



Science-Policy Dialogue



Thursday, 4 September 2014
Kanchenjunga Conference Hall
ICIMOD
Kathmandu, Nepal





HI-AWARE: Himalayan Adaptation, Water and Resilience Research

Science-Policy Dialogue

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I. BACKGROUND

HI-AWARE is one of the four consortia of the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA). The International Centre for Integrated Mountain Development (ICIMOD) is one of the members of the HI-AWARE Consortium. Other members of the HI-AWARE Consortium include the Bangladesh Centre for Advanced Studies (BCAS), the Energy and Resources Institute (TERI), Climate change, Alternative Energy, and the Water Resources Institute of the Pakistan Agricultural Research Council (CAEWRI-PARC), and Alterra-Wageningen University and Research Centre (Alterra-WUR).

HI-AWARE had its inception phase from April to September 2014, and will be implemented till September 2018. The programme carries out research, capacity building and policy advocacy in four river basins of the Hindu Kush Himalayan (HKH) region, namely, the Indus, Upper Ganga, Gandaki and Teesta, with the aim of generating evidence-based knowledge for building communities' adaptive capacity and climate resilience, and for developing people-centered and gender-sensitive adaptation policies and practices. To achieve this end, it is very important to bridge the gap between research and policy, and translate scientific findings into practice on the ground. HI-AWARE hence lays great emphasis on improving and strengthening the science-policy interface on climate resilience and adaptation in the HKH region.

In keeping with this objective, ICIMOD held a workshop titled 'HI-AWARE: Science-Policy Dialogue' on 4 September 2014 at the ICIMOD headquarters in Kathmandu. The workshop brought together eminent experts from government agencies, research institutes and NGOs to discuss some of the components of the HI-AWARE initiative and provide comments and inputs for strengthening the initiative. This report provides a brief summary of the workshop proceedings and highlights the main points raised during the sessions.



II. SUMMARY OF PROCEEDINGS

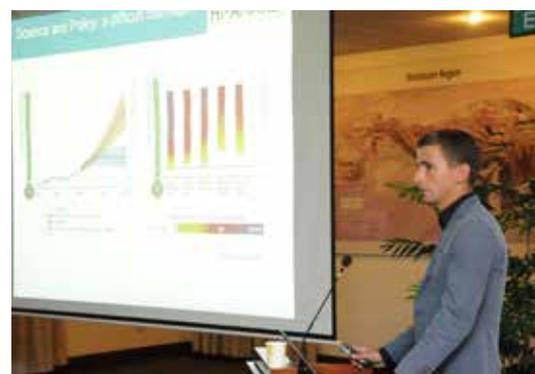
In their opening remarks, Dr David Molden, Director General of ICIMOD, and Dr Bhartendu Mishra, member of the National Planning Commission of Nepal, stressed the importance of linking scientific research with policy and action at the local, national and regional level. "I expect this programme to take us another step forward in generating good science and adaptation strategies that we will try on the ground," said Dr Molden. Dr Philippus Wester, Principal Investigator for HI-AWARE and Chief Scientist for Water Resources Management at ICIMOD, then provided a succinct overview of the HI-AWARE programme, explaining the research question, projected impacts and outcomes, and the three work packages of the programme — knowledge generation, research uptake, and the strengthening of expertise.

This was followed by three main presentations. First, Dr Walter Immerzeel of FutureWater, the Netherlands, gave an illuminating presentation on the biophysical factors leading to vulnerability to climate change. His presentation sparked a lively discussion on the challenges and possibilities for projecting future climate scenarios, particularly in relation to glaciers. Dr Chanda Gurung Goodrich, Senior Gender Specialist at ICIMOD, then explained how the socioeconomic, governance and gender dynamics of communities shape their vulnerability to climate change. Many participants asked questions and made comments on her presentation, touching on a range of issues related to adaptive capacity, such as women's property rights, feminization of agriculture, the additional vulnerability of disadvantaged groups, and the need for gender disaggregated data. Next in line was a presentation by Dr Hester Biemans, a researcher at Alterra-Wageningen UR, the Netherlands. She introduced the three relatively new concepts that have been introduced in HI-AWARE, namely critical moments, adaptation turning points, and adaptation pathways, all of which help us to understand the biophysical aspects of climate change as well as to develop climate adaptation responses. These concepts are aimed at communicating the implications of climate change for policy focus and emphasizing the time dimension of adaptation.

The second half of the workshop was devoted to group work and panel discussion. The group work featured a 'science-policy carousel' in which all participants attended three simultaneous interactive sessions on 'climate change visualization' (led by Dr Philippus Wester), 'migration, gender and governance adaptation' (led by Soumyadeep Banerjee, Migration Specialist at ICIMOD), and 'adaptation pathways' (led by Ms Suruchi Bhadwal, Associate Director of Earth Sciences and Climate Change Division, TERI). The key points raised during these sessions were later presented in the plenary session.

The panel discussion, which was the final session of the workshop, was chaired by Dr David Molden. He asked the panelists some critical questions pertaining to climate change and development in South Asia. The five panelists were Dr Atiq Rahman of BCAS, Ir Kees Slingerland of Alterra, Dr K Murali of IDRC, Dr Arabinda Mishra of TERI University, and Dr Nadeem Amjad of PARC. Their discussion generated an enthusiastic response from the participants, who asked questions and offered their views on important issues related to adaptation, such as the need for effective communication, the role of the private sector, and the need for a bottom up perspective.

The workshop thus provided an opportunity to share and discuss valuable ideas for bridging the gap between science and policy.



III. KEY ISSUES, LESSONS AND CHALLENGES

A. Presentation and Discussion: Main Points

Linking research to policy and action

Research alone is not sufficient for solving the problems on the ground. Research findings must be linked to policy that can then be translated into action at the regional, national and community level. However, linking science and policy is often a challenge, because many scientists think in probabilities and approximations while policy-makers want definite numbers.

Migration as an adaptation strategy

Extreme weather event is one of the many reasons that may lead to migration because of the impact on lives and livelihoods in origin communities. Migration outcomes are context specific. Further research is required to discern the role of remittances in building adaptive capacity. The situation in the origin communities, scale, migration outcomes, condition of the migrants in destination are some of the criteria that needs to be examined in order to ascertain whether migration is an adaptation.

Climate models

Global climate models have their limitations in that they cannot capture all the climate differences across a single mountain. There is a need for climate models that are specific to the Himalayan region and take into account its different needs and problems.

Projecting climate events

Projecting accurate scenarios, even for average events, remains a challenge. As it is not possible to predict specific events, projections have to be made on the probabilities.

Drought as a 'slow killer'

We should not lose sight of the fact that drought, even though it does not cause immediate and visible damage like flood, has a destructive impact on people's lives, the environment and economy over a prolonged period of time.



Socioeconomic aspects

It is necessary to address the socioeconomic dimensions of people's vulnerability to climate change. People's economic condition, the governance structure, and the gender dynamics of the society are crucial in shaping their vulnerability to climate change. Urbanization, food insecurity, and labour migration are phenomena that are directly or indirectly linked to the effects of climate change.

Lack of gender disaggregated data

Although there is a lot of hypothesis on the varying impacts of climate change on women and men, there is limited gender differentiated data on this issue. It is important to understand how the effects of climate change have reshaped gender roles and relations. For instance, while researching food security, we could look into how informal seed networks, which are less visible than formal networks but more frequently used by among women, enhance the adaptive capacity of women. Another key question to be asked is how property rights enhance or reduce women's vulnerability to climate change.



Special focus on the disadvantaged

Adaptation programmes need to lay particular emphasis on the poor and disadvantaged groups who bear the brunt of climate-related problems. For instance, the poorest households are normally located above water resources, and they face an additional challenge in accessing water from below. This needs to be taken into account while planning and implementing programmes. To take another example, simply developing a canal system for communities is not enough to address water shortage, because the canal will only benefit those who have land. The poorest of the poor often do not own land. The needs of landless families must be considered while developing measures to cope with water scarcity.

Integrating adaptation measures in development

There is a need to integrate climate change adaptation measures in development plans. Recent analysis shows that this gap prevented us from properly managing the Uttarakhand flood disaster in 2013. The extent of damage could have been far less had strict regulations for building and development been in place.

Clarifying 'critical moment' and 'turning point'

There is a need to clarify new concepts such as 'critical moment' and 'turning point' by illustrating them in specific socioeconomic contexts. Also, trying to apply the same concept to ecological and institutional arrangements might not be advisable. For instance, when community institutions that manage local resources prove ineffective, do we attribute the problem to climate change or elite capture? It is necessary to gather data from the ground to determine this.

Adaptation pathways: practice, institution, or value system?

We need to be clear about the level at which adaptation pathways/ turning points are being defined. For instance, farmers in many areas are using their own adaptation measures to cope with drought, but at the institutional level, there is a greater degree of inertia. At the level of value system, the problem is even deeper. We would need different approaches for defining adaptation pathways at these different levels.

B. Group Session: Main Points

Climate change visualization

Communicating the uncertainty of climate science to spark action remains a challenge. Participants recommended various ways to address this challenge:

- Start by talking about the effects of climate change at the local level rather than about the scientific aspects. Communicate with your neighbours first and try to convince them.
- Present forecasts in a probabilities framework and provide information about potential impacts, e.g., 80% chance of flood in the area in the next five years.
- Develop analogies, metaphors that concerned people can relate to. Use images that represent information and give concrete examples with the time, rate, intensity, and duration of events.
- Teach school children and use popular forms of art such as street drama to disseminate messages about climate change.
- Ensure a two-way communication and translate scientific language into everyday language that can be understood by all stakeholders. Educate policymakers and politicians, and communicate with the right institutions.
- Clarify the difference between weather and climate while also addressing the weather needs and making weather projections.
- Disseminate information through media—television, social media, and especially community radios. Create an information system and a knowledge centre.
- Some participants were of the opinion that most adaptation policies are not based on climate science. Rather, they either follow a typical development paradigm, or are designed with the aim of serving business interests and making profit. Thus factors such as finance, politics, etc. also shape climate change adaptation policy and decisions.



Migration, Gender, Governance and Adaptation

- Will climate change be a strong push factor for increase in migration?
- Some posit that migration can be seen as an adaptation to climate change while others argue that migration is a maladaptation. Is migration a viable climate change adaptation strategy for both men and women?
- How can remittances from migration be used for financing local climate change adaptation measures to reduce vulnerability?
- Participants came up with the following points:
- Climate variability and extremes are forcing people to quit their traditional livelihood practices, which in turn may lead some people to migrate. For instance, due to erratic rainfall and drought, low productivity, people leave agriculture and opt for wage labour away from their villages.



- The poorest lack the means and skill-set needed for migration; hence, migration is not a feasible option for everyone.
- Most households do not consciously think of investing remittances in activities that will build their adaptive capacity, e.g., creating community funds and starting income-generating enterprises.
- In certain contexts, migration could be seen as a feasible adaptation strategy. For that, the conditions in the origin community, scale, migration outcomes, and the condition of the migrants in destination are some of the criteria that need to be examined.

Adaptation Pathways

The participants identified the following barriers and possible solutions for adaptation pathways:

- There is a need for a common adaptation framework in the region. There should be a learning alliance, a common methodology, and strong cooperation and dialogue on basin and sub-basin issues among the regional member countries in the HKH.
- There is a lack of skills and technology at the local level. For example, a huge percent of water is wasted during irrigation due to inadequate skills and technology. It is necessary to build capacity and enhance technology at the community level.
- Local communities and institutions cannot make their voices heard at the local level. For instance, the flow of water from Nepal to India is managed by the central government without taking the local views and needs into account. There is a need to strengthen communities' capacity to communicate their problems to central level authorities and ensure that their concerns are addressed.
- Many people who live in flood-prone areas are landless. Therefore, it is difficult to resettle them even in the face of an impending flood disaster. There is a need to find alternatives before displacing people from their current habitat.
- Local indigenous knowledge and practices are important to adaptation pathways. They need to be scaled up by enabling different communities to share them and learn from each other's practices. Communities should be given necessary support to promote and enhance such knowledge and practices.



C. Panel Discussion: Main Points

During this session Dr David Molden posed one specific question each to the five panelists. Each panelist gave a detailed response to the question and many in the audience provided additional comments. The responses of the panelists and the participants' comments are summarized below:

Dr Atiq Rahman, BCAS

What are the main challenges posed by climate change to growth and development in South Asia?

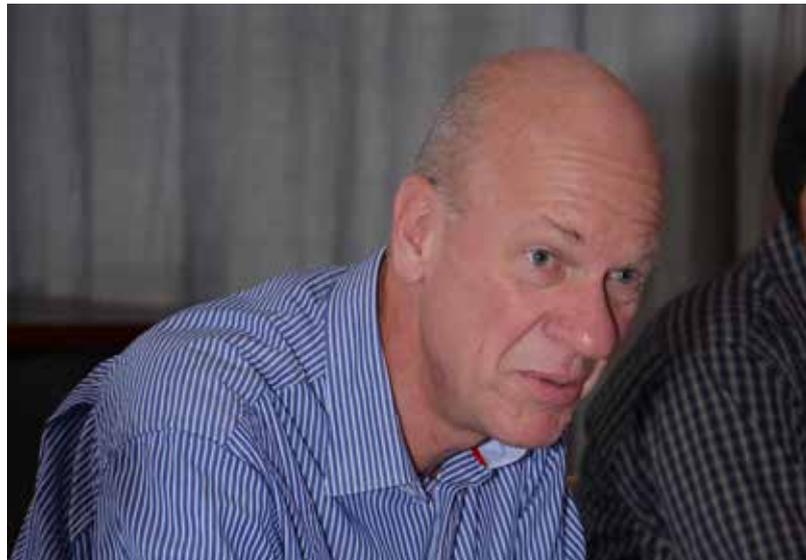
- Poverty remains a great challenge in the context of climate change and development. South Asia has the highest concentration of poor people in the world. On top of it, we have the problem of climate change. It is not only the impacts of climate change that kill the poor, but the vulnerability of the poor. The poor die in a cyclone because they don't have good houses, not just due to the velocity of the cyclone. So the poor have to bear the brunt of climate change.
- There is a need to link poverty reduction with climate change, especially at the policy level. We must address climate change for our own survival and development and to enable other sectors to function. In SAARC, we have agreed on three declarations on climate change. These can serve as a basis for working together, but we South Asians are talkers, not doers.
- Another big challenge is a lack of cooperation among leaders of the region. Cooperation among leaders of South Asia is essential as many impacts of climate change as well as development potential are, and will increasingly become, regional in nature.



Ir. Kees Slingerland, Alterra

What are the challenges in communicating climate change impact scenarios to local and policy communities and how can we improve this communication?

- Most people have heard of global warming but cannot understand the scientific language. If we can explain the particular effects of climate change on their lives and livelihoods, then it will be easier to communicate climate change impact scenarios.
- We have to communicate with people, not just policy makers; otherwise we are not talking to people who are being affected. Communication is a two-way process that involves sending and receiving. But often scientists only like to send and are not good at receiving. We (scientists) need to listen to and reflect on what others are saying. It is important to incorporate the communities' voices in our research.
- It is also important to provide information that is both acceptable and actionable. Once people accept the information, we should ensure they act on it. Also communication needs to be a continuous and ongoing process, and not just a sporadic event, if people are to stay informed and alert about the imminent changes and disasters.



Dr Nadeem Amjad, PARC

How could we develop a bottom-up perspective for estimating impacts and vulnerability by integrating hydro-meteorological modeling and scenario analysis with socioeconomic drivers?

- While trying to address the problem of climate change, we must look at the bigger picture and adopt a holistic approach that also addresses the challenges of livelihoods and resilience.
- We should also sensitize the private sector to ensure that there are entrepreneurial efforts geared towards adaptation and resilience. We could at least think of developing private-public partnership. The private sector could get involved as a service provider – for instance, it could provide technology inputs, as it is not possible to make significant changes without reliable technology. If there is an entrepreneurial element in HI-AWARE, it will have greater chances of achieving long-term sustainability.
- To take a different angle on the private sector, we could say that people in South Asia, Africa and many other countries have been experiencing the impacts of climate change. They have been coping and finding solutions with their own money. These solutions have a cost, and the private sector is thus involved by default. We should also keep in mind that resources are increasingly being transferred from the poor to the rich. For instance, during the 2012 Hurricane Sandy in the United States, it was found that only the wealthy households were insured, while the poor had no such mechanisms for coping with disaster. In Bangladesh, the poorest have no access to water and are paying private suppliers 210 times the regular cost of water. The market is penetrating into all spheres of life, including in the sphere of basic rights such as access to drinking water. There is also a need to think about how to study this phenomenon.



Dr Arabinda Mishra, TERI University

We know that adaptation will bring immediate benefits and reduce the impacts of climate change in South Asia. Why is there no direct focus on adaptation measures?

- We cannot say there is no focus on adaptation; there is, but it remains inadequate. There are a number of factors behind this: a) information gap which results in weak evidence; b) psychological barriers in accepting that climate change has serious impacts; c) entrenched institutional barriers.
- Fundamentally, policy makers do not like dealing with the uncertainty of climate change. They are generally uncomfortable with uncertainties. They like to start by setting goals, which is not easy to do in climate change adaptation initiatives.
- At the local level there is a genuine lack of capacity to know how to respond to climate change and to identify additional risks. There is also the challenge of feeding their concerns into the planning process. Government line agencies that are responsible for monitoring at the local level often have the least capacity.
- There is a myth that adaptation is a 'local' process. In reality, steps for climate change adaptation need to be taken at the national and regional level. It is not only a local thing. It is precisely because local level stakeholders have not been adequately involved in national and regional decision making that the problem persists.



Dr K Murali, IDRC

What are the barriers to mainstreaming climate change adaptation in development? How could HI-AWARE contribute to building bridges to cross this divide?

- At the theoretical level, climate change adaptation entails a nexus between three issues: development, resource management, and livelihood. These three areas are closely linked to one another. However, we have not given due importance to livelihood. Do we want to mainstream the kind of adaptation that does not take people's livelihoods into account? We need a different paradigm.
- There's still a lack of understanding and capacity in the policy -- and to some extent scientific -- domain to distinguish adaptation from mitigation. Mitigation is easy to visualize as a discrete component. Adaptation is inextricably linked to development. We need to find criteria to make this distinction.
- Policies are usually made for specific sectors. Adaptation, however, is a cross-sectoral phenomenon, which is difficult to institutionalize. For instance, the energy department will be responsible for mitigation in a particular area, but no such department exists for adaptation
- In Nepal, local level planning is almost non-existent. The so-called planning happens only at the district level, in that the relevant authority calls to ask, "How much do you need?" The government has said that 80 percent of funds that it receives for adaptation should be allocated for local level planning. We should hence think about a framework for local level planning and how to make it effective. To take one example, a certain agency came to a village in Bangladesh and taught farmers to grow pumpkins. But after a few months, the farmers realized they had grown pumpkins on a large scale without learning what to do with them. They had not been linked to any market. So they had no choice but to give their pumpkins away for free. This is what happens where there is no local level planning.



Annexes

List of Participants

ALTERRA, the Netherland

Hester Biamas
Kees Slingerland

BCAS, Bangladesh

Dr. Atiq Rahman
Dr. Abu Syed

Future Water, the Netherland

Walter Immerzeel

PARC, Pakistan

Dr. Bashir Ahmad
Dr. Nadeem Amjad

TERI, INDIA

Suruchi Bhadwal
Dr. Arabindra Mishra

WADIA, India

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Dr. Dwarkia Prasad Dhobhal

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Sonika Shahi
Prashant Baral
Sudip Pradhan
Govinda Joshi
Sonu Khanal
Farid Ahmad
Aneel Piryani
Bhaskar Singh Karky
Abid Hussain
Muhammad Sohail
Mohammad Ismail
Bidhubhusan Mahapatra,
Bikash Sharma
Chanda Gurung Goodrich
Omaid Seddiqi
Manohara Khadka
Soumyadeep Banerjee
Tashi Dorji
Rashmi Kiran Shrestha
Madhav Dhakal
Sagar Bajracharya
Prabesh Devkota
Srijana Joshi Rijal
Pradeep Mool
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Rucha Ghate
Ramesh Vaidya
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Narendra Raj Khanal
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Patrick Wagnon
Prakash Bhave
Sagar Ratna Bajracharya
Tanuja Shrestha
Vanisa Surapipith
Kabir Uddin
Dhrupad Choudhury
Nand Kishor Agrawal

Programme Schedule

Thursday, 4 September 2014
Kanchenjunga Conference Hall, ICIMOD

[9:30 am to 4:30 pm]

TIME	PROGRAMME	Chair\Facilitator
9:30 – 9:45	Opening Remarks: Dr. David Molden , Director General, ICIMOD Representative of National Planning Commission, Government of Nepal	Dr. Eklabya Sharma Director Programme Operations, ICIMOD
9:45- 10:15	Snapshot of HI-AWARE Programme – Dr. Philippus Wester , Principal Investigator HI-AWARE and Chief Scientist Water Resources Management, ICIMOD	
10:15–10:45	Bio-Physical Drivers and Conditions Leading to Vulnerability to Climate Change - Dr. Walter Immerzeel , FutureWater, The Netherlands Comments by Prof Anil K Gupta , Director, Wadia Institute of Himalayan Geology, India	Dr. Arun B Shrestha , Regional Programme Manager, River Basins/ Cryosphere and Atmosphere, ICIMOD
10: 45-11:15	Tea and Networking	
11:15-11:45	Socio-Economic, Governance and Gender Drivers and Conditions Leading to Vulnerability to Climate Change – Dr. Chanda Gurung Goodrich , Sr Gender Specialist, ICIMOD Comments by Ms. Samjhana Bista , Gender Focal Point, Practical Action, South Asia	Dr. Golam Rasul , Theme Leader, Livelihoods, ICIMOD
11: 45-12:15	Critical Moments and Adaptation Turning Points – Dr. Hester Biemans , Researcher, Alterra-Wageningen UR, The Netherlands Comments by Dr Arabinda Mishra , Dean, Faculty of Policy & Planning, TERI University, India	
12:15- 12:30	Group Photograph – ICIMOD Front Gate	In-charge: Aneel Piryani and Nani Bajracharya
12:30 – 1:30	Lunch and Networking	

1:30 – 3:00	<p>Science – Policy Carousel</p> <p>Table 1: Climate Change Visualisation</p> <p>Table 2: Migration, Gender and Governance Adaptation</p> <p>Table 3: Adaptation Pathways</p>	<p>Dr. Philippus Wester, ICIMOD</p> <p>Dr. Rucha Ghate, Senior NRM Governance Specialist, ICIMOD</p> <p>Ms. Suruchi Bhadwal, Associate Director, Earth Sciences and Climate Change Division, TERI</p>
3:00- 3:30	Tea Break and Networking	
3:30- 4:30	<p>Panel Discussion on Key Questions</p> <p>Panellists:</p> <p>Dr. Atiq Rahman, BCAS</p> <p>Ir. Kees Slingerland, Alterra</p> <p>Dr. K Murali, IDRC</p> <p>Dr Arabinda Mishra, TERI University</p> <p>Dr. Nadeem Amjad, PARC</p>	<p>Dr. David Molden, DG, ICIMOD</p>
4:30	Vote of Thanks – Dr. Anjal Prakash , Programme Coordinator, HI-AWARE, ICIMOD	



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