

Water Hazards: Research status and future prospects

KOSHI BASIN PROGRAM (KBP)

ICIMOD

FOR MOUNTAINS AND PEOPLE



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Vision (Long Term)

Hazard & extreme climate risks are reduced to Communities & Infrastructure in the Koshi basin through:

1. Enhanced capacities
2. Appropriate Institutional Frameworks
3. Social and gender sensitive policies and practices
4. Improved trans-boundary cooperation in early warning

Outcome expected:
(KBP Phase I:2012-2016)

Communities and implementing agencies have an improved understanding and adopt good practices for water related hazard risk management

Partners:

Resource: Aus Aid

Regional: ICIMOD

China: IMHE

Nepal: Tribhuvan University, WECS, Experts

India: National Institute of Disaster Management, Bihar State Disaster Management Authority

1. Capacity Enhancement

How (strategic approach)

- Exposure visits
- Exchange of knowledge, information and capacity
- Joint field work
- Learn from each other
- Knowledge and communication products
- River basin management and DRR Guidelines

Specific Actions

- Inception workshop
- National stakeholder workshops
- Partners forums
- Information & communication material
- Active stakeholders engagements



On going and Proposed Activities

ICIMOD:

- A digital data base consisting of hazards, disaster events and vulnerability profiles of Koshi basin districts in China, Nepal and India-Analysis of data with graphs and trends.
- Collection of Historical data of GLOF over selected critical sub basin & Assess surface level dynamics of major GLOF events
- Assess potential of remote sensing based GLOF early warning system
- Flood and drought monitoring study and consultation meeting
- Exposure visits to Koshi basin (in India Jan 2014)
- Koshi basin Information System (KBIS)

IMHE, Tribhuvan University & NIDM:

- National stakeholders workshops
- Assess frequency of occurrence of various levels of flood and drought hazard based upon historical analysis, simulation and scientific analysis of future trends
- Conduct comprehensive vulnerability analysis of water related hazards considering exposure, coping and management capacity
- CSIRO: Downscaled climate scenarios application for hazard risk assessment

2. Appropriate Institutional Frameworks

How (Strategic Approach)

- Create evidences on hazard risks, community and infrastructure vulnerability
- Demonstrate solutions through pilots and action research
- Analyze institutions, policies, practices, conduct policy seminars, produce policy digests & guidelines

Specific Activities:

- Base line research
- Action research & pilots on climate smart Community based DRR
- Project advisory forums drawing from relevant ministries/Institutions (e.g. regional advisory team by ICIMOD, national project advisory team proposed by NIDM)
- Work with other agencies, networks (e.g., partners and stakeholders forums in Bihar, Nepal risk reduction forum in Nepal)

On going and Proposed Activities

ICIMOD:

Policy and institutional analysis & publication, Policy watch, analysis and share with partners

- **IMHE**
- Assess existing institutional and policy framework concerning IWRM implementation in the upper Koshi basin.
- Identify gaps, capacity building needs and changes in theory of practice needed with a particular focus on enhancing IWRM implementation and basin level cooperation.

Tribhuvan University

- Mapping of institutions involved in disaster risk reduction in the Koshi basin in and identify issues related to existing institutional
- Assess new and emerging risks and adaptation strategies to feed into the risk management strategies and also to understand how women and men are differently impacted by the additional risks

3. Social and gender sensitive policies and practices

How (Strategic Approach)

- Evidences on social and gender based vulnerabilities
- Document and disseminate effective practices of social and gender inclusive DRR
- Policy digests and guidelines

Specific activities

- Base line research
- Action research and pilots on social and gender sensitive DRR
- Framework and guidelines for research on social and gender sensitive DRR
- Capacity building of all partners of the KBP

On going and Proposed Activities

- **ICIMOD:** Research on gender based vulnerabilities, policy analysis with gender perspective, Catalogue of gender and DRR Best practices, policy digests and guidelines
- **IMHE:** Develop policy papers from good practice case studies and strengthen early warning systems and gender sensitive and inclusive DRR practices
- **Tribhuvan University:** Assess new and emerging risks and adaptation strategies to feed into the risk management strategies and also to understand how women and men are differently impacted by the additional risks
- **NIDM:** Review good practice in disaster risk reduction for water -related hazards for the region and internationally keeping in view the good practices reduce women's drudgery and workload in water collection, provide them income generation opportunities and access to planning and decision-making related to disaster risk reduction approaches and intervention

4. Improved trans-boundary cooperation in early warning

How (Strategic Approach)

- Evidences
- Regional platform
- Capacity building
- Technology
- Pilots/demonstration

Specific Actions

- Evidence based Research on benefits of cooperation
- Regional Project advisory team
- Connecting with regional platforms created by other initiative (e.g. HYCOS, SARRC, etc.)

On going and Proposed Activities

ICIMOD: Case studies on community based early warning systems,

- Regional review analysis of trans-boundary cooperation agreements , Regional meeting (2014), etc.

IMHE: Trans-boundary joint research activities.

Tribhuvan University: Analyze links between ecological changes, development policies and hazards in the Koshi basin and make policy and practices to improve the situation

NIDM: Analyze policies and practices in the upstream and downstream regions that help or hinder hazard risk reduction in the Koshi basin in India

Broad Regional Outputs to create Impact

- Data sharing through Koshi web GIS & Koshi basin flood and drought information system.
- Hazard assessment: External and project generated data to map & assess hazard risks
- Case studies on good practices of water related hazard risk management and vulnerability reduction
- Plan to raise capacities of mandated agencies and other relevant actors

Impact Targets

A. Enhanced awareness, capacity, resilience, adaptation & preparedness:

Communities from three countries in the basin +

B: Improved policies, practices, intervention strategies:

- **China:** CSA, Tibetan Administration, Ministry of water resources , CMA, Disaster Management Authorities, other relevant Ministries, Research and teaching institutions
- **Nepal:** Ministry of Irrigation, Ministry of Home, DHM, other relevant Ministries, NGO networks, donors , International Finance Institutions (WB, ADB, etc.) & research and teaching institutions and universities
- **India:** National Disaster Management Authority, Ministry of water resources, Bihar state government, other relevant ministries, research & teaching institutions and Universities
- **Regional:** SAARC, Asian Development Bank, Asia-Pacific Water Forum, Asian Ministerial Conference on DRR, other influential DRR Forums,
- **Global:** HFA-2015, UNISDR, GFDRR, UNFCCC, donors and think tanks

Stakeholders

- Communities
- Relevant Government agencies
- Research Institutions, donors & NGOs working for the Koshi basin



Why wider stakeholder involvement:

- Avoid duplication,
- Compliment resources,
- Exchange knowledge, capacity & information
- Learn form each other,
- Create research uptake
- Build project sustainability



Emerging Opportunities

- The EU Council adopted conclusions to reducing tension and conflict over shared water resources in different regions to help achieve the Millennium Development Goals (MDGs) beyond 2015.
- The conclusions emphasize that EU water diplomacy should focus on systematic promotion of **international water cooperation agreements such as the legal frameworks established by the UN Economic Commission for Europe (UNECE) Convention on the Protection and Use of Trans-boundary Watercourses** that are the basis for addressing water security issues and for the **development of regional and bilateral river basin agreement addressing trans-boundary watercourses.**
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Emerging Opportunities

- Global Policy influencing forums recognize the need for promoting greater regional cooperation (HFA)
- Improved DRR Cooperation in Asia through AMCDR
- Effective hydrological data sharing platforms like HYCOS (WHYCOS: Mekong & HKH)
- Climate extremes melting the ice between countries leading to better cooperation
 - New MoU signed by the premiers of India & PR China last month enhanced the over all environment of cooperation in the region:
 - The PR China agreed to extend the *data provision period of the Yaluzangbu/Brahmaputra River*, from May 15th instead of June 1st to October 15th of the relevant year-
 - The two sides agreed to further strengthen cooperation on trans-border rivers, cooperate through the existing **Expert Level Mechanism on provision of flood-season hydrological data and emergency management**,

We want to learn from you

Invite suggestions and inputs

- about key livelihood, socio economic, disaster and climate change issues in the basin
- Understand on going initiatives, programs and policies.
- Find out and data and research information resources on the basin
- Discuss future areas for cooperation



Thank you