



Needs and Challenges on adaptation planning at the national level

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Tshewang Zangmo

National Environment Commission

Royal Government of Bhutan



Presentation Outline

Regulatory Framework

Institutional Arrangements

National development planning process

Bhutan's Vulnerability to Climate Change

Adaptation projects (NAPA and NAPs)

M&E framework for Adaptation & for National
Planning Process

Challenges and Assistance required to support
the development and implementation of the
plans.



Regulatory Framework

- Currently there is no specific act/legislation/policy on Climate Change
 - NEPA 2007: (Roles of the Commission and Secretariat)
 - Negotiate and enforce bilateral and multilateral environment agreement
 - Recommend ratification of bilateral and multilateral environmental instruments to the Parliament for subsequent enactment

- Constitution: Article 5

Every Bhutanese is a trustee of the Kingdom's natural resources and environment for the benefit of the present and future generations and it is the fundamental duty of every citizen to contribute to the protection of the natural environment, conservation of the rich biodiversity of Bhutan and prevention of all forms of ecological degradation including noise, visual and physical pollution through the adoption and support of environment friendly practices and policies.



Regulatory Framework

- Climate Dialogue was held in May 2015
 - Directives to develop an indicative mandate for climate change action in Bhutan through a policy, legislation, or strategy for climate change.
 - Initiate process for preparation of National Adaptation Plans for Bhutan.



Institutional Arrangements

- Coordinated by the National Environment Commission Secretariat (NECS)
 - NEC: High level Climate Change Committee
 - Multi sectoral Technical Committee on Climate Change
 - NECS: UNFCCC focal agency



National development planning process

In the 11th Five Year Plan for Bhutan:

- National Key Result Areas:
 - Carbon Neutral and Green/Climate Resilient development
- Objectives:
 - National policies, plans and capacity strengthened to achieve carbon neutral and climate resilient development

Bhutan's Vulnerability to Climate Change



fragile mountainous landscape



landlocked & least developed country

Heavy dependence on climate sensitive sectors
Low level of economic diversification



Agrarian society
(69% of population)



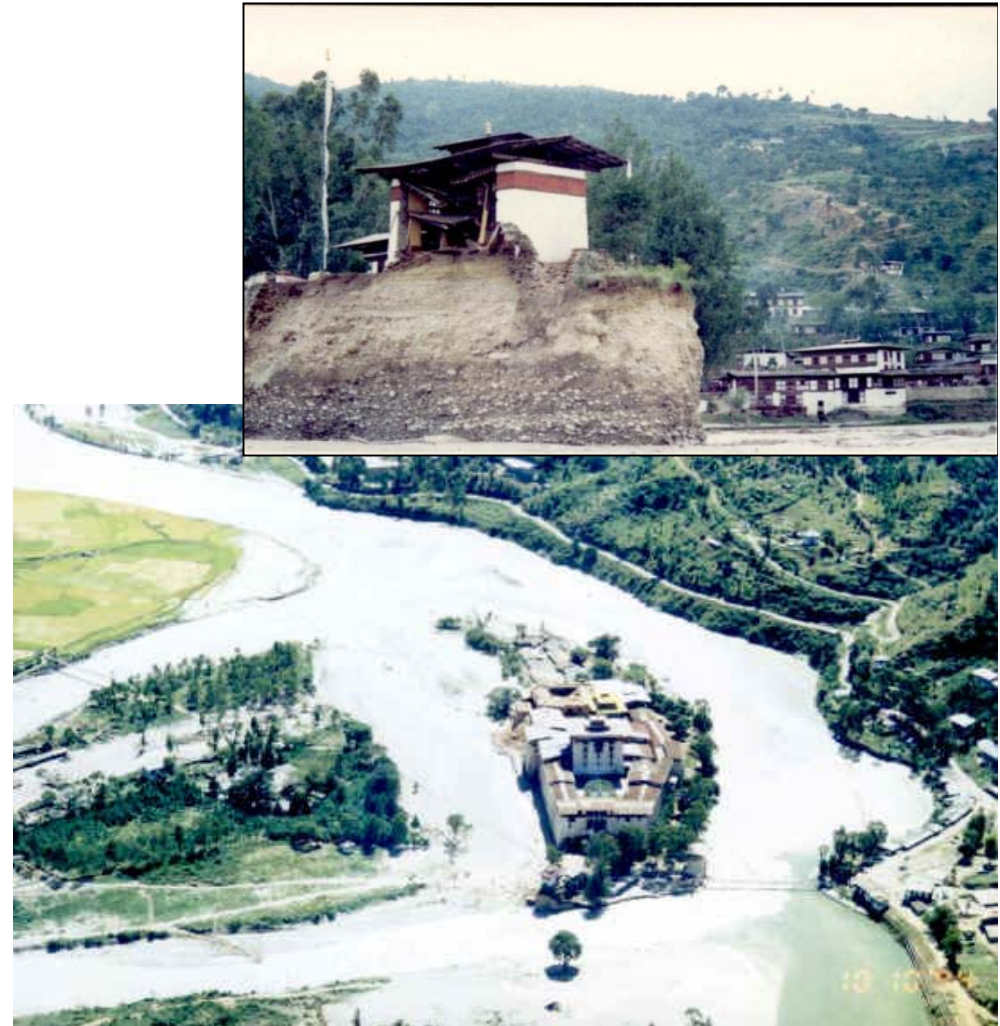
Large investments in
hydropower

Large areas of glaciers and glacial lakes



Current Vulnerabilities

- Glacial Lake Outburst Floods
 - due to temperature rise
- Land Degradation
 - Landslides, erosion due changes in to weather patterns, high intensity rainfall, cyclones
- Flashfloods
 - Intense rainfall periods, cyclones



Current Vulnerabilities

- Droughts
 - Drying water sources due to temperature rise, longer intervals between rains
- Wind and Thunder storms
- Pests and diseases



Potential areas impacts of climate change in Bhutan



Human Health

Rising Temperatures may cause the spread of tropical diseases and heat stress into higher altitudes.



Natural Disasters

Rapidly retreating alpine glaciers is increasing the risk of 'glacial lake outburst floods' endangering life and property downstream. Increasing flash floods may also be caused by intensifying



Forests & Biodiversity

Increasing temperatures may cause species and ecosystems to shift and species at higher elevations and other species unable to migrate to become extinct.



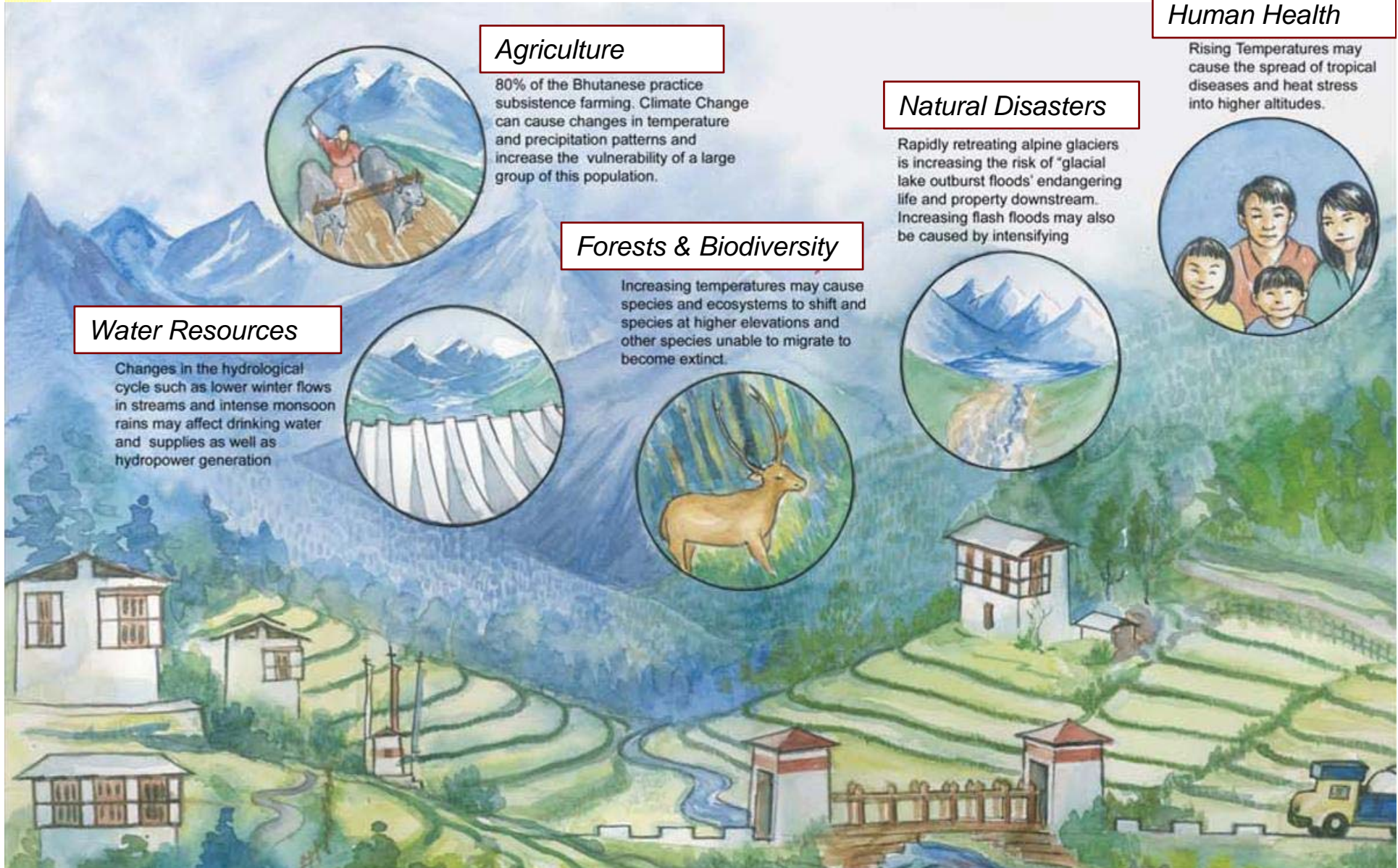
Agriculture

80% of the Bhutanese practice subsistence farming. Climate Change can cause changes in temperature and precipitation patterns and increase the vulnerability of a large group of this population.



Water Resources

Changes in the hydrological cycle such as lower winter flows in streams and intense monsoon rains may affect drinking water and supplies as well as hydropower generation





NAPA I Project (GLOF Project)

*Reducing Climate Change-induced Risks and Vulnerabilities
from Glacial Lake Outburst Floods
in the Punakha-Wangdi and Chamkhar Valleys*

Three Components

1. Artificial lowering of water level in Thorthormi Lake
 2. Increase capacity for disaster risk management in affected valleys
 3. Installing Technical Early Warning System for glacial lake outburst floods
- Funded by LDCF, RGOB, UNDP, Austrian Development Agency and the WWF-Bhutan (USD 8.273 million)
 - Project period: 5 yrs (commencing 2008)

NAPA II Project



Second National Adaptation Programme of Action
(NAPA):

Contributes to the Climate Resilient Development
of the NKRA (11th FYP)

Project Title:

Addressing the Risks of Climate induced
Disasters through Enhanced National and
Local capacity of Effective Actions.



Project Details

Total Budget: USD 11.49 million

Project duration: July 2014-June 2018 (4years)

Implementing Partners:

1. Phuentsholing Thromde
2. DGM, MoEA
3. DDM, MoHCA
4. Tarayana Foundation
5. DoFPS, MoAF
6. WRCD, NECS
7. DHMS, MoEA
8. Mongar Municipality
9. CCD, NECS



Management

- **Quarterly Progress Meetings**
 - Workshop with all implementing agencies
 - Presentation of Progress (physical & financial)
 - Preparation of FACE form for upcoming quarter
 - Other issues
- **Project Board Meeting (Semi-annually)**
 - Secretary, NECS (Chair)
 - DRR, UNDP
 - Director (GNHC)
 - Director/Director General (DGM, DHMS, DoFPS, DDM)
 - Dasho Dzongdag (Mongar)
 - Executive Secretary (Phuentsholing Thromde)
 - Secretary General (Tarayana Foudnation)
 - Project Director (member secretary)



Outcome 1

1. Risks from climate-induced floods and landslides reduced in Bhutan's economic and industrial hub Pasakha Industrial Area (USD 4,634,800)
 - **Output 1.1:** Pasakha Industrial Area protected from flooding events through watershed management activities, slope stabilization measures, river bank protection works, river training works and development of flood buffer zones (USD 400,000).
 - **Output 1.2:** Climate-induced landslide risk in Phuentsholing Township reduced through slope stabilization measures in selected critical landslide areas (USD 3,988,100).
 - **Output 1.3:** Integrated risk hazard assessment and mapping completed in four critical landslide- and flood-prone areas in Bhutan with data collection and presentation standards compatible with national database (USD 246,700)



Outcome 2

2. Community resilience to climate-induced risks strengthened in at least four Dzongkhags (1,898,800)
 - **Output 2.1:** Climate-resilient water harvesting, storage and distribution systems designed, built and rehabilitated in at least four dzongkhags, including one municipality (USD 824,750).
 - **Output 2.2:** Community-level water resources inventory completed and maintained by Dzongkhag Administrations in at least four dzongkhags (USD 120,000)
 - **Output 2.3:** Disaster management institutions at various levels established and strengthened in four dzongkhags for better preparedness, and response to, climate-induced disasters (USD 954,050)



M&E framework for Adaptation & for National Planning Process

- Adaptation Projects: Have their own project specific M&E as per donor and government requirement
- M&E for National Planning process:
 - Annual Performance Agreement (APA)
 - Mid Term Review



National Roadmap for NAP

- A LDCF MSP is being prepared for NAP
- Sensitization on NAP
- Stocktaking adaptation gaps and needs
- Institutional Arrangement for NAPs
- Implementation of NAP MSP



Challenges and Assistance required

Lack of Technical Support

- Assessing detail climate vulnerabilities and identifying adaptation options at the sectoral level
- Capacity building of the sectors
- Integrate adaptation options in the policies and plans by sectors
- Technical support in comprehensively and iteratively assessing development needs and climate vulnerabilities



Lack of Financial support

- no committed funds for NAPs

THANK YOU
 GRACIAS
 ARIGATO
 SHUKURIA
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 DANKSCHEEN
 TASHAKKUR ATU
 YAQHANYELAY
 SUKSAMA
 EKHMET
 MEHRBANI
 PALDIES
 BOLZIN
 MERCI
 BIYAN
 SHUKRIA
 TINGKI