



Outcome 1 Fact sheet



Outcome 1: Improved national, regional and local capacities to prevent climate change-induced GLOF disasters in the Punakha-Wangdue and Chamkhar Valleys



Background

The most significant impact of climate change in Bhutan is the formation of supra-glacial lakes due to the accelerated retreat of glaciers with increasing temperatures. Glaciers in Bhutan are receding at a rate of 30-60 meters per decade. The melting ice from these receding glaciers is increasing the volume of water in glacial lakes, and the melting of ice-core dams is destabilizing them, pushing the hazard risk for Glacial Lake Outburst Floods (GLOFs) to critical levels. The risk of potential disasters inflicted by GLOFs, pose new threats to lives, livelihoods and development. The risks are mounting as water levels in several glacier lakes approach critical geostatic thresholds.

A significant portion of the country's revenue projected to 60%, is derived from hydropower, which has involved huge investments in infrastructure and requires sustainable water resources. Other sectors are also highly vulnerable to the adverse effects of climate change. Agriculture in Bhutan provides livelihoods and employment to 79% of the population. The majority of the people practice subsistence farming on small marginal land holdings which are extremely vulnerable to flood impacts.

Objective

As a follow up to the UNDP-supported National Adaptation Programme of Action (NAPA, 2006), Bhutan is currently implementing the first project funded by the Least Developed Countries Fund on Climate Change Adaptation titled *"Reducing climate change induced risks and vulnerabilities from glacial lake outburst floods in the Punakha, Wangdue and Chamkhar Valleys"*.

Outcome 1: "Improved national, regional and local capacities to prevent climate change-induced GLOF disasters in the Punakha-Wangdue and Chamkhar Valleys" of the project

works with all levels of society to inform, prepare and strengthen their ability to respond to GLOF risks from Thorthormi Glacier Lake, one of Bhutan's most dangerous glacier lakes with an earlier worst-case-scenario outburst projection as early as 2010.

The **goal** of the overall project is to enhance adaptive capacity to prevent climate change-induced GLOF disasters in Bhutan.

The **development objective** of the project outcome 1 is to improve national, regional and local capacities to prevent climate change-induced GLOF disasters.

Implementation

Project implementation started in 2008 and will continue until 2012.

Project outcome 1 is implemented by the Department of Disaster Management (DDM), Royal Government of Bhutan. The UNDP Country Office in Bhutan is ensuring oversight, monitoring, evaluation and technical guidance, along with the Project Board (PB) and the Technical Support Advisory Team (TSAT) comprising of key stakeholders from the Royal Government of Bhutan and funding agencies.

Source of funding

• GEF-LDCF	3,445,050
• UNDP	396,224
• Government (in-kind)	2,680,000
• Austrian Development Agency	800,000
• WWF Bhutan	30,000

Achievements

Extensive awareness and advocacy activities have been undertaken at the national, district, sub-district and community levels. A bottom-up approach for Community-Based Disaster Risk Management (CBDRM) includes the formation of district and sub-district Disaster Management

(DM) committees and planning teams. These groups have participated in orientations and “training of trainers” workshops and have, therefore, been able to train and sensitize local community/village leaders and communities. Based on the trainings, DM plans have so far been developed in 67% of the 'Chiwogs' (group of villages) and 53% of sub-districts, and will contribute to the formulation of district DM plans in all three pilot districts of Punakha, Wangdue and Bumthang.

At the policy-level, a draft DM Bill was formulated with support from the project and reviewed several times by national stakeholders as well as by independent international experts and UNDP in consultation with international stakeholders. In October 2011, the draft DM Bill was endorsed by the Cabinet and submitted to the National Assembly for expected deliberation in the Parliamentary winter session in January 2012 and ratification in the summer session 2012. The DM Act is expected to strengthen the institutionalization of DM piloted by the project at national and local levels.

National level: 50% of Disaster Risk Management (DRM) focal points are able to prioritize, plan and implement measures to reduce human and material losses from potential GLOFs, out of which 71% are trained and sensitized on climate risks and disaster management. 60% of the DRM sector focal persons report that their respective sector plans are incorporating long term climate and disaster risk reduction measures. 90% of interviewed officials are aware of the draft Disaster Management (DM) Bill, 79% are aware of the National Disaster Risk Management Framework (NDRMF), and 71% are aware of the government circular restricting construction in red zone areas identified in the GLOF hazard zonation map prepared under the project.

District and Sub-district levels: 43% of the district and sub-district DRM focal points and DRM committee members are, similarly, able to prioritize, plan and implement measures to reduce human and material losses from potential GLOFs. 35% of the DRM focal points and committee members report that DRM frameworks and guidelines support climate change adaptation efforts. 60% of district and sub-district DRM focal points and committee members and 49% of community respondents

are aware of the government circular restricting construction in the GLOF red zone areas.

Community-level: 39% of participants feel that they are better prepared to respond to GLOF disasters since project inception. 57% of people have participated in awareness activities and/or mock-drills.

Key Challenges and lessons

Appointment of district DRM focal points, establishment of DM committees and planning teams and CBDRM trainings piloted by the project have led to duplication in more than half of Bhutan’s districts. However, despite training of all DRM focal points and committee members at district and sub-district levels, only 55% of current respondents have been trained in CBDRM and 64% have participated in other awareness activities. This shift is due to frequent transfer of officials to other districts. The DM bill is expected to help strengthen the institutionalization of DRM focal points across the country once enacted.

A recent survey found that the best means to raise awareness about natural disasters and risk reduction at the community level is via radio or other media, with radio reported as the preferred information source by 82% of households, followed by 26% newspapers and only 19% through awareness campaigns/trainings.

Best practices

The project has used existing institutional set-up at the district level to effectively integrate CBDRM training and planning activities, thus, increasing ownership and sustainability. The district level interaction with local communities, though the CBDRM activities has created greater insight and understanding of the realities faced by the people.

The CBDRM trainings and awareness activities are aimed at developing district and sub-district level disaster management plans. These plans will eventually be used to mainstream disaster management activities into the overall district and sub-district development plans.

Resources

<http://www.bhutanglofproject.gov.bt>
<http://www.undp-adaptation.org/project/glof/>



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