



National Adaptation Plan process in focus: Lessons from Bhutan



The Kingdom of Bhutan is a landlocked least developed country (LDC) in the Himalayan Mountains, with a population of 768,577, covering an area of 38,394 km². The area is mountainous, with steep slopes and 70% forest cover. The climate varies by altitude from alpine to subtropical and is strongly influenced by monsoons. The terrain limits agricultural productivity, but whilst agriculture contributes only 16% to GDP, it employs around 58% of the workforce. The terrain enables large-scale generation of hydropower, which accounts for a third of exports (in particular to neighbouring India), whilst also providing clean energy for domestic use. This, together with large tracts of forests, enables Bhutan to be a net sink of greenhouse gases.

Bhutan is in the medium human development category, at 132 out of 188 countries in terms of its Human Development Index (2016). Although Bhutan has experienced rapid poverty reduction in the past decade, poverty persists and inequities are felt in rural areas in particular. Climate change threatens to undermine the achievement of development and poverty reduction goals.

Climate change risks

In Bhutan, mean annual temperatures are predicted to increase by 0.8°C - 1°C by 2039. Changes in rainfall are expected to lead to wetter conditions in the monsoon season and slightly drier winters. Extreme climate events, such as heavy rainfall, are becoming more common and have led to flash floods and landslides.

These hazards are expected to affect a range of sectors. This is anticipated to lead to a decrease in agricultural crop yields, whilst undermining hydropower generation - due to changes in water distribution and Glacial Lake Outburst Flows (GLOF). Together, these impacts could lead to loss of lives and infrastructure from GLOF, as well as threats to biodiversity due to species migration, invasive species and increasing propensity for forest fires.

Groundwork for supporting the NAP process

Plans and policies

Bhutan developed its National Adaptation Programme of Action (NAPA) early on, in 2006. The NAPA formed a set of objectives, which included identifying immediate projects and activities that can help communities adapt and to integrate climate change risks into the national planning process. The NAPA projects and profiles were updated in 2012, to identify eight priority projects.

Environmental protection is a priority for the Kingdom of Bhutan, and this is mandated by the Constitution. Bhutan's 11th Five Year Development Plan 2013-2018 prioritises climate change, with a National Key Result Area (NKRA) on 'Carbon neutral/green and climate resilient development'. However, the NKRA still needs to be articulated into sectoral strategies, in key areas such as hydropower and agriculture. Climate change adaptation is not explicitly integrated into policies such as the National Environment Protection Act (2007) and the Economic Development Policy (2017). Bhutan ratified the Paris Agreement in September 2017. The country's Nationally Determined Contribution (NDC), submitted in 2015, includes an adaptation component, identifying ten priority adaptation needs based on the NAPA and the vulnerability assessment of the Second National Communication (2011). The ten adaptation needs are summarised in the table overleaf.



'Throughout this process, Bhutan has learned the value of involving all stakeholders for any planning and implementation, also the benefit of strong political will and support, and an enabling environment. It is crucial to understand local dynamics and have access to relevant data and information.'

Mr. Chenchu Norbu, Secretary and UNFCCC focal point, National Environment Commission, Royal Government of Bhutan

Priority adaptation needs defined in NDC

1.	Water security through Integrated Water Resource Management (IWRM)
2.	Climate resilient agriculture towards achieving food and nutrition security
3.	Sustainable forest management and conservation of biodiversity to ensure sustained environmental services
4.	Strengthened resilience to climate change hazards through e.g. early warning systems
5.	Minimizing climate-related health risks
6.	Climate proof transport infrastructure against landslides and flash floods
7.	Promoting climate resilient livestock farming towards poverty alleviation and self sufficiency
8.	Enhancing climate information services for vulnerability and adaptation assessment
9.	Promote clean renewable and climate resilient energy generation
10.	Integrate climate resilient and low emission strategies in urban and rural settlements

As adaptation to climate change is critical, Bhutan has highlighted priority adaptation actions in its NDC. For each of the priorities, a set of proposed adaptation actions are put forward. However, the NDC also stated that it recognises the importance of formulating a National Adaptation Plan (NAP) for the medium- to long-term, to reduce vulnerability, by integrating adaptation into development planning and implementing priority adaptation actions.

Preparing for adaptation planning

Bhutan is budgeting some national resources to climate change adaptation and mitigation through the implementation of the Five Year Plan, as well as through the Bhutan Trust Fund for Environmental Conservation. In the period of 2008-2013, approximately 2% of public spending was on climate change. In 2012-2013, of all climate change finance in country, 39% was from national sources, and 61% external funding. External funding came from bi-lateral sources, in particular India, and from multi-lateral sources, in particular UN agencies, the Global Environment Facility (GEF) and the World Bank.

The importance of external funding to enable the formulation and implementation of the NAP process has been highlighted in the NDC. Preliminary climate change scenarios and a vulnerability assessment were carried out as part of the Second National Communication (SNC) to the UNFCCC (2011). The impact of climate change, including changes in temperature, rainfall patterns and droughts, was assessed for five key sectors: water, agriculture, energy, forestry and biodiversity, and health. In terms of climate data and systems, the country has very limited historical meteorological records prior to the 1990s. There are still regions in the country that lack meteorological stations. A range of projects are supporting the strengthening of climate and weather information systems. Preliminary assessments have been carried out specifically for the water sector. Water has been identified as a key, cross-cutting sector for adaptation in the country, calling for further water-specific risk assessments. There is a need to put in place more solid baseline risk assessments and economic analysis to inform selection of priority adaptation investments. A capacity development plan on adaptation and a review of institutional arrangements were carried out under the NAPA II project.



Bhutan's NAP process

Implementation of adaptation actions

Bhutan has implemented some key adaptation projects, which include:

- NAPA I project, *Reducing climate change induced risks and vulnerabilities from GLOF* covering 3 NAPA (2006) priority areas, implemented in 2008-2013, funded by the Least Developed Countries Fund (LDCF) and supported by UNDP.
- NAPA II project, *Addressing the Risk of Climate-Induced Disasters through Enhanced National and Local Capacity in Bhutan*, addressing 6 NAPA (2012) priority areas, funded by the LDCF and supported by UNDP, initiated in 2014.
- NAPA III project on *Enhancing Sustainability and Climate Resilience of Forest and Agricultural Landscape and Community Livelihoods in Bhutan* has been approved in June 2017 by the LDCF.
- A range of projects funded by bi-lateral and multi-lateral donors on e.g. improved climate information systems; managing landslides, floods and forest fires; and enhancing disaster risk management approaches.
- Upcoming proposal submissions are being prepared, including to the Green Climate Fund (GCF), on issues such as agriculture, land management and climate health.

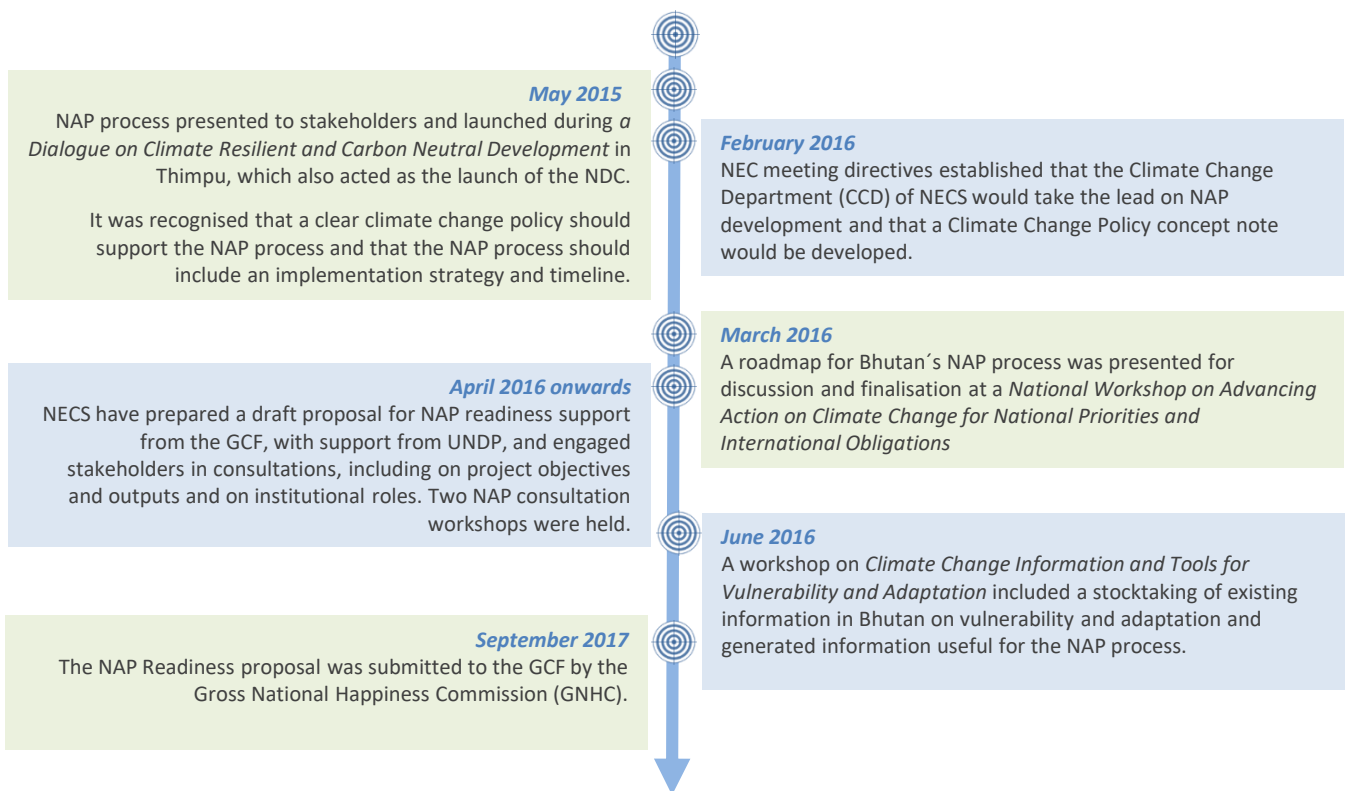
Institutional arrangements

The National Environment Commission (NEC), chaired by the Honourable Prime Minister, is the main high-level, multi-sector coordinating body on environmental issues. It also serves as the National Climate Change Committee (NCCC). The Climate Change Coordination Committee (C4) serves as a forum to discuss and coordinate matters related to climate change in Bhutan and make recommendations to the NCCC. C4 has 15 members, representing governmental agencies, private sector and civil society organizations, and is chaired by the Secretary of NEC Secretariat.

Bhutan's NAP timeline

Bhutan's NAP process builds on the on-going work in country at policy, planning and implementation level, including the NAPA (2006; update 2012) and related projects, and the NDC. The NAP process itself has evolved through a series of workshops and stakeholder consultations (including government sectors, donor agencies and universities) and the development of a consolidated NAP proposal to support full formulation. The process is led by the National Environment Commission Secretariat (NECS).

Details are shown in this timeline:



What is the process to formulate and implement the NAP?

The Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) established the National Adaptation Plan (NAP) process in 2010, to enhance country-led planning and preparedness for climate change adaptation (CCA) in the medium and long-term. The objectives of the NAP are to reduce vulnerability to the impacts of climate change and to integrate adaptation into all levels of development planning. The NAP process is multi-sectoral, involving Ministries of Environment as well as Planning and Finance, in addition to other key Ministries. By bringing greater institutional integration and coordination to adaptation planning, NAPs can enhance ongoing national development planning processes, safeguard development gains, and build resilience.



‘Seventy-two percent of our country is under forest cover and all of that forest is pristine. That’s why we are one of the few remaining biodiversity hotspots in the world - and that’s why we are a carbon neutral country in a world that is threatened with climate change.’

Mr. Tshering Tobgay, Prime Minister, Royal Government of Bhutan (speaking at a TED Talk ‘This country isn’t just carbon neutral — it’s carbon negative’, February 2016, Vancouver, Canada)

Challenges

A scaling up of adaptation investments is required to enable reduction of climate vulnerability in Bhutan. Some of the challenges in-country for the NAP process include the need to strengthen both institutional capacity for adaptation planning and implementation, as well as inter-sectoral coordination. Climate change data and information remains limited, and more rigorous baseline assessments and monitoring and evaluation systems are needed to guide adaptation investments and to scale-up medium- to long-term adaptation options. Whilst climate change is included in the 11th Five Year Plan, it is yet to be integrated into entire Government decision-making processes, including cross-sectorally and at sub-national level.

Opportunities

The upcoming 12th Five Year Plan 2018-2023 offers opportunities to integrate adaptation, including the adaptation priorities identified in the NDC and to include climate-relevant Sustainable Development Goals (SDGs). It can further support the mainstreaming of adaptation across sectors and scales into development planning and budgeting. Priority areas for the NAP process, identified during consultations, include: enhancing climate information; addressing climate risk management in line with NDC adaptation priorities, especially with regards to water; strengthening prioritisation and appraisal of adaptation investments; and building monitoring and evaluation systems to strengthen learning and evidence on adaptation. The GCF NAP Readiness proposal is awaiting the funding decision.

Successes

Key documents

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_11900



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