserve the headwater catchment for that.”

..........Sunita, Kavre district
Evidence of change

Making water use decisions locally

Several districts in Nepal transforming water management through **water use master plans** and recognizing upstream downstream linkage
Evidence of change

Planning for the future

Water modelling determines future water availability and as more data becomes available, this will be valuable tool for future water resource planning.
Evidence of change

Before the water comes
Workshop objectives

Science outcome
Discuss science outcomes of on-going research outcomes

Policy recommendations
Based on the co-learning among the stakeholders

Knowledge sharing
Create a platform for evidence based policy support
Workshop structure

Issues and challenges
Water and livelihoods issues and challenges

Gender equity
Gender and water resource management

Solutions
Improving livelihoods resilience

Research
Improving livelihood research

Platform
How to bring synergies among the different researches
An integrated information platform gives 200 unique users every month. Valuable information including gendered access to and use of resources.

“We have used Kosi basin information system to look for information on rainfall, land use and land cover, and drainage.”

…Prof Rajiv Sinha, Head, Department of Earth Sciences, Indian Institute of Technology-Kanpur
Thank you

For more please email – swahid@icimod.org
Evidence of change

Rethinking the relationship between resources

ICIMOD research argues that a ‘nexus approach’ should be incorporated into future climate change adaptation strategies.

Working to avoid a disaster

A project along the China-Nepal border aims to reduce the risk of disaster and to become an example of cross-border cooperation.

In Search of More Time

Community-based flood early warning systems will help communities in the Koshi Basin better prepare for a flood.
Evidence of change

Before the water comes

Koshi basin communities can now access up-to-date information on floods

The mountains’ shifting soils

A new project brings together researchers from China, India, and Nepal to study sediment dynamics in the Koshi basin

Monitoring Nepal’s bread basket

New technologies have helped to create a comprehensive crop monitoring system
Useful info

• **Group rapporteurs** to be selected by the group members on the second day

• Each group may be assisted by a ICIMOD moderator

• **Group discussion Records** will be presented by the rapporteurs in the concluding session on 13 June.

• **Workshop Kit** contains:
  – Background and agenda
  – Info sheets
  – Group work guidance
  – Group work reading materials
  – Participants list
Housekeeping

- Submit your original receipts for reimbursement to the Forum secretariat
  – before lunchtime 12 June 2014
Building blocks

- ENB.E: Create enabling environment for River Basin management
- EVD.T: Improve evidence base and tools for decision making on water-agri-energy-environment
- CAP.D: Capacitate communities and implementing agencies to adapt to change
Ground, Satellite & Modeling

Drought Monitor
- Meteorological drought
  - Rainfall Anomaly
- Agricultural drought
  - Crop Sown area maps
- Hydrologic drought
  - Soil Moisture
  - Stream

Drought Outlook / forecast
- Monthly Climate Outlook
  - Rainfall
  - Temperature
- Seasonal Climate outlook
  - Rainfall
  - Temperature
- Drought Scenario
  - Drought Persistence/withdrawal maps

Agriculture Information
- Pest attacks
- Seed information

Agriculture Information Dashboard - AID

Agriculture Advisory
- MoAD
- NARC
- WFP
- DHM
- ICIM OD

Decision usages
- NeKSA/NPC Reports
- Farmer Advisory
- Crop Insurance guidelines

Market Dynamics
- Whole sale prices
- Inputs Availability
- Other instabilities
Koshi basin management – Resource book

Foresights
- Why RBM Resource book
- Think at basin level and act locally

Tools and examples
- Balancing water supply and demand
- Socio-economic and ESS evaluation
- Disaster management info

Prospects for putting RBM on the dev. agenda
- Climate change
- Agricultural water management
- Freshwater Ecosystem management
- Disasters risk reduction
- Hydropower development
GENDER IN WATER MANAGEMENT: CONSIDERATIONS FOR NEPAL’S KOSHI RIVER BASIN

While both women and men interact heavily with water on a daily basis, their involvement in water management decisions is not equal. In the Koshi River basin and across the Hindu Kush Himalayan region, there is a great need to adopt a gender-sensitive and responsive approach to water management.

- Women's participation is different phases of community-based flood early warning systems.
- Women's leadership is rooted in gender norms. These contribute to lack of awareness regarding government provisions; requiring 33% women's participation in water user committees, and women's lack of land ownership, which is often a criteria for membership in water institutions.
- Women and men often experience water differently. While men use water for irrigation and large livestock, women use it for household, health, and small livestock.
- Water resource management is most effective when there is active participation of both men and women in making decisions.
- Percentage of men and women who own agricultural land.
- Perceived hindrances to women's participation.
- Percentage of women aware of the government's policy provisions on women's inclusion in irrigation groups.

TO IMPROVE WOMEN'S ACTIVE PARTICIPATION:

- Increase awareness about existing gender equity provisions in state and national policies & strategies.
- Provide leadership training to women and promote them to decision-making roles.
- Enhance women's technical knowledge of water management and disaster response systems.
- Establish gender audits to better track who is benefiting from services and interventions.
- Expand criteria so that more women can become members in water institutions.
Nature of involvement

- Credible assessment
  - Water food energy nexus
- Policy support
  - Enabling environment
- Facilitating
- Developing and testing
- Capacity development
Integrated approach

Climate and environmental change **drivers**

Natural system: services and impacts
- Basin
- Sub-basin
- Cryosphere
- Water
- Ecosystem
- Geomorphologic

Human system: Livelihood and vulnerability
- Regional
- National
- Local
- Livelihood strategies
- Agricultural prod.
- Hydropower prod.
- Ecosystem services
- Disaster risk

Qualitative and quantitative approach (integrated modelling) to generate knowledge on Interactions and trade-offs

Socioeconomic drivers

Improved evidence based decision making and regional cooperation to address issues of water-food-energy security in the Koshi Basin
Water-food-energy nexus

- Flood
- Drought
- Loss of agricultural land
- Landslide