

Climate Adaptation to Protect Human Health

BHUTAN



A Global Pilot

The climate change and human health adaptation project is a unique global initiative jointly implemented by WHO and UNDP. This novel project, piloted in seven countries, seeks to identify and share solutions to address health risks caused and exacerbated by climate change.

Bhutan Project Objective

To strengthen national capacity to identify and prevent adverse climate change related health outcomes in Bhutan.

Climate change in Bhutan

Bhutan is located on the fragile mountainous ecosystem of the eastern Himalayas, between China in the north and India on the west, south, and east. Bhutan has a wide range of micro-climatic conditions within its three distinct climatic zones; the southern belt has a hot, humid climate, with temperatures remaining fairly even throughout the year and significant rainfall; the central inner Himalayas have a cool, temperate climate with average rainfall and the higher and more northern region has an alpine climate, with less rainfall. Rising mean temperatures are the main projected affect of climate change in Bhutan, with many associated health risks.

Key Health Concerns and Vulnerability

Bhutan suffers from high rates of a series of climate-sensitive health burdens. Projected temperature rise (higher in mountainous areas than elsewhere in the world) is likely to increase the probability of Glacial Lake Outburst Floods (GLOF); increases in the geographic range and incidence of vector-borne diseases, particularly malaria and dengue; and increase in the incidence of water borne diseases. With an estimated 2,674 glacial lakes in Bhutan, and 24 considered potentially dangerous, GLOF's represent a major climate change concern in the country. Major incidents of glacial lake outbursts have been documented in 1957, 1960, and 1994. Flash floods and landslides are also common during the monsoon period of June to August.

Increasing temperatures are complicating control of vector-borne diseases in Bhutan. Two types of malaria are prevalent in Bhutan: the more severe *Plasmodium falciparum* (30-60% of cases) and *Plasmodium vivax* with over 50% of the population residing in malarial areas. Dengue is an emerging infectious disease in Bhutan. Dengue was first documented in Bhutan in 2004 and is now endemic during the monsoon period.

Diarrhoeal diseases represent a significant cause of morbidity in Bhutan for the last decade, and contribute to about 10-15 % of morbidity cases. Climate change has also influenced water resources due to drying up of water sources or contamination due to flooding, increasing the risk of diarrhoeal disease.

Project Structure

The Environmental Health Unit (EHU), Department of Public Health (DoPH), and Ministry of Health (MoH) will be the principal executing agencies for the PDF-B phase of the project. The EHU will be the central coordinating body which is responsible for implementation, liaising with other units, sections and programs, as well as for timely reporting, monitoring and evaluation of the project. A Project Steering Committee (PSC) will be created in order to advise the Environmental Health Unit team, Department of Public Health. The PSC includes several Government Ministries as well as WHO and UNDP.

Bhutan is one of seven countries taking part in this Global Pilot. The seven countries, Barbados, Bhutan, China, Fiji, Jordan, Kenya and Uzbekistan, together represent four distinct environments (Highlands, Small Islands, Arid Countries and Urban environments,) and their related health risks. For more information visit the website at www.who.int/globalchange/projects/en

Project Facts

Donor: GEF Special Climate Change Fund (SCCF)

Funding: 550,000 USD
Time frame: 2010—2014

Location:
The Bhutan highlands

Key Stakeholders:

- ◆ Royal Government of Bhutan, Line Ministries
- ◆ Royal Government of Bhutan, *Dzongkhag* & *Geog* Administrations
- ◆ Royal Society for Protection of Nature, Bhutan
- ◆ Tarayana Foundations, Bhutan
- ◆ Highland/riverine communities

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UZBEKISTAN KENYA JORDAN FIJI CHINA BHUTAN BARBADOS

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Project Scope

This pilot project will provide better information and surveillance of climate change related health risks in Bhutan. Improved data collection will allow the country to monitor and receive early warnings and thus the opportunity to prepare and respond to potential health risks. The project will also provide training and development of tools for health providers to understand the influence of climate change and variability on the transmission of vector borne diseases, extreme weather events and other health issues. To be able to do this effectively the following areas of adaptive capacity have been identified to be particularly targeted by the project:

- ◆ **Metrological and surveillance data** - Bhutan has very limited metrological data and sparsely located metrological stations. There is also very limited surveillance for climate-sensitive health outcomes, resulting in insufficient data and lack of awareness of the possible health impacts of climate change across all government sectors, including health.
- ◆ **Resources** - There is a lack of sufficient national capacity in terms of human and financial resources for incorporating climate change risks into all levels of health activities.
- ◆ **Mainstreaming of climate change** - National Programs dealing with climate sensitive diseases such as the National Vector borne Disease Control Program (VDCP), ARI and Diarrhoeal Disease programs, Water and Sanitation programs, do not currently take climate change into account.
- ◆ **Coordination** - A new Environmental Health program has been formed in the Ministry of Health to coordinate and implement the climate and health initiatives.

Expected Benefits

The greatest national benefit envisaged in the implementation of this program will be the enhanced awareness and capacity of health workers and the community at large.

Additional benefits include:

- ◆ Helping to plan and sustain the Vector borne Disease Control Program, taking into consideration the impact of climate change on the incidence of malaria, Dengue Hemorrhagic Fever and other vector-borne diseases in the country.
- ◆ Contribute towards improvement in rural water quality and community sanitation.
- ◆ Help create awareness on the health impacts of climate change.

Project Outcomes and Outputs

Outcome 1: Risk Assessment and integrated surveillance enhanced for effective management of climate sensitive health risks.

1.1: Vulnerability and impact assessment determines high-risk areas and populations, and establishes the disease burden (baseline) of climate sensitive diseases.

1.2: Integrated surveillance and alert network system piloted across high-risk (riverine and highland) areas to monitor and provide early detection of changes in climate sensitive diseases and health risks.

Outcome 2: Community and health sector institutions have improved capacity to respond to climate-sensitive health risks.

2.1: Professional skills and health system strengthen in areas identified to have higher risks of extreme weather events or disasters, and epidemic diseases by providing training, capacity building and institutional support.

2.2: Strengthened awareness of climate relevance to health amongst national policy makers, and improved multi-sector health coordination improves effectiveness of prevention, monitoring and management of health risks.

2.3: Increased community awareness, capacity and empowerment helps communities prepare for and cope with increased stresses on the community posed by climate change or emergencies.

Outcome 3: Emergency preparedness and disease prevention measures implemented in areas of heightened health risk due to climate change.

3.1: Implementation of Health sector Emergency Contingency Plan.

3.2: Scale up and targeting of community level interventions for control of water and vector borne diseases, mental health and nutritional issues.