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Climate models show inconsistent results for water availability in Nepal

Uncertainty over the effects of climate change will be a huge challenge to national agricultural water management

KATHMANDU (23 NOVEMBER 2011). New research comparing outputs from climate and hydrological models has shown some worrying inconsistencies on the predicted availability of water in Nepal. Outputs from different computer models, known as the global and regional circulation models, showed wildly different outcomes for water flow under different climate change projections. The results, presented today at a national conference on water, food security and climate change which is being held in Lalitpur, are sure to add to the confusion among water policy makers who are desperate for reliable information about the likely consequences of climate change on water supplies and agriculture in Nepal.

"The uncertainty of climate change predictions is a major issue," says Luna Bharati head of the Kathmandu office of the International Water Management Institute (IWMI) and a member of the research team. "Any adaptation strategy that the government plans will have to take this uncertainty into account. We are already experiencing increasingly unpredictable climate related events, such as floods and droughts. We urgently need to assess the vulnerability of communities and target adaptation measures to those most likely to be affected."

Bharati says that climate change will heighten the need for investment in conventional water management measures like storage, basin transfers, improved agriculture water management technologies which can all be viewed as adaptation options. Introducing new measures, such as crop insurance schemes which are based on climate data may also be useful. But implementing these new strategies remains a challenge. In another piece of new research to be presented at the conference, IWMI scientists identified a lack of training as a major problem in the development of new water management systems.

"Most donors are failing to devote sufficient resources to building capacity in communities and public organizations," says IWMI's Floriane Clement who led the research team in Nepal. "Planners are focusing on numbers and outcomes and failing to look at the quality of their interventions to improve water resource management."

This research was based on a series of interviews conducted with around 25 government officials, donors, NGOs and consultants in Kathmandu. This was complemented by findings from ethnographic fieldwork in 4 case study sites in the western region of Nepal (Bajhang

and Mugu Districts), where water management projects had been implemented by a major donor.

“Most donors have developed sophisticated models for development and irrigation projects on the assumption that improved institutional performance will solve past shortcomings, says Clement. “Yet there is always a large gap between the models and their implementation on the ground. We suggest that good models need to be guided by key principles such as quality engagement with men and women, equity, inclusiveness, sustainability, integration of local knowledge, accountability to communities. More funds, time and human capacity should be devolved to achieve these principles on the ground. The monitoring and evaluation of development and irrigation projects need to pay more attention to the quality of processes and achievements of these principles rather than to outputs.”

The Kathmandu conference is timely as it takes place just before the UN Climate Change summit in Durban, South Africa when a mechanism to distribute money to poorer countries to help them adapt to climate change may be agreed.

“More research is vital if Nepal is to make the most of investments in water resource management,” said Luna Bharati head of IWMI’s Kathmandu office. “The impacts of climate change will be felt most acutely in the availability and access of water resources, and that will affect agriculture as well as food security. This conference is designed to help Nepali researchers and policy makers share experiences and find innovative solutions to problems that have plagued the water management sector for decades. Only by adopting a new collaborative approach can we hope to successfully manage water and guarantee food security in an era of climate change.”

The National Conference on Water, Food Security and Climate Change in Nepal is at the Hotel Himalaya until Thursday 24 November. It is organised by the International Water Management Institute (IWMI) and the CGIAR Research Program on Climate Change Agriculture, and Food Security in partnership with the Department of Irrigation, Government of Nepal, the International Network on Participatory Irrigation Management and the Nepal Agricultural Research Council.

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