PROCEEDINGS OF THE

Koshi Disaster Risk Reduction Knowledge Hub Nepal country consultation: Building a resilient Koshi basin

23–24 September 2019
Kathmandu, Nepal

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Production team
Shradha Ghale (Consultant editor)
Samuel Thomas (Senior editor)
Rachana Chettri (Editor)
Dharma R Maharjan (Graphic designer)

Rapporteurs
Kripa Shrestha, Manisha KC, and Prabesh Dhungana

Compiled by
Kanchan Shrestha, Nishikant Gupta, Debabrat Sukla, Arun B. Shrestha, and Kripa Shrestha

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Koshi Basin Initiative

Contents

Abbreviations and acronyms

ADB	Asian Development Bank
CAS	Chinese Academy of Sciences
CAP	Common Alerting Protocol
CBDRM	Community Based Disaster Risk Management
CCA	Climate Change Adaptation
CDHM	Central Department of Hydrology and Meteorology
CDRMP	Comprehensive Disaster Risk Management Programme
DFID	Department for International Development
DEOC	District Emergency Operation Center
DHM	Department of Hydrology and Meteorology
DRR	Disaster Risk Reduction
EIA	Environmental Impact Assessment
EWS	Early Warning System
FNCCI	Federation of Nepalese Chambers of Commerce and Industry
GDP	Gross Domestic Product
GCF	Green Climate Fund
GLOF	Glacial Lake Outburst Flood
ICIMOD	International Centre for Integrated Mountain Development
IEE	Initial Environmental Examination
INGO	International Non-Governmental Organization
IWMI	International Water Management Institute
KDKH	Koshi Disaster Risk Reduction Knowledge Hub
KMC	Knowledge Management and Communication
KU	Kathmandu University
LDCRP	Local Disaster Climate Resilient Planning
LEOC	Local Emergency Operation Center
LWR	Lutheran World Relief
NPC	National Planning Commission
NGO	Non-Governmental Organization
ODA	Official Development Assistance
SDG	Sustainable Development Goal
TU	Tribhuvan University
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WB	World Bank
WG	Working Group

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This consultation was organized by ICIMOD in collaboration with the National Planning Commission, Government of Nepal. It was supported by the Central Department of Hydrology and Meteorology (CDHM), Tribhuvan University, Nepal; Disaster Preparedness Network–Nepal (DpNet-Nepal); the International Water Management Institute (IWMI); Lutheran World Relief (LWR); the United Nations Development Programme (UNDP); and the United Nations Children's Fund (UNICEF).

We are grateful to our co-organizers for their engagement in the country consultation. Their guidance and support – in designing and conducting the sessions – were critical to the event's success. We are also thankful to all our resource persons and rapporteurs for their participation in the arrangement of the event sessions, and their feedback and inputs to post-workshop documentation in the form of session notes and revisions to the draft proceedings.

Executive summary

The transboundary Koshi basin is rich in opportunities. Disasters such as glacial lake outburst floods, landslides, sedimentation, floods and drought are common in the basin. Responding to such disasters requires collaboration across sectors and among policy makers, academics, practitioners and communities. Upstream-downstream collaboration and coordination is also important for designing and implementing solutions that reduce disasters and build resilience. Disasters are often transboundary in nature and require collaboration across administrative and political boundaries.

The two-day Nepal country consultation brought together multiple stakeholders to discuss the above issues. The objectives of the consultation were to:

1. Identify issues and opportunities for upstream and downstream collaboration and for strengthening science-policy-practice links in the Koshi basin on water-related DRR from Nepal's perspective.

2. Discuss the structure and formation of the Nepal country chapter with appropriate governance and identify priority areas for the Koshi Disaster Risk Reduction Knowledge Hub (KDKH).

The Koshi DRR Knowledge Hub is a member-led platform initiated in December 2018 to strengthen the science-policy-practice link and improve transboundary collaboration. The secretariat of the Hub is ICIMOD. The country consultation was organized in collaboration with the National Planning Commission and the Central Department of Hydrology and Meteorology (CDHM), Tribhuvan University, Disaster Preparedness Network-Nepal, International Water Management Institute (IWMI), Lutheran World Relief (LWR), the United Nations Development Programme (UNDP) and the United Nations Children's Fund (UNICEF). A series of panel discussions, working groups and presentations were conducted with over 90 participants on 23–24 September 2019 in Kathmandu.

The discussions highlighted that government agencies have mandates related to disaster risk reduction. Nepal's Disaster Risk Reduction National Strategic Plan of Action emphasizes reducing multi-hazard risk reduction. Cross-sectoral collaboration, coordination and international collaboration are also prioritized in the plan. Particularly, there are knowledge gaps at different levels in terms of implementation of policy, data and information as well as human resource capacities. Disaster management policies and plans that are being drafted at the local and provincial level could benefit from improved understanding of the basin and disaster risk reduction solutions.

The seven working groups on policy advocacy, glacial lake outburst floods (GLOF), floods, droughts, landslides and sedimentation, community based disaster risk reduction, and knowledge management and communication presented their group's objectives, challenges and opportunities and the way forward. All groups acknowledged that working groups would be useful in addressing some of the challenges identified, and building available knowledge and skills. In addition, working groups could also better inform policy and identify gaps for further investment.

The Floods Working Group noted that there are challenges related to limited and standardized data on floods. Risk and vulnerability data that is sex disaggregated is not available. Little priority has been given to adaptation, mitigation and preparedness. Government and non-government agencies need capacity building. Often, policies and research lack community feedback and local knowledge. To improve flood risk management, the group noted that it could provide technical input to local and provincial DRR policies and frameworks. It could also work on joint research and collaborative projects to reduce duplication and build on existing knowledge. The group could also contribute to standardization of flood monitoring and forecasts to benefit communities.

The Landslide and Sedimentation Working Group noted that development activities could be contributing to landslides and increased sedimentation. There is limited knowledge on the cause, process and impacts of landslides and sedimentation, particularly on livelihoods. Risk sensitive land use zoning and livestock grazing regulations could also be strengthened. The group could contribute by synthesizing current knowledge and conduct research on rainfall induced landslides. It would also provide technical inputs to ongoing policies and programmes, such as the Watershed Management Act and the Rastrapati Chure Conservation Program.

The GLOF Working Group noted that the major challenges to reducing GLOF risks have to do with conducting field surveys of remote glacial lakes, and installing and checking the functioning of GLOF early warning systems. There is a difference in understanding between scientists and communities. There is a need to increase regional, national and local linkages because some of the potentially dangerous glacial lakes identified are in upstream China. The group could work on identifying GLOF risks and exploring ways in which it can be reduced. GLOF studies can be included in school and college curricula, and high altitude wetland research can also be promoted.

The Drought Working Group noted that existing policies do not adequately address drought. There isn't enough spatial coverage and quality data to inform actions on drought risk reduction. This is at a time when springs in smaller catchments in the mid-hills are drying, making drinking water scarce and increasing drudgery of women. In larger catchments, agriculture and long term productivity of land need to be understood in relation to drought. There is much potential to expand the knowledge base for understanding drought and to inform appropriate solutions for drought management.

The Community Based Disaster Risk Management Working Group noted that access to information and participation by vulnerable communities and marginalized groups on DRR is limited. Local level early warning systems need to be monitored. The community based disaster risk reduction platform led by the Ministry of Federal Affairs and General Administration, Nepal can be linked with this hub. Emphasis on enhancing livelihoods and addressing community needs should be prioritized.

The Policy Advocacy Working Group noted that there are communication gaps between researchers, policy makers and communities. There is also confusion among the three tiers of government regarding their roles and responsibilities when it comes to addressing DRR. Policy makers must work closely with the scientific community to ensure that all policies made and passed are informed and guided by science-based evidence. The policies should also be inclusive and community oriented.

The Knowledge Management and Communication Working Group emphasized that communication is a critical aspect of DRR, whether it is between different stakeholders or part of the larger dissemination of risk information. Language and illiteracy are common barriers, but they can be overcome by using alternative media such as radios and investing in understanding the information needs of communities. The private sector can also be engaged in information dissemination.

It was agreed that the formation of the country chapter would facilitate the activities of the working groups and collaboration with other country chapters. It was recommended that the country chapter should ensure productive links with the government and with existing national and local platforms. It was decided a core group would hold further discussions with the National Planning Commission to formalize the country chapter.

Background

The Koshi River drains the east-central Himalaya for about 75,000 km^2, flowing from Tibet and through Nepal before joining the Ganges in north Bihar in India and eventually flowing into the Bay of Bengal. Water-induced hazards are quite common in the Koshi basin and often have transboundary impacts; upstream hazards lead to disasters in downstream areas, affecting millions of people. Glacial lake outbursts floods (GLOFs), landslides and sedimentation, floods, and droughts are common in the basin. Moreover, extreme weather events have cascading impacts and are expected to magnify in frequency and intensity because of climate change and environmental degradation. From 1954 to 2014, Nepal faced a total of 41 flood events, which killed almost 6,500 people.

Losses due to floods adversely affect communities through the destruction of standing crops, livestock, infrastructure, and machinery, in addition to tragic loss of human life. Women and marginalized communities are most vulnerable to such adverse events as they lack access to information and the capacity to prepare for disasters and deal with the aftermath. Despite the rich natural resources and water available, people living in the Koshi basin are poorer compared to the rest of the population in their respective country, and this is primarily because of the annual floods and related devastation. The resulting financial burden is often backbreaking for the communities in the basin.

Although there have been efforts to improve disaster risk reduction (DRR) in the Koshi basin, related policies and practices need to be strengthened using a multi-hazard approach. Upstream-downstream linkages in the basin can serve as a basis for managing shared disasters and provide opportunities for DRR and livelihood improvement. Effective cooperation can be achieved by sharing knowledge and fostering practices that address the transboundary scale of disasters, which stakeholders often struggle with.

The Koshi Basin Initiative at the International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal conceptualized the Koshi DRR Knowledge Hub (KDKH) as a member-driven platform to foster transboundary collaboration and promote science, policy, and practice linkages for water-related disasters, and is also the Secretariat of the Hub.

The Hub was developed through a consultative process with various stakeholders between December 2017 and December 2018 to address DRR in the basin as a multifaceted, interdisciplinary and transboundary issue. This was made possible with support from several partners across the basin who have been collaborating to comprehensively understand disasters in the basin through a common vision, scope, success indicators and working areas.

The major objectives of the country consultation were to:

1. Identify issues and opportunities for upstream and downstream collaboration and for strengthening science-policy-practice linkage in the Koshi basin on water-related DRR from Nepal's perspective.
2. Discuss the structure and formation of the Nepal country chapter with appropriate governance and identify priority areas for the KDKH.

The Nepal country consultation was organized on the 23–24 September 2019 at Hotel Himalaya in collaboration with the National Planning Commission (NPC), Government of Nepal. The event was also supported by the Central Department of Hydrology and Meteorology (CDHM), Tribhuvan University, Disaster Preparedness Network-Nepal, International Water Management Institute (IWMI), Lutheran World Relief (LWR), the United Nations Development Programme (UNDP) and the United Nations Children's Fund (UNICEF).

Consultative process

The event brought together participants from government agencies, academic institutes, civil society, development organizations, media and the private sector. The first session provided the background of the Koshi basin and the objectives of the consultation. It was followed by a panel discussion with the government representatives to understand their priorities in terms of improving disaster risk reduction. Next, community leaders from the mountains, mid-hills and plains and civil society members shared localized challenges of DRR and building a resilient Koshi basin.

To take stock of ongoing activities in the basin and challenges and opportunities for DRR, the

participants were divided into working groups (WGs) focused on different topics – floods; glacial lake outburst floods (GLOFs); landslides and sedimentation; droughts; community based disaster risk management (CBDRM); policy advocacy; and knowledge management and communication (KMC). The groups included experts in the respective fields and outcomes of the group activities were shared on Day 2 (see Annex 1). On Day 2, participants discussed in groups the potential structure of the KDKH country chapter for Nepal and provided their inputs to the structure. A smaller group was formed to formalize the country chapter.

SECTION 1

The Koshi basin: A multi-hazard environment and a shared resource

A1. Setting the context

WELCOME REMARKS BY DAVID MOLDEN, DIRECTOR GENERAL, ICIMOD

- The Koshi River is a lifeline for millions of people in Nepal, India and China where there is opportunity for sustainable development.
- Three countries share the basin – the disasters and as well as the opportunities.
- A comprehensive understanding of the basin is needed to build resilience in the basin.
- Multi-stakeholders have come together to share their experiences related to the basin and form the country chapter of the KDKH.
- The KDKH provides a platform to identify knowledge gaps and ways to fill those gaps and support transboundary collaboration.
- ICIMOD as the secretariat for the KDKH hopes the discussions over the two days will expand understanding of issues in the Koshi basin and lead to the formation of the country chapter.

OPENING REMARKS BY DIL BAHADUR GURUNG, MEMBER, NATIONAL PLANNING COMMISSION

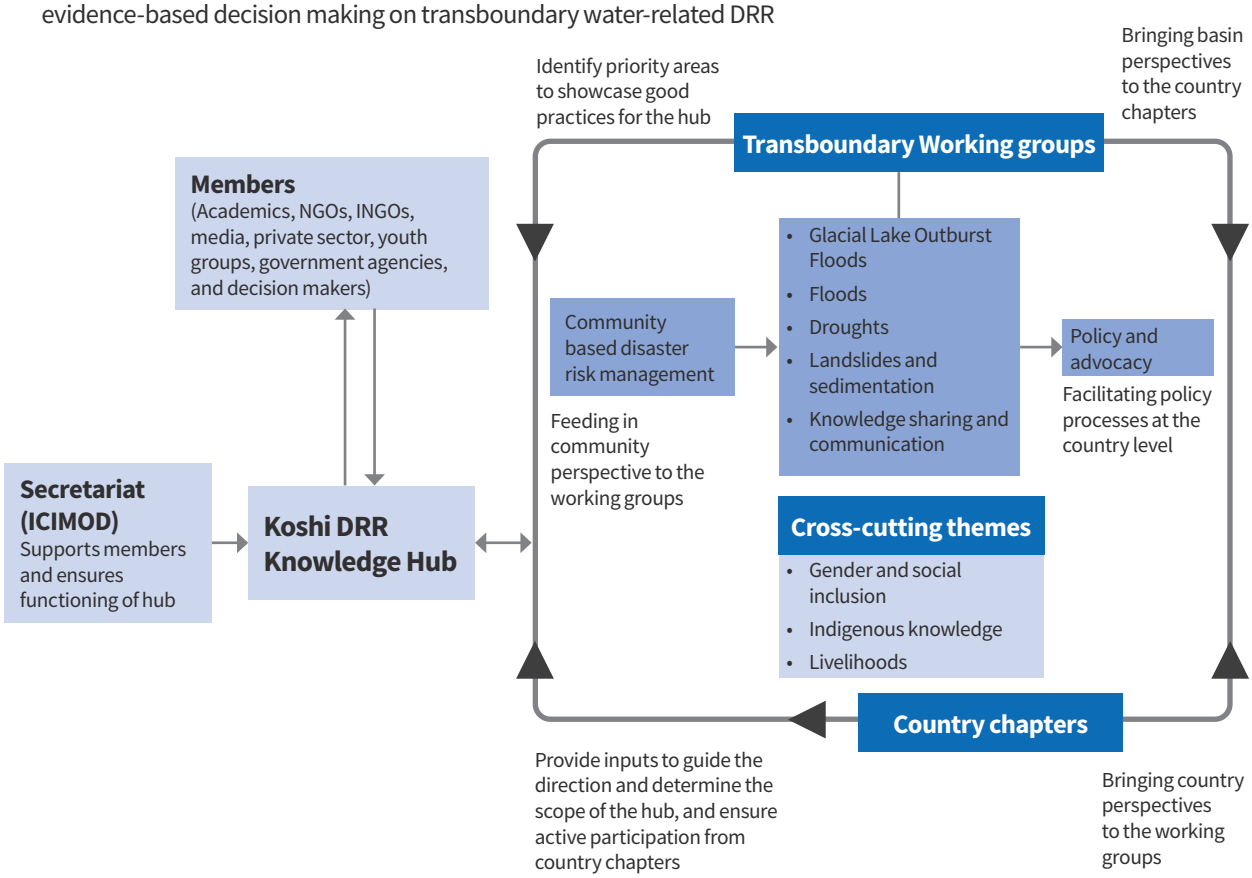
- The Koshi basin faces severe water-induced disasters that have transboundary effects, causing significant loss of life and property – e.g., Terai flood in 2017; GLOF in upstream of the river basin and its impact in upper and lower stream of the river basin in Nepal. Similarly, sedimentation is a source of nutrients but needs better management.
- Cross-border collaboration and cross-sector sharing of knowledge is very important for DRR.
- This consultation is an excellent platform for bringing together various experts for transboundary collaboration and for improving uptake of good practices.

  The National Planning Commission always supports the formation of this kind of knowledge hub and supports the formation of the country chapter.

OBJECTIVES AND SCOPE OF THE KOSHI DRR KNOWLEDGE HUB BY KANCHAN SHRESTHA, PROGRAMME COORDINATOR, KOSHI BASIN INITIATIVE, ICIMOD

- The Koshi River a transboundary basin rich in natural resources but faces frequent disasters.
- It has high sedimentation load and shifting of the river channel has been occurring.
- Twenty-two GLOFs have till date affected the basin (13 in China and 9 in Nepal); in addition, 6,000 landslides were recorded in Nepal, along with almost 600 floods in the last 50 years.
- Given the upstream-downstream linkages, strong collaborative effort is needed for disaster risk reduction, including transboundary collaboration.
- The Koshi DRR Knowledge Hub has two major objectives: to improve transboundary collaboration, and to strengthen linkages between scientists, practitioners and policy makers.
- Nepal's Disaster Risk Reduction National Strategic Plan of Action seeks to meet a number of targets by 2030. These include: reduce Gross Domestic Product (GDP) loss to 0.1% per year; reduce GLOF risks in seven lakes; increase riverbank protection; increase coordination by 100%; and increase multi-hazard risk monitoring and early warning by 100%.
- The Strategic Plan of Action also emphasizes promotion of transboundary and international collaboration on disaster risk reduction.
- The Knowledge Hub can support the above goals of the Strategic Plan of Action.

FIGURE 1 **DRAFT STRUCTURE OF THE KDKH**



A2. Priorities of the government for DRR in the Koshi basin

SETTING THE CONTEXT: ARUN B. SHRESTHA, REGIONAL PROGRAMME MANAGER, RIVER BASINS AND CRYOSPHERE, ICIMOD

- In the Koshi basin, seasonal variation and temporal variation of water resources are very high.
- There is potential for hydropower but GLOF and erosion are major problems. In the mid-hills: there is potential for agriculture, hydropower, aquifer recharge but erosion and sedimentation are major problems. In the lowland: industry, large settlements, irrigation, navigation are potential areas but ground water depletion, flood, flash flood are major problems. There is a strong upstream to downstream linkage.
- Disasters see no political boundary. So transboundary collaboration is essential (10% of all floods are transboundary).
- Regional cooperation on water is important for a) ensuring water availability throughout the year, b) reducing risks of climate change impacts, c) striking a balance between economic and environmental needs, and d) overcoming economic, environmental, technological and institutional barriers.
- Challenges for regional cooperation include: hydro politics and mistrust, top-down approach, knowledge gaps as well as misinformation leading to misinterpretation.
- There is need to shift from the conventional approach of resource sharing to benefit sharing, as well as to develop joint management plans.
- Recognizing the importance of transboundary cooperation is a prerequisite for achieving water-related Sustainable Development Goals (SDGs).

Panel discussion[1]

KEDAR PRASAD PANERU, JOINT SECRETARY, MINISTRY OF FEDERAL AFFAIRS AND GENERAL ADMINISTRATION

- Disaster causes significant loss of life and property and the local government has to deal with it using limited resources.
- Industrialization and maximum utilization of natural resources needs to be balanced, as in the case of hydropower and other development projects.
- Programme duplication must be minimized and knowledge and information should be developed with coordination among various stakeholders.
- The Knowledge Hub can contribute to generating knowledge for better implementation of plans and polices.

SINDHU DHUNGANA, JOINT SECRETARY, MINISTRY OF FORESTS AND ENVIRONMENT

- The Ministry of Forests and Environment has recently established four basin offices and the Koshi basin office is located in Udayapur.
- However, there is limited study and knowledge of the basin. Most of the focus has been on land protection. Integrated river basin management approaches need to be integrated at various levels, which can contribute to DRR.
- Infrastructure development should not create more disasters and also take into consideration potential disasters. Thus, Environmental Impact Assessment (EIA) needs to be more effective. Local level authorities also have a major role in ensuring proper EIA.

RAM G. KHARBUJA, JOINT SECRETARY, MINISTRY OF ENERGY, WATER RESOURCES AND IRRIGATION

- The main aim of the ministry is to manage the Koshi, Karnali and Gandaki basins and plans are being developed. Groundwater Act is also being developed.
- Progress has been made in recent years in disaster risk reduction. For example, early warning systems and automatic hydrological and meteorological stations are functional and some are being added.
- Lack of trust for data sharing can be solved through building robust partnerships between government, NGOs and INGOs. For example, multi-hazard early warning and data sharing activities are in progress with China.
- DRR should include reconstruction and rehabilitation and long-term planning.
- The Koshi DRR Knowledge Hub is a good platform for building trust and sharing knowledge and developing a comprehensive understanding of the basin.

SHAMBHU PRASAD REGMI, NATIONAL OPERATION EMERGENCY CENTRE, MINISTRY OF HOME AFFAIRS

- The government's first priority is flood disaster and in recent years loss of life due to flood has decreased significantly.
- Early warning has helped reduce loss of life and property but we need more advanced technology for better results.
- More effort is needed to reduce risks of other disasters such as landslides and drought.
- Collaboration between the KDKH and the ministry can be explored further.

HARI PRASAD MAINALI, SECRETARY, MINISTRY OF INTERNAL AFFAIRS AND LAW, PROVINCE 1

- The provincial government is still in its early stage but has already faced two monsoons.
- Information sharing is most important: "Fast information for fast rescue."
- The District Emergency Operation Centre (DEOC) has been developed; the Local Emergency Operation Centres (LEOC) is being developed.
- There is daily data/information flow among the three levels of government.
- The early warning system is not functioning properly and regular maintenance is required.

[1] **Panelists:** Shambhu Prasad Regmi, National Operation Centre Emergency; Kedar Prasad Paneru, Joint Secretary, Ministry of Federal Affairs and General Administration; Sindhu Dhungana, Joint Secretary, Ministry of Forests and Environment; Ram G. Kharbuja, Joint Secretary, Ministry of Energy, Water Resources and Irrigation; Hari Prasad Mainali, Secretary, Ministry of Internal Affairs and Law, Province 1; Krishna Hari Pushkar, Secretary, Ministry of Internal Affairs and Law, Province 2.

- Province 1 is always ready to work on DRR and is working steadfastly though the provincial government was formed quite recently (19 months).

KRISHNA HARI PUSHKAR, SECRETARY, MINISTRY OF INTERNAL AFFAIRS AND LAW, PROVINCE 2

- Province 2 is frequently exposed to disasters and has been facing many problems from the Koshi River.
- A plan of action for Koshi DRR is being developed and it includes evaluation, rescue, search and management. Shelters for flood and drought affected people are under construction and work is also being done for emergency management. Rescue and relief work in tornado-affected areas in Bara and Parsa was quick and effective .
- Sedimentation is a hazard and a sedimentation management action plan is being developed.
- Although many reports have been published, there is still gap between plans and budget.
- The province's technical support needs and capacity is not properly understood; information specific to local context is necessary.
- Collaboration with different stakeholders for improved planning is needed and there is scope for such collaboration with the KDKH.

DIL BAHADUR GURUNG, NATIONAL PLANNING COMMISSION

- Communication is a major tool for dealing with disaster and its impacts.
- Data generation and increase in lead time for forecasting of disasters is very important.
- Knowledge of the range of impact of hazard in each tributary is necessary.
- High priority is given to DRR by the Planning Commission; DRR is integrated in all plans.
- Knowledge gathered from discussion forums like this must reach the grassroots level.
- Integrated effort from all levels is important for action on DRR.
- Capacity building of local people and local level is important for action on DRR.

SECTION 2

At the frontlines of disaster risk reduction in the Koshi basin

Chairperson: Ganga Tuladhar, Former Education Minister and DRR expert

Moderator: Deepak K.C., Senior Programme Officer, Climate Change Adaptation and DRR/CDRMP, UNDP

The major objective of this session was to hear from community leaders and practitioners at the local level about disaster risk reduction, knowledge and policy gaps, as well as opportunities for collaboration.

DURGA BAHADUR THAPA, MAYOR, BELAKA MUNICIPALITY, UDAYAPUR

- The municipality is taking various actions to address DRR. It has formed the Local Disaster Climate Resilient Planning (LDCRP) and the Disaster Risk Reduction-Climate Change Adaptation (DRR-CCA), and developed five-year plans. DRR and CCA learning centres are being established according to the government's guidelines and DRR is being mainstreamed into development through building codes and compulsory plantation (two trees per house). One lakh trees have been planted and 10 lakhs more are to be planted.
- It has also created a task force for rescue and resource mapping and a disaster focal person has been selected. DRR courses are included in the school curriculum (100 marks course on local level hazards).
- A separate ambulance for women and more priority to female and children in rescue is planned.
- Riverbed farming for adaptation is also being practiced.
- The municipality would like to learn more about improving livelihood through large-scale riverbed farming and strengthening community-based early warning systems. The knowledge hub could provide such knowledge.
- To ensure that the interventions are sustainable, the municipality is taking ownership of the interventions and allocating adequate budget, carrying out capacity building and sustainability planning and working with other stakeholders.

SATISH SINGH, MAYOR, TILATHI KOILADI RURAL MUNICIPALITY, SAPTARI

- The municipality has prioritized protection from hazard. Hazard prone areas and safe areas have been identified. Life jackets and training have been provided.
- A Community Based Flood Early Warning System has been established and funds for its sustainability has been allocated.
- A nursery has been developed for plant distribution; more than 100,000 saplings have been planted.
- Major problems in the municipality are groundwater depletion and increasing contamination of drinking water. Siltation level is very high, which leads to shifting of the river and makes disaster management more complex.
- There is also lack of budget and technical support and limited human resources.
- The Knowledge Hub could provide technical support to improve disaster management.

LAXMAN ADHIKARI, WARD CHAIRPERSON, KHUMBU

- The challenges faced in the upstream high-altitude Koshi basin are complicated because of the remote and difficult terrain. GLOFs and avalanches are some of the major disasters.
- Helicopters have to be used for rescue as there are limited roads. The airports are too congested to be able to carry out quick rescue and relief operations.
- A more effective and real-time forecasting system is necessary for GLOFs. A walkie-talkie

station with different frequencies has been set up as phone lines are not very reliable in this region.

- There is lack of coordination among NGOs, INGOs and local people and limited knowledge sharing.
- The municipality would like to seek more support for improving early warning for GLOFs.

DEO NARAYAN YADAV, EXECUTIVE DIRECTOR, KOSHI VICTIMS SOCIETY

- The Koshi basin faces multiple disasters that cannot be controlled but can be managed.
- There are limited human resources for rescue during disasters and gap in information dissemination for early warning.
- Government and non-government organizations should also coordinate with the local community.
- Trainings and materials should be provided to the local community as community members are the first to face and act during and after a disaster.
- Capacity building, communication and knowledge transfer from the local to transboundary level could improve disaster risk reduction.
- Indo-Nepal citizen forums have been developed which can work with the KDKH to strengthen technical knowledge.

ARYA REGMI, PROGRAM COORDINATOR, NEPAL RED CROSS SOCIETY

- Red Cross Society has been working with the most vulnerable communities focusing on disaster risk reduction (since 2014) with the objective to develop leadership in the community.
- Nepal already has operational plans, guidelines, and strategic plans for DRR, but there is limited capacity for effective implementation.
- Coordination and knowledge sharing needs to work well for DRR.
- Resource duplication should be avoided for maximum utilization of resources.
- Cross country support and sharing of success stories/best examples is important.

SUNITA KAYASTHA, EMERGENCY SPECIALIST, UNICEF

- The DRR Act has shifted the focus from relief to preparedness.
- Multi-hazard risk reduction plans should be developed and evacuation routes should be identified.
- Children are more vulnerable during disasters but are also change agents for DRR.
- Technical support should be provided to the local community as well as local government.
- Vulnerable people and communities should be identified and provided a platform for sharing their concerns.
- A multi-sector and transboundary research team must be developed for integrated knowledge generation and evidenced based research.
- The KDKH can be a good platform for DRR when linked with existing platforms and networks.

GANGA LAL TULADHAR, FORMER EDUCATION MINISTER AND DRR EXPERT

- Perspectives from upstream, middle stream and downstream of the Koshi basin revealed the complexity of DRR in the Koshi basin.
- All three tiers of government need to integrate DRR into their actions.
- Communities are the most powerful actors for rescue and relief.
- If we understand disasters better, we can prevent disasters; thus a comprehensive understanding of disaster is needed.
- Strong collaboration for transboundary DRR is needed.

Discussion

WHAT SHOULD BE DONE TO REDUCE THE RISK OF DISASTERS?

- Appropriate human resources equipped with knowledge and information for improved planning for disaster risk reduction.
- Technical support, capacity building and coordination
- Joint research and sharing of good practices between countries.

SECTION 3

Identifying knowledge and policy gaps for DRR in the Koshi basin

Moderator: Kanchan Shrestha, Programme Coordinator, Koshi Basin Initiative, ICIMOD

Panelists: Biju K. Shrestha, Joint Secretary, National Planning Commission

Participants were divided into seven working groups[2] to discuss the given questions:

GUIDING QUESTIONS

- Stock taking: Issues and interventions by group members
- What are the issues and opportunities for strengthening science-policy-practice linkage? How can the group contribute and benefit from tapping into these opportunities?
- What are the issues and opportunities for strengthening transboundary collaboration? How can the group contribute and benefit from tapping into these opportunities?
- What could be the objectives of the working group, and how can it function effectively?

On Day 2, the working groups presented the objectives of the groups, ongoing activities, opportunities and challenges, and potential actions for ensuring the sustainability of the hub functions. Details of the group work are provided in Annex 1.

Discussion after the presentations:

- Climate change and DRR need to be interlinked.
- The early warning system in Dhanusha helped save the lives of 2,000 people. Such systems need to be expanded.
- How can transboundary collaboration with China be enhanced to increase lead-time for early warning for GLOF?
- There is need to review policies and provisions – for example, a family that has lost their animal shelter due to floods cannot claim compensation under existing policy.
- How can the benefits be maximized?
- High-altitude sickness should also be considered as disaster.
- Sedimentation and haphazard road construction needs to be managed better.
- How can livelihoods such as fishing and farming be integrated into DRR plans?
- It is necessary to have up-mid-downstream and cross boundary cooperation and coordination for DRR.
- All three provinces, communities and local bodies need to be brought together on a common platform going forward.
- The KDKH can bring scattered knowledge into one platform.
- Armed forces should also be included in the next dialogue.

Closing remarks by Biju Shrestha, Joint Secretary, National Planning Commission

- Without managing disasters, development is not possible. We should take a strategic approach to disaster management at the river basin level.
- Policies, research and development efforts must reach the local level.
- Migration due to drought is occurring and has longer term impact than floods; thus drought management must be prioritized.

[2] Working group division: Floods, GLOFs, Landslide and Sedimentation, Drought, Community Based Disaster Risk Management, Policy Advocacy, Knowledge Management and Communication (combination of researchers, practitioners, decision makers, private sector, media)

SECTION 4

Koshi DRR Knowledge Hub country chapter

Moderators: Santosh Raj Pathak and Sadiksha Guragai, Strategic Cooperation Unit, ICIMOD

Chairperson: Kiran Rupakhetee, Joint Secretary, National Planning Commission

To address DRR in the basin, participants in four groups discussed the structure of the country chapter of the KDKH and presented their ideas and inputs to the proposed structure Figure 2.

KRISHNA HARI PUSHKAR, MINISTRY OF INTERNAL AFFAIRS AND LAW, PROVINCE 2

- Need further discussion focusing on both legality and legitimacy; the NPC can coordinate the discussion.
- All feedback will be addressed and incorporated into the proposed structure. Necessary to have up-mid-downstream and cross boundary integration.

BADRI DHUNGANA, JOINT SECRETARY, MINISTRY OF FOREST AND ENVIRONMENT

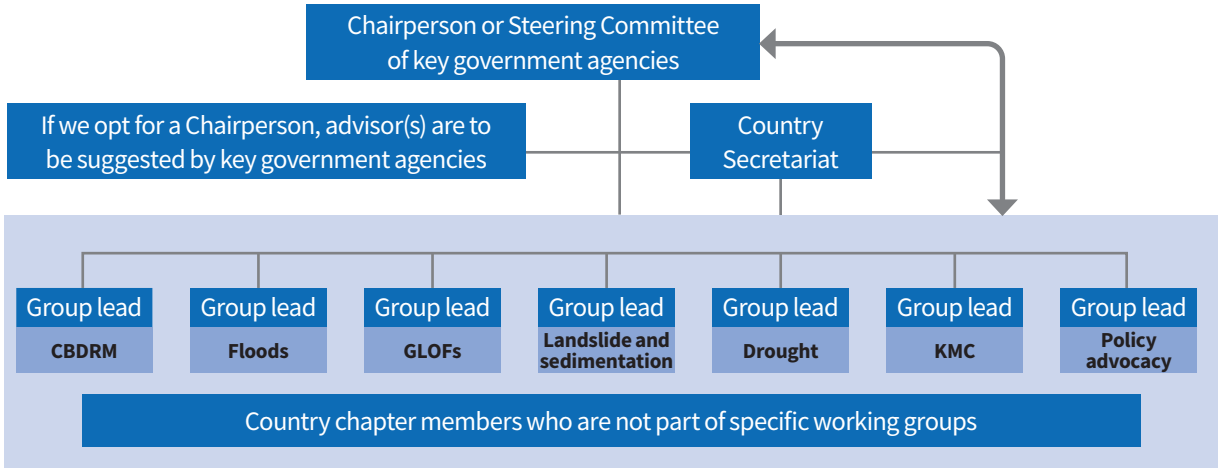
- Disaster is a multidimensional issue which the KDKH can help address.
- All three provinces, communities and local bodies need to be incorporated into the KDKH.
- ICIMOD can discuss further with the NPC and the final decision can be made later.

KIRAN RUPAKHETEE, JOINT SECRETARY, NATIONAL PLANNING COMMISSION

- The NPC will work closely with ICIMOD for the finalization of the hub structure.
- The KDKH is a multi-stakeholder platform and the government has to lead it as they deal with different countries.
- At the end, information dissemination should be both horizontal and vertical.
- The KDKH can provide a platform for development partners to reduce disaster risks.
- The KDKH can learn form other networks (such as the Upper Indus Basin Network).
- Development partners, civil society, local communities including women should be incorporated in the Hub structure.

Decision made: The floor decided to form a core committee to hold further discussions with the NPC and all relevant stakeholders to formalize the country chapter.

FIGURE 2 PROPOSED STRUCTURE OF THE KDKH NEPAL COUNTRY CHAPTER



SECTION 5

Role of media in disaster risk reduction

Moderator: Ramesh Bhushal, Nepal Editor, thethirdpole.net

- Communication should be simple and understandable; identification of audience needs and responses, and suitable communication media and materials is important while working in different places to ensure that targeted messaging.
- Identification of the level of audience is important.
- Media does not exist in isolation but is part of the issue at hand; hence, collaboration is key.
- Science based media; understanding the context is important before disseminating information.

Panelists

RAJENDRA DAHAL, EDITOR, SHIKSHAK (MONTHLY MAGAZINE)

- The Koshi basin is regarded as a major issue of the Terai only; highland areas do not get enough media coverage.
- There is inadequate research on rivers and other related topics.
- Media persons must be provided more knowledge to understand technical issues of the Koshi.
- Water issues are not part of the national debate due to limited knowledge of the subject.
- Technical messages of the DHM are very difficult for local people to understand.
- Media houses are for-profit organizations; readers don't pay attention to environmental issues so it is difficult to publish news about such issues.

BHOLA PASWAN, LOCAL JOURNALIST

- People working at the local level are not invited to big forums or platforms. "It's the first time I am talking about Koshi disaster on this platform."
- Limited evidence and information sharing
- Media only gives attention during and after disaster not before disaster.
- Sustainable low-cost solutions are ignored in favour of costly projects such as big dams.
- Local stories do not get enough coverage in the national media.

RATNA CHAUDHARY, RADIO NEPAL

- Censorship is an issue.
- Koshi news is not getting as much attention as it should have received.
- Women are discouraged from going to the field and collecting data.
- Media persons have their own areas of focus so they cannot speak knowledgeably about all issues.
- Women are highly discouraged from covering cases that are political in nature.

NIMESH REGMI, GENERAL SECRETARY, NEFEJ AND FORMERLY WITH SAGARMATHA FM

- Practice of in-depth study is decreasing.
- Private media are focused more on revenue collection.
- Critical views are lacking.
- Media houses don't understand issues as much as local people or local reporters.
- The DHM should relay messages in a more reliable and understandable way.

Discussion

- Reporters should report about small damages too and provide gender-focused news as well.
- Impacts on ecosystems and biodiversity are not considered.
- Reporters should be trained to gather and disseminate reliable news.
- Journalists mainly focus on TRP.

SECTION 6

Leveraging improved collaboration for DRR in the Koshi basin

Chairperson: Tania Dhakhwa, Chief of Communications, UNICEF Nepal

Panelists

DEEPAK ARYAL, HEAD OF DEPARTMENT, CENTRAL DEPARTMENT OF HYDROLOGY AND METEOROLOGY (CDHM), TRIBHUVAN UNIVERSITY

- The CDHM is carrying out two scientific projects that began last year – one in the upstream mountain and another downstream of the Kankai region
- In the high mountain region, in collaboration with the CAS and Nat Geo, the CDHM has set up an automatic station.
- Hazard mapping in Babai and Kankai in eastern Nepal
- Academic syllabus is very old and has to be changed, which is planned for 2020.
- Disaster issues should be taught in schools.

ACHYUT LUITEL, REGIONAL DIRECTOR, PRACTICAL ACTION

- Practical Action has been working on early warning systems for 15 years with several organizations including universities to generate evidence.
- Indigenous knowledge needs to be integrated in DRR.
- Our experience and knowledge can be shared with the KDKH and we can also learn from other stakeholders.

JAYA SIWAKOTI, CHAIRPERSON, SOCIAL SERVICE UNIT, FEDERATION OF NEPALESE CHAMBERS OF COMMERCE AND INDUSTRY (FNCCI)

- Hydropower is a major source of income for Nepal and thus needs to be protected from disasters.
- FNCCI is collaborating with Kathmandu University (KU) and with Tribhuvan University (TU).
- It is easier to build relationships in business, even across boundaries, as we speak a similar language.
- FNCCI could benefit from knowledge generated by the KDKH to secure investments.

RAJU THAPA, GENERAL SECRETARY, DISASTER PREPAREDNESS NETWORK-NEPAL

- Disaster Preparedness Network-Nepal (DPNet-Nepal) is an umbrella organization and provides information to all through a central repository.
- There are many types of information but they are scattered; using the application, the problem of information dissemination can be managed.
- We should make maximum use of the Knowledge Hub to understand disaster risks and save lives.

SIMON LUCAS, TEAM LEADER, RESILIENCE AND INCLUSION TEAM, DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID), NEPAL

- Preparedness activities are more important for managing disaster risks.
- DFID has been contributing to resilience building in Nepal and information on its activities can be shared through the Knowledge Hub.

Discussion

- Changing the syllabus is a very good idea.
- During disaster, mobile phones stop working, causing difficulty in communication and information sharing.
- During any construction, disasters should be taken into consideration.
- Armed forces should also be included in the next dialogue.
- Measurement of river cutting is necessary.

CLOSING REMARKS FROM TANIA DHAKHWA, CHIEF OF COMMUNICATIONS, UNICEF

- Disasters have huge implications for future generations.
- Coordinated actions should be taken immediately to ensure that benefits of the river and river basin are sustained.

SECTION 7

Summary and closing remarks

KIRAN OJHA, COUNTRY DIRECTOR, LUTHERAN WORLD RELIEF

- Communities are connected across boundaries and share information on early warning and also rely on early warning from the government and others.
- Good practices can be promoted by the KDKH and LWR can also contribute

AYSHANIE MEDAGANGODA-LABE, RESIDENT REPRESENTATIVE, UNDP

- To build resilience partnership and trust among stakeholders is important.
- Climate change issues should also be integrated.
- The UNDP is working in various areas in the Koshi basin and we are ready to work collaboratively with the KDKH to maximize benefits to the communities.

BIJU K SHRESTHA, JOINT SECRETARY, NATIONAL PLANNING COMMISSION

- This consultation has been very informative and it has emphasized evidence-based planning.
- The National Planning Commission will work further on developing the country chapter for the KDKH.

EKLABYA SHARMA, DEPUTY DIRECTOR GENERAL, ICIMOD

- The KDKH is a common platform for stakeholders to improve understanding and decision making.
- Discussions have been productive and will contribute in the establishment of the country chapter for the KDKH.
- Thankful to all the partners, co-organizers and participants and supporters

SECTION 8

Conclusion and the way forward

During the two-day consultative process, over 90 participants from different sectors including government officials, academics, practitioners, civil society members and media persons discussed disaster risk reduction issues in the Koshi basin. The following were the key messages from the discussion:

1. The Koshi basin is a transboundary environment rich in opportunities. Disasters such as glacial lake outburst floods, landslides, sedimentation, floods and droughts are common in the basin and require collaboration across sectors and among policy makers, academics, practitioners and communities. Upstream-downstream collaboration and coordination is also important for designing and implementing solutions that reduce disasters and build resilience. Disasters are often transboundary in nature and require collaboration across administrative and political boundaries.

2. The National Planning Commission, Ministry of Home Affairs, Ministry of Energy, Water Resources and Irrigation, Ministry of Federal Affairs and General Administration, Ministry of Forests and Environment have mandates to contribute to disaster risk reduction. Nepal's Disaster Risk Reduction National Strategic Plan of Action also emphasizes reducing multi-hazard risk reduction. Cross-sectoral collaboration, coordination and international collaboration is also prioritized in the plan.

3. The federalization in Nepal provides a unique opportunity to increase coordination and collaboration. Particularly, there are knowledge gaps at different levels in terms of implementation of policy, data and information as well as human resource capacities. Disaster management policies and plans that are being drafted at the local and provincial level could benefit from improved understanding of the basin and disaster risk reduction solutions.

4. The seven working groups on policy advocacy, glacial lake outburst floods, floods, droughts, landslides and sedimentation, community based disaster risk reduction, knowledge management and communication presented their group's objectives, challenges and opportunities and the way forward. All groups acknowledged that working groups would be useful in addressing some of the challenges identified and building available knowledge and skills. In addition, working groups could also better inform policy and identify gaps for further investment.

5. All participants recognized that a country chapter is needed to facilitate the functions of the working groups and collaboration with other country chapters. It was recommended that the country chapter maintain productive links with the government and with existing national and local platforms.

6. It was decided that a core group would hold further discussion with the National Planning Commission to formalize the country chapter.

Annexes

Annex 1: Discussion on Nepal country chapter formation and the role of each working group

WORKING GROUP: FLOODS

Group members	• Rakesh Kumar Shah – LWR (presenter) • Vijay Khadgi – ICIMOD • Pradeep Dangol – ICIMOD • Kiran Shakya – ICIMOD • Dharam Uprety – Practical Action • Bikram Shakya – ICIMOD • Binaya Kumar Mishra –Pokhara University • Saroj Dev – UNDP • Tirtha Raj Adhikary – Tribhuvan University • Aaditya Bastola – ICIMOD
Objective	Strengthen the technical capacity • Capacity building • Integrate multiple hazards taking a basin-wide approach; Integrated Watershed Management Plan; formal and informal curriculum development at local level; materialize the science (research)-policy-practice linkages
Challenges	• Lack of Common Alerting Protocol (CAP) for EWS (national level) • Data – Data gap: Insufficient coverage + DHM needs time to publish. – Data quality: No standards for data gathering. Inconsistency in data – Data sharing: No data sharing policy–both national and transboundary – Risk and vulnerability disaggregated data unavailable (*Socio-economic and gender at community level*) • Limited capacity of provincial and local govt. for flood preparedness • Limited number of stations leading to limited coverage for monitoring and forecast. • Hydro-met stations operated by agencies other than the DHM; not linked with the DHM and the national forecast system. • Poor budget allocation for DRR from all three levels of government. • Less priority to adaptation, mitigation, preparedness and reactive mode of the DRM. • Duplication/overlap and inconsistency • Limited disaster rescue capacity and shelter • Research not always consistent with previous research (validity) • Missing last mile connectivity • Building codes, hazard mapping, safe urbanization, etc. not practiced (haphazard infrastructure in the flood zone) • Limited capacity of national/provincial, and local government with regard to technical and social aspects of DRR/M • Top-down policy formulation. Missing community feedback and local knowledge • Sustainability of hydro-met stations
Opportunities	• Provincial governments and local government are drafting appropriate localized DRR policies and frameworks. • Development partners are showing more interest in strengthening EWS and DRR/M. • Existing system for flood monitoring, forecast and dissemination. • Multiple partners can follow common agreed standards for flood monitoring and forecast. • Ensuring sustainability of EWS at local government level. • Policies and institutions are in place from the central to local level. • Research cooperation/joint research can be carried out by different concerned government and non-government agencies. • Possibility for resource generation (GCF, WB, ADB, other ODA)

Way forward	• Communication through group email for general information sharing and update. Bi-monthly meeting for discussion and action plan. • Formation of social media group - Viber group, Facebook, e-mail group; group members meet on site every two months. • Sharing of knowledge/experiences for strengthening flood resilience in Koshi. • Some resources are available at lead and co-leads. However, allocation of financial resources is necessary for meetings, consultations, workshops, coordination with government agencies and capacity building of the group members. ***Knowledge products:*** • Issue briefs, briefing notes/policy notes, joint blogs, newspaper articles, documentaries, journal articles/research findings/media/ TV interviews, case studies, best practices, reports, consultation workshops, project briefs, reports

WORKING GROUP: LANDSLIDE AND SEDIMENTATION

Group members	• Ashok Sigdel, Department of Geology, Tri-Chandra (presenter) • Narendra Khanal, Central Department of Geography (TU) • Nirmal Thapa, DoFSC • Nagdev Yadav, CDAFN • Bijendra Krishna Singh, MoFE • Thakur Prasad Magranti, DoFSC • Moti lal Ghimire, Central Department of Geography (TU) • Nilhari Neupane, ICIMOD • Santosh Nepal, ICIMOD • Kripa Shrestha, ICIMOD
Objective	• Cause, process and impacts of landslides and sedimentation (livelihood; cost benefit analysis) • Cascading effect of hazards • Integrated river system management • Knowledge platform supporting scientific research (literature) • Sharing of good practices • Policy should incorporate risk reduction of the cascading effect (evidence based policies) • Community participation
Challenges	• Development and disaster preparedness should go together (lack of scientific analysis for road construction). • Deforestation • Risk sensitive land use zoning; livestock management (open grazing) • Knowledge sharing and knowledge gaps, more duplication • Settlement in vulnerable areas • Lack of coordination • Lack of better options for vulnerable communities
Opportunities	• Student involvement in activities • Updating watershed management act in the context of federal restructuring • Knowledge synthesis and sharing • Research on rainfall induced landslides • Stakeholder mapping (DHM, Koshi basin office, Udayapur); networking and coordination with relevant stakeholders; lead institutions in Nepal (Koshi basin office, Udayapur) • Rastrapati Chure Programme (For Province 1 Morang, and Province 2 Dhanusha)
Way forward	• Group email, meet every three months • Increase female members in the working groups • Group interaction, learning from each other, visiting good practices ***Knowledge products*** • Joint proposals, newspaper articles, best practice observations

WORKING GROUP: GLOFS

Group Members	• Rakesh Kayastha, KU (presenter) • Laxman Adhikari, Khumbu Pasang Lhamu ward no. 4 Chair • Finu Shrestha, ICIMOD • Sunwi Maskey, KU • Rijan Bhakta Kayastha, KU • Narendra Raj Khanal, CDG-formal • Prerana Lama, UNDP • Manisha K.C, CDHM • Sharad Joshi, ICIMOD • Prabesh Dhungana, CDHM • Sushila Kandel, CDES • Dibas Shrestha, CDHM
Objective	• To discuss the status of glacial lakes and GLOFs • Identify key challenges and opportunities for reducing the GLOF risk • To establish regional, national and local level linkages to build GLOF risk resilient communities
Challenges	• Outburst flood from small and supra glacial lakes • Installation and functioning of GLOF EWS (e.g., Tsho Rolpa) • Field survey of very remote and inaccessible glacial lakes • Relay information about lake outburst to the downstream • Difference in knowledge of GLOF between scientific and local communities • Short lead time for GLOF from China
Opportunities	• Use of water from glacial lakes for micro hydropower and irrigation • Eco-tourism and recreation • Awareness on GLOF issues to locals • Inclusion of cryosphere/GLOF studies in graduate level courses, high-altitude wetland and aquatic research
Way forward	• Group email, social media, every six months • Contribution based on their expertise ***Knowledge products:*** • Joint blogs, newspaper articles, social media, awareness campaign, community groups (Aama Samuha, youth clubs), provide inventory, data (field, survey), updates, synthesis of findings, joint proposals & research, issue briefs

WORKING GROUP: POLICY ADVOCACY

Group members	• Ram Chandra Neupane, ECO-Nepal, DRRM Expert (presenter) • Hari Prasad Mainali, Secretary, MoIAL, Province 1 • Krishna Hari Puskar, Secretary, MoIAL, Province 2 • Durga Bahadur Thapa, Mayor, Belka Municipality • Ramesh Parajuli, National Planning Commission • Pallav Pant, DIDRR Expert • Raju Thapa, General Secretary, DPNet-Nepal • Suman Karna, DRRM Expert • Laxmi Datta Bhatta, ICIMOD • Badri Raj Dhungana, Joint Secretary, MoFE • Ramesh Vaidya, ICIMOD • Arun B Shrestha, ICIMOD, Facilitator • Deepak KC, UNDP, Facilitator • Kanchan Shrestha, ICIMOD, Facilitator
Objective	• Identification of policy and advocacy issues • Stock taking of policy intervention areas • Proposing a KDKH governance structure

Challenges	• A coordination set up within three tiers of government and also with neighbouring countries (transboundary) • Traditional and general IEE/EIA • Communication gaps between researchers, policy makers and community • Policy gaps/overlaps/confusion about roles and responsibilities • No practice of DIA/RIA and action research • Proper monitoring and evaluation of the initiatives • Resource mobilization management within governments • Inadequate priority of government to research on extreme weather/climate variability on glacier, watersheds, etc. • Inadequate HR of govt. in the areas of extreme weather/climate variability on glacier, watersheds
Opportunities	• Local and provincial governments with full authority • Reaching locals • People to people and business to business networking • Internal and international coordination • Develop scientific and community-based EWS system in upstream and downstream • Internalized DRR through education • Building inclusive policy and planning • Knowledge sharing through KDKH
Way forward	• Group email, Skype call, video conference, social media group, web discussion • Twice a month in the initial phase and quarterly once smooth operation begins • Coordination between other WG for suggestion on policy, guidelines and SoP formulation as well as implementation • Recommendations and technical support to the country team and international chapter for proper policy and guidelines development and implementation • Conduct analysis and get recommendations from action research and other groups • Facilitation to other WG for policy implementation ***Knowledge products:*** • Joint blogs, newspaper, message through social media, TV, radio

WORKING GROUP: DROUGHT

Group members:	• Madan Sigdel, CDHM/TU • Rameshwor Ghimire, DWSSM • Faisal Mueen Qamer, ICIMOD • Madhav Dhakal, ICIMOD • Santosh Nepal, ICIMOD • Krishna Dev, IRRI • Bhaba Tripathi, IRRI • Vishnu Pandey, IWMI • Nischal Karki, KIAS • Deepak Paudel, Nature's Conservation/SOHAM • Piyush Dahal, The Small Earth Nepal
Objective	• Knowledge generation – status of drought, local & regional/basin, gaps in knowledge & policy • Sensitization – workshop, apps, publications – for highlighting the issues, framing in policy/programmes • Resources mobilization – Channelize resources (when possible) to help address drought impacts in the basin
Challenges	• Drought impacts on small catchments – Drying of water sources (springs) - Implications for drinking w/s & livelihoods? • Drought impacts on larger watersheds – Implications for agriculture, food security & nutrient security? – Impact on soil health and long-term production potential of land? – What are threshold values of water needs for different crops? ***Policy gaps*** • The current Water Resources Act does not emphasize drought as a disaster; however upcoming WR Act highlights droughts & risks related to climate change? • Needs technology-based, science-based policies • ADS (Agriculture Development Strategy) does not talk about climate change; drought; and strategies to deal with drought → no integrated system emphasized • Data gap – spatial coverage & data quality • Coordination gap – among sectors (e.g., climate & agriculture)

Opportunities	• Data/evidence generation: • Addressing data gap – wider spatial coverage & better data quality • Package of climate-smart technologies (crop varieties) and practices • Technology for rice-based and maize-based agri-food systems • Scientific analysis of different forms of drought (frequency, magnitude); their mapping to identify critical areas; and analyse their manifestation, etc. • Water resources assessment and management • Water sources mapping, inventory; water availability at Palika/watershed level • Water resources as well as watershed management – policies, programmes • Enhancing water storage and supply, developing irrigation systems • Water storage in various forms (e.g., rainwater harvesting, soil moisture storage, groundwater recharge & aquifer storage, etc.) • Developing irrigation schemes in the hills & Terai, including multi-purpose river-diversion projects, spring water conservation & management – technology, knowledge, tools, capacity • Feasibility study of different types of technologies (e.g., pumps, canals, etc.) • Considering "agriculture" a second priority (next to drinking & sanitation use) water use in policy & practice • Water demand management • Use water efficient technologies (e.g., micro irrigation) • Improved on-farm water management practices • Change crop commodities – shallow to deep crops (for drought-tolerant) • Degraded land management
Opportunities (cont...)	• Use of ITK (indigenous technical knowledge) and knowledge-based farming practices • Real-time drought monitoring & advisory system • Weather forecast, translate into advisory; dissemination • Promoting insurance against drought-related crop/livelihood loss • Awareness raising; sensitization, and capacity development/strengthening • Awareness raising; sensitization; customized trainings • Data & knowledge sharing • Policy dialogues
Way forward	• Meeting virtually; at least once a year and more as needed • Knowledge products: • One publication per year
Working Group: CBDRM	
Group members	• Tikeshwari Joshi - ForestAction Nepal (presenter) • Deo Narayan Yadav - Koshi Victims Society, Saptari • Manohara Khadka - IWMI • Deepak Kumar Jha - Sabal Nepal • Satish Kumar Singh - Chairperson, Tilathi Koiladi Rural Municipality • Bhola Paswan, Journalist, Saptari • Narayan Gyawali - LWR • Anup Poudel - IOM • Sunita Kayastha - UNICEF • Neera Shrestha Pradhan - ICIMOD • Nishikant Gupta - ICIMOD
Objective	• To build capacity of local community people
Challenges	• High siltation • Water drainage seepage • No policy provision for death by drowning • Riverbank cutting and water logging • Climate change impact • Limited coordination/cooperation between government agencies at various levels • Lack of monitoring at the local level (EWS) • Limited human resources • Limited participation of affected community people • Marginalized people have poor access to information. • Language is a barrier. • Working with the state of Bihar, India

Opportunities	• Cross-border communication between communities • Available local resources after state restructuring • Livelihoods and income generation - livestock rearing • Easy access to services - presence of local government • 41% women representation at LGs • 20% marginalized groups & Dalits • Tourist attraction - buffer zone area - Koshi Tappu • Annual & periodic plans are developed integrating DRR • Increased level of awareness of the local people • Establishment of forest, environment and DRR committees
Way forward	Share through group email • Link KDKH- CBDRM group with the MoFAGA-CBDRM platform. • KDKH-CBDRM group can provide info to this platform. • Another round of meeting to build a complete group • Put available case stories on KDKH's webpage • Share information • Collaborative/joint research with government and ICIMOD to facilitate the next meeting • Knowledge products: • Joint proposals, blogs, newspaper articles, issue briefs
WORKING GROUP: KNOWLEDGE MANAGEMENT AND COMMUNICATION	
Group members:	• Richa Ranjitkar, UNDP (presenter) • Debabrat Sukla, ICIMOD (presenter) • Bikram Shakya, ICIMOD • Krishna Hari Pushkar, Province 2 • Laxman Adhikari, Ward Chairperson • Deo Narayan Yadav, Koshi Victims Society
Objective	• To assess communication needs at the country chapter and working group level
Challenges	• Complex communication message • Language barrier & illiteracy • Less technical expertise and training • Limited awareness on disaster response • Misinformation and miscommunication due to lack of designated authority • No clear communication actions after the early warning message
Opportunities	• Leveraging locally available resources • Local emergency operation centre (LEOC) • Utilize local media - FM, community radios • Communicating via right channels (medium) • Civic education and awareness • Private sector engagement (e.g., telecommunication)

Annex 2: Agenda

Time	Activity
Day 1: 23 September 2019	
08:30 – 09:00	**Registration**
09:00 – 09:30	**Session A. Koshi basin: A multi-hazard environment and a shared resource** *A1. Setting the context:* • Welcome remarks by David Molden, Director General, ICIMOD • Objectives of scope of the Koshi DRR Knowledge Hub and the workshop: Kanchan Shrestha, Programme Coordinator, Koshi Basin Initiative, ICIMOD • Opening remarks by Dil Bahadur Gurung, Member, National Planning Commission **Rapporteurs:** Manisha KC and Prabesh Dhungana **Emcee:** Ashmita Shakya
09:30 – 10:30	*A2. Priorities of the government for DRR in the Koshi Basin* **Chairperson:** Dil Bahadur Gurung, Member, National Planning Commission **Moderator:** Arun B. Shrestha, Programme Manager, River Basins and Cryosphere, ICIMOD **Setting the context:** Arun B. Shrestha, Regional Programme Manager, ICIMOD • Sindhu Dhungana, Joint Secretary, Ministry of Forests and Environment • Ram G. Kharbuja, Joint Secretary, Ministry of Energy, Water Resources and Irrigation (TBC) • Kedar Prasad Paneru, Joint Secretary, Ministry of Federal Affairs and General Administration • Shambu Regmi, Chief of National Emergency Operation Center, Ministry of Home Affairs • Hari Prasad Mainali, Secretary, Ministry of Internal Affairs and Law, Province 1 • Krishna Hari Pushkar, Secretary, Ministry of Internal Affairs and Law, Province 2 **Rapporteurs:** Kripa Shrestha, Manisha KC and Prabesh Dhungana
10:30 – 11:00	*Tea/coffee break* (Group photo)
11:00 – 12:30	**Session B. At the frontlines of disaster risk reduction in the Koshi basin** This session will hear from community leaders and practitioners at the local level about the disaster risk reduction, and the knowledge and policy gaps, as well as opportunities for collaboration. **Chairperson:** Ganga Lal Tuladhar, Former Education Minister and DRR Expert **Moderator:** Deepak K.C., Senior Programme Officer, Climate Change Adaptation & DRR/CDRMP, UNDP **Panelists:** • Laxman Adhikari, Ward Chairperson, Khumbu • Durga Bahadur Thapa, Mayor, Belaka Municipality, Udayapur • Satish Singh, Mayor, Tilathi Koiladi Rural Municipality, Saptari, • Deo Narayan Yadav, Executive Director, Koshi Victim Society • Sunita Kayastha, Emergency Specialist, UNICEF • Arya Regmi, Program Coordinator, Nepal Red Cross Society **Rapporteurs:** Manisha KC and Prabesh Dhungana
12:30 – 13:30	*Lunch*
13:30 – 14:00	**Objectives for the country chapter and potential governance structure** **Facilitator:** Santosh Raj Pathak, ICIMOD

Time	Activity
14:00 – 16:30	**Session C1. Identifying knowledge and policy gaps for DRR in the Koshi basin** Guiding questions: • Stock taking: Issues and interventions by group members • What are the issues and opportunities for strengthening science-policy-practice interlinkage? How can the group contribute and benefit from tapping into these opportunities? • What are the issues and opportunities for strengthening transboundary collaboration? How can the group contribute and benefit from tapping into these opportunities? • What could be the objectives of the working group and how can it function effectively? **Working Group Division:** Floods, GLOFs, Landslide and Sedimentation, Drought, Community Based Disaster Risk Management, Policy Advocacy, Knowledge Management and Communication (combination of researchers, practitioners, decision makers, private sector, media)
16:30 – 16:45	**Wrap-up and agenda for Day II** Kanchan Shrestha, ICIMOD

Day 2: 24 September 2019

9:00 – 10:30	**Session C2. Plenary Reporting back: Identifying knowledge and policy gaps for DRR In the Koshi Basin** **Panelists:** • Biju K. Shrestha, Joint Secretary, National Planning Commission • Reporting back from the group from Day 1: 10 min presentation each from the group **Moderator:** Kanchan Shrestha, Programme Coordinator, Koshi Basin Initiative, ICIMOD **Rapporteurs:** Manisha KC and Prabesh Dhungana
10:30 – 11:00	*Tea Break*
11:00 – 12:30	**Session D. Koshi DRR Knowledge Hub country chapter** This session will discuss the possible structure of the country chapter for the Koshi DRR Knowledge Hub. **Chairperson:** Kiran Rupakhetee, Joint Secretary, National Planning Commission. **Panelists:** • Badri Dhungana, Joint Secretary, Ministry of Forestry and Environment • Krishna Hari Pushkar, Ministry of Internal Affairs and Law, Province 2 **Moderators:** Santosh Raj Pathak and Sadiksha Guragai, ICIMOD **Rapporteurs:** Kripa Shrestha, Manisha KC and Prabesh Dhungana
12:30 – 13:30	*Lunch*
13:30 – 14:30	**Session E. Role of media in disaster risk reduction** **Moderator:** Ramesh Bhushal, Nepal Editor, thethirdpole.net **Panelists:** • Nimesh Regmi, General Secretary, NEFEJ, formerly with Sagarmatha FM • Rajendra Dahal, Editor, Shikshak (monthly magazine) • Ratna Chaudhary, Radio Nepal • Bhola Paswan **Rapporteurs:** Manisha KC and Prabesh Dhungana
14:30 – 14:45	*Tea break*

Time	Activity
14:45 – 16:00	**Session F. Leveraging improved collaboration for DRR in the Koshi basin** **Chairperson:** Tania Dhakhwa, Chief of Communications, UNICEF **Moderator:** Eklabya Sharma, Deputy Director General, ICIMOD **Panelists:** • Deepak Aryal, Head of Department, Central Department of Hydrology and Meteorology, Tribhuvan University • Achyut Luitel, Regional Director, Practical Action • Raju Thapa, Secretary, Disaster Preparedness Network-Nepal • Jaya Siwakoti, Chairperson, Social Service Unit, FNCCI • Simon Lucas, Team Leader, Resilience and Inclusion Team, DFID Nepal **Rapporteurs:** Manisha KC and Prabesh Dhungana
16:00 – 16:30	**Session G. Summary and closing remarks** • Kiran Ojha, Country Director, Lutheran World Relief • Ayshanie Labe, Resident Representative, UNDP • Biju K Shrestha, Joint Secretary, National Planning Commission • Eklabya Sharma, Deputy Director General, ICIMOD **Rapporteurs:** Manisha KC and Prabesh Dhungana

Annex 3: List of participants

NEPAL

18 Anup KC
NPC

19 Anup Poudel
IOM
acpoudel@iom.int

20 Arya Regmi
Nepal Red Cross
arya.regmi@nrcs.org

21 Badri P. Dhungana
MoFE

22 Bhaba P Tripathi
IRRI

23 Bhola Paswan

24 Bim Prasad Shrestha
KU

25 Bijay Basnet
Pokhara University
beezaybasnet@gmail.com

26 Bijendra Krishna Singh
MoFE

27 Biju K. Shrestha
NPC

28 Binaya Kumar Mishra
Pokhara University
mishra_binaya@hotmail.com

29 Binod Gnawali
MoALD
Binod.gnawali@nepal.gov.np

30 Deepak Aryal
CDHM

31 Deepak K Jha
Sabal Nepal
deepaksabal@gmail.com

32 Deo Narayan Yadav
Nepal
koshivsociety@gmail.com

33 Dharam Upreti
Practical Action
Dharam.Uprety@practicalaction.org.np

34 Dibas Shrestha
TU
st.dibas@yahoo.com

35 Dil Bahadur Gurung
NPC

36 Durga Bahadur Thapa
Udayapur
swostikthapa@gmail.com

37 Ganga Lal Tuladhar
Nepal
gangalaltuladhar@gmail.com

38 Hari Prasad Mainali
Sec. Province 1

39 Hari Prasad Pandey
MoFE
infoofficer@mofe.gov.np

40 Hugh Sinclair
UK
Hugh.Sinclair@ed.ac.uk

41 Jaya Siwakoti
FNCCI
jayasiwakoti@gmail.com

42 K.R. Joshi
MoERI

43 Kedar P. Paneru
MoFAGA
parajulikedar90@yahoo.com

44 Kiran Ojha
LWR
kojha@lwr.org

45 Kiran Rupakhetee
NPC

46 Krishna Dev Joshi
IRRI
k.d.joshi@irri.org

47 Krishna Hari Pushkar
Province 2

48 Krishna Raj Pathak
DoEWR
krishnapathak@gmail.com

49 Laxman Adhikari
Ward Chairperson

50 Lekh Nath Bagale
MoEWRI

51 Madan Sigdel
Tribhuvan University
msigdel@yahoo.com;

52 Manisha KC
TU
kcmanisha01@gmail.com

53 Mann K Chhetri
WFP
man.kshetri@wfp.org

54 Meen Chhetri
DP-Net

55 Motilal Ghimire
CDG, TU

56 Nagdev Yadav
CDAFN

57 Narayan Gyanwali
LWR
ngyawali@lwr.org

58 Narendra Raj Khanal
TU

59 Nimesh Regmi
NEFEJ
nimesh.regmi@gmail.com

60 Nirmal Thapa
DoFSC

61 Nischal Karki
KIAS
nischalkarki880@gmail.com

62 Pallav Pant
Sarokar Foundation

63 Parsu Ram Pokhrel
NPC

64 Piyush Dahal
The Small Earth Nepal
piyush@smallearth.org.np

65 Prabesh Dhungana
TU
prabesh57@gmail.com

66 Prem Awasthi
UNRCO

67 Rijan B. Kayastha
KU

68 Rajan Subedi
TROSA
RaSubedi@oxfam.org.uk

69 Rajendra Shakya
Annnapurna Photos

70 Raju Thapa
DP-Net advrajuthapa@gmail.com

71 Rakesh K. Shah
LWR

72 Rakesh Kayastha
KU
rakesh.kayastha@ku.edu.np

73 Ram Chandra Neupane
Eco-Nepal
rcneupane@gmail.com

74 Ram Gopal Kharbuja
MoEWRI

75 Ramesh Bhusal
Third pole
ramesh.bhusal@thethirdpole.net

76 Ramesh Parajuli
NPC

77 Rameshwor Ghimire
DWSS
rameshwoar@yahoo.com

78 Ranjan Shrestha
European Union

|79 Ratna Chaudhury
Radio Nepal
ratnatharu@yahoo.com

80 Reenu Thapaliya
MoFAGA

81 Rupesh Shrestha
rupeshshrestha2005@gmail.com

82 Sagar K. Rai
MECS

83 Sangeeta Singh
IOE, TU
sangeeta@ioe.edu.np

84 Satish Singh
Saptari
satishsingh.raj@gmail.com

85 Shailendra Guragain
IPPAN
guragain.shailendra@gmail.com

86 Shambhu Prasad Regmi
NEOC

87 Sindhu Prasad Dhungana
MoFE
sindhupd.dhungana@nepal.gov.np

88 Sumit Dugar
DFID

89 Sunwi Maskey
KU

90 Suraj Lamichhane
IOE, TU

91 Suresh Marahatta
TU

92 Sushila Kandel
CDES, TU

93 Thakur Prasad Magrati
DoFSC

94 Tikeshwori Joshi
Forest Action
tikeshwori.joshi@gmail.com

95 Tirtha Raj Adhikari
TU

96 Vishnu Pandey
IWMI
v.pandey@cgiar.org

UNDP

97 Ayshanie Medagangoda-Labe

98 Deepak KC
deepak.kc@undp.org

99 Prerna Lama

100 Richa Ranjitkar

101 Suman K. Karna

102 Saroj Deo

UNICEF

103 Asim Shrestha
ashrestha@unicef.org

104 Go Eun Park

105 Harun Rashid
mhrashid@unicef.org

106 Shamina Manandhar

107 Sunita Kayastha
skayastha@unicef.org

108 Overtonn Mgemezum
UNICEF/ROSA

ICIMOD

1 Aditya Bastola
aditya.bastola@icimod.org

2 Arun Bhakta Shrestha
arun.shrestha@icimod.org

3 Ashmita Shakya
ashmita.shakya@icimod.org

4 Debabrat Sukla
debabrat.sukla@icimod.org

5 Finu Shrestha
finu.shrestha@icimod.org

6 Govinda Shrestha
govinda.shrestha@icimod.org

7 Kanchan Shrstha
kanchan.shrestha@icimod.org

8 Kripa Shrestha
kripa.shrestha@icimod.org

9 Laxmi Dutta Bhatta
laxmi.bhatta@icimod.org

10 Madhav Dhakal
madhav.dhakal@icimod.org

11 Miele Shrestha
miele.shrestha@icimod.org

12 Nishikant Gupta
nishikant.gupta@icimod.org

13 Pradeep Dangol
[radeep.dangol@icimod.org

14 Sadiksha Guragain
sadiksha.guragain@icimod.org

15 Santosh Nepal
santosh.nepal@icimod.org

16 Santosh Raj Pathak
santosh.pathak@icimod.org

17 Sharad P Joshi
sharad.joshi@icimod.org

18 Vijay Khadgi
vijay.khadgi@icimod.org

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International Centre for Integrated Mountain Development
GPO Box 3226, Kathmandu, Nepal
T +977 1 5275222 | **E** info@icimod.org | **www.icimod.org**