IDRC PROJECT UPDATES

Current status of all project teams

As the beginning project activities all five participating project teams have done extensive background research by conducting literature reviews, climate data assessments and consequently decided on their specific project sites. They have then finished their primary data collection in December 2011 and subsequently submitted their corresponding draft reports in January 2012, which included a preliminary cost benefit analysis, based on diverse qualitative and quantitative calculations like Rapid Rural Appraisal and Net Present Value methods that included monetary and non-monetary variables. Currently, all project teams are in the process of analysing and writing up their results in final project reports by applying the methodological framework and climate envelopes to the primary data generated at the individual project sites. Additionally, the teams have already or are in the process of organising stakeholder workshops as a platform to present their preliminary findings to the stakeholders and encourage discussion, negotiation and capacity building among them. The objectives of hosting the workshops are to learn about each actor's values and willingness to pay, the individual distribution of respective costs and benefits of the suggested adaptation measures for eventually achieving a mutually beneficial consensus, which would facilitate the ongoing research process and lead to the most effective adaptation option. The timing of hosting in-country stakeholder workshops differs among country teams since it highly depends on the individual data that was generated at each project site as well as the subsequent analysis that has been conducted. All project teams are also preparing to share their findings at a synthesis meeting in late April/May 2012. The main researcher from each case study will attend.

BOLIVIA

General

In addition to the background research that has already taken place, case study researchers have identified various adaptation options through stakeholder consultations. Subsequently, the team has focused its attention on three water-related options that are complementary to each other as well as non water-related options for instance by investing in additional income diversification opportunities. The primary data collection and draft report submission was delivered according to the project schedule and the researchers are currently in the process of writing the final project report by merging the methodological framework with the generated field data.

Stakeholder workshop

On 31st January 2012 the Bolivian research team conducted a stakeholder workshop including 15 participants representing all four stakeholder groups namely government officials, representatives from the private sector, from different rural and urban communities as well as individual researchers. Discussions focused on two main areas (rural and urban) to explore the specific issues involved in carrying out quantitative and qualitative cost-benefit analyses in these areas. The rural discussions focused on household water reservoirs and ground water conservation, whereas the urban discussions looked at the three options of constructing a dam in the Penas region, switching to water

saving sanitation appliances in urban households and improving the low quality water distribution / pipe system to prevent currently occurring water losses.

The workshop's key results and initiated activities have been:

1. **Capacity building.** Beneficial knowledge sharing on climate change adaptation in the water sector in Bolivia's rural and urban contexts was promoted from best practices and lessons learnt from similar initiatives that have been previously undertaken in the region. The stakeholder dialogue facilitated a better understanding of local vulnerabilities, informed about the current status of climate change research, the related ongoing activities and investment plans by the government, the anticipated projects of the major water company and the demands of the different social groups involved. This included urban settlers, farmers, milk producers and finally also the impacts on the environment.

2. **Policy discussion**. Scientific, technical and socioeconomic data have been reflected upon in order to contribute to better informed decision-making on potential adaptation measures. Therefore, present and future benefits were evaluated and required changes defined.

3. **Methodological exploration.** Different calculation methods like equilibrium models, investment and financial flows, cost-benefit, cost-effectiveness and multiple criteria analysis were presented and their kind of application for the economic analysis subsequently discussed.

Among the challenges identified in the process, cultural hierarchies prevailing in Bolivia limit the ability of different stakeholders to engage in reciprocal communication, knowledge and value sharing processes at the same level. Measured against the existing power relations and governance mechanism, gaining the trust of deprived and vulnerable populations has been identified as particularly challenging.

NEPAL

General

The adaptation setting in the Nepal case study involves climate change impacts and adaptation upstream and downstream of Rupa Lake. The key stakeholder groups differ according to upstream and downstream actors and consist of local and regional government agencies, the private sector (hotels, travel agencies), environmental groups and experts (NGOs) as well as household / community institutions (cooperatives, farmers, forest groups, women groups). The project team has facilitated shared learning dialogues and focal group discussions as part of primary data generation through which they have identified two major complementary adaptation options that link the interests of upstream and downstream users located within the Rupa Lake project region. Analyses of the monetary and non-monetary costs and benefits of the adaptation options was followed by a survey on each stakeholder group's willingness to pay for the costs of adaptation as a percentage of total costs, and the share they expect other stakeholders to pay.

Stakeholder workshop

A follow-up workshop to facilitate further negotiations on distributing the estimated costs of adaptation is planned in March while a wider country workshop bringing in government players and other organizations is planned for early April.

The project progress in Nepal has been constrained by recent political demonstrations and public unrest related to the formulation of a new constitution, which led to significant interruptions in public infrastructure in terms of security, transport and power provision. As a consequence, the project process has been slightly delayed since field visits had to be postponed several times.

MALAWI

General

The Malawi case study identified two main local stakeholder groups who are internally diverse themselves.

a) Direct users: Fishermen, bird hunters and irrigation scheme members.
b) Indirect users: Representatives from government (agriculture, irrigation, fisheries, environment, local government and lands), city council and NGOs working in the catchment area.

Several adaptation options were identified through stakeholder dialogues and the following data collection methods:

1. Key informant interviews were held with community leaders, government staff and other NGOs
2. Focus group discussions took place with groups of irrigation farmers, bird hunters, fishermen and fish traders
3. Household interviews were held with people from the fishing, farming, and birds hunting community

The resulting adaptation options are:

1. Fisheries: Construction of fishponds along the lake. These are similar to cage fisheries, but instead of using cages bordering ponds are built to raise the fish.
2. Irrigation: Inclusion of soil and water technologies for reducing the soil erosion at the lake.
3. Bird hunting: Protection of birds sanctuary through policing and respective maintenance

Irrigation is seen as the most important adaptation strategy as water becomes scarce and the pressure on land and water is increased.

As a result for the whole country, the findings of this study directly assist in planning for adaptation and also allow for bringing the different stakeholders together to work towards a more sustainable use of the catchment. The project will also help academic and research circles as they bring about a new methodology for conducting a cost benefit analysis while using a case study example.

Stakeholder workshop

In collaboration with a local NGO, a stakeholder workshop is planned for late March/early April, for which specific details are being worked out.

The effective cooperation among stakeholders and the decision of who is going to take the lead on the project's implementation and how the adaptation will be financed, remain crucial challenges to be solved. Personnel changes in the local case study team are delaying the feedback processes.

MOROCCO

General

The case study focuses on conversion from flood to drip irrigation under the Green Morocco Plan, which is intended to deal with the expected impacts of climate change among other development priorities. The case study research started with literature reviews followed by rapid appraisals that identified and assessed the how different stakeholder groups prioritised monetary and non-monetary benefits from the Green Morocco Plan. The four categories of stakeholders that were identified in the case study area of Tadla are:

1. **Private sector**: Various drip irrigation companies mainly represent this group. These companies carry out technical studies for drip irrigation projects and sell the respective equipment.
2. **Public sector:** This category is represented by two individual government agencies, including the Regional Office of Agricultural Development in Tadla (ORMVAT), which is the executive of the Green Morocco Plan and responsible for managing water use in agriculture, and the Water Basin Agency, which regulates water allocation between sectors at basin level.
3. **Households:** This group of stakeholders essentially embodies farmers and agricultural workers. Farmers are stakeholders because water availability and use directly affect agricultural incomes. Agricultural workers are stakeholders because the adoption of drip irrigation systems will reduce the demand on labour force for irrigation activities, which will negatively affect workers' revenues.
4. **Environment:** The research unit on environment and agricultural resources valorization at Beni Mellal University represents the interests of the environmental stakeholder group. The environment is a stakeholder because drip irrigation is enhancing the sustainability of groundwater reserves. By increasing the availability of surface water, drip irrigation will alleviate pressure on alternative agricultural resources. As a result, groundwater resources will increase in quality and quantity.

The initial appraisals were followed by more detailed analyses of costs and benefits of drip irrigation to different farmer sizes, and was based on secondary and survey data.

Stakeholder workshop

The findings of the research will be presented for discussion by all stakeholders at a feedback workshop scheduled for March/April, focusing mostly on stakeholders in the Tadla region.

A key observation is that the drip irrigation technology readily available is mostly used for citrus crops, while smallholder farmers could make greater savings (water and financial) if they were to use it on cereal crops as well. The challenge is to make the technology for drip irrigating cereals also available especially to smallholder farmers. One of the main purposes of holding a combined workshop is to discuss with all farmers (pro and sceptical of drip irrigation) about the adaptation benefits and costs of the options and assess their commitment for the initiative. In this respect the non-monetary values and benefits involved in the analysis will play a key role to facilitate a higher acceptance rate and therewith also a stronger general project impact.

BANGLADESH

General

The case study is built on an earlier project that assessed the costs and benefits of adapting drainage systems to climate change to combat urban flooding. Initial consultations were held with individual stakeholder groups. The identified key stakeholders are city and district councils, national governmental agencies, selected professors of Khulna University as well as local communities. This was followed by a survey administered to the stakeholders, and the project is now at the stage of data analysis and report writing.

Stakeholder workshop

A feedback workshop, involving stakeholders in Khulna, the case study area, and those in Dhaka, including NGOs and government, is scheduled for early April 2012.

EMERGING KEY MESSAGES FROM ALL PROJECT SITES

1. The experiences from the different country project sites have shown that various proposed adaptation options could be either complementary or mutually exclusive. Focusing on one particular adaptation option is often not sufficient to sustainably address the issue of water scarcity. Instead, often two or more complementary measures are needed for adapting to the local adverse impacts of climate change and variability. An example can be taken from the Bolivian case study where the interests of urban and rural areas need to be combined. Here the necessary adaptation options include constructing a dam in addition to improving water efficiency measures. Similarly in Nepal, preferred adaptation measures differ among upstream and downstream lake users, but in order to achieve consensus a mutually beneficial set of adaptation options benefiting all stakeholders needs to be defined.

2. Extending the traditional calculations of a cost benefit analysis by non-monetary values has significantly altered the decision making for selected adaptation measures and generated new insights for individual stakeholders' willingness to pay for these options. Particularly communities get a much higher value from non-monetary variables and are thus more willing to contribute to it, often in kind.

3. Appointing the environment as stand-alone stakeholder has generated certain challenges for the project teams but also initiated a deeper exploration and discussion about the related costs and benefits of each adaptation action from an environmental perspective and improves the sustainability aspect of adaptation initiatives.

4. The general framework of stakeholder-focused cost benefit analyses has been applied from different starting points in different case studies. The steps therefore do not follow a similar sequence. This is mostly dictated by the degree to which the adaptation options are already defined when the case study started, and the extent to which stakeholders are able to

express their interests and their expectations of the role played by other stakeholders. In some cases, such as in Bolivia, several iterations were required to come up with a bounded case to analyse, while in Morocco, the case had clearly defined boundaries.