

Policy Brief

Bhutan: Leading Climate Change Action

In 2020, countries are putting forward their long-term strategies towards achieving climate neutrality by 2050 as part of commitments under the Paris Agreement and will also present their second Nationally Determined Contributions for enhanced mitigation actions before COP26. Bhutan is well on its way to identifying its enhanced priority actions and needs to remain carbon neutral and building climate resilience while pursuing its sustainable development goals.

Climate change actions are long term investments that provide both local and global benefits and therefore such actions must be integrated with long term national economic strategies across all sectors. Furthermore, investments for recovery from the COVID-19 pandemic and preparations for a new normal also presents opportunities for a green recovery that can provide both local and global environmental benefits.

The impact of climate change

While Bhutan has made rapid strides in socio-economic development in the past decades and is poised to graduate from its status as a Least Developed Country (LDC), climate change threatens the gains made so far. The economy is still largely dependent on climate sensitive sectors like agriculture and hydropower, and 60% of the population live in rural areas agriculture-dependent livelihoods. In addition, the mountainous landscape which makes communication and transport expensive, is fragile and vulnerable to climate change.

Bhutan is already experiencing the impacts of climate change with observed decreases in snow cover, increasing incidences of declining water availability, flashfloods and windstorms. According to climate models, Bhutan will experience higher average temperatures (by 0.8°C to as much as 3.2°C by the end of the century) with greater changes for the spring and winters. The rainy season is expected to be wetter while the dry season becomes ever drier.

With a changing climate, the risks and vulnerabilities for Bhutan will also increase. Food production will be adversely affected by availability of water and changes in the monsoon timing. Changes in river flows will affect hydropower generation while increased risks of extreme events from flash floods, landslides and GLOF threaten human lives, settlements and infrastructure.

Responding to climate change

Mitigation and adaptation

Tackling climate change requires action on two fronts. Firstly, **climate change mitigation** requires limiting or preventing emission of greenhouse gases. Those gases can also be removed from the atmosphere by carbon sinks such as forests. Secondly, **climate adaptation** is needed to manage the impacts of climate change.

Adaptation is needed to address current vulnerabilities and also to reduce the risks from future impacts. Ambitious mitigation measures will reduce the magnitude of climate change while bringing local benefits, and early mitigation action will be cheaper than delayed action.

UNFCCC and Paris Agreement

The international community agreed to address the threat of climate change under the United Nations Framework Convention on Climate Change (UNFCCC) adopted in 1992. In 2015 the Paris Agreement was adopted to enhance the implementation of the framework convention. The Paris Agreement has a temperature goal to keep average global temperature rise in this century to well below 2°C relative to pre-industrial levels with efforts to limit temperature rise to 1.5°C. Parties have also agreed to put forward **long term strategies** to achieve carbon neutrality by 2050.

NDCs and NAPs

Under the Paris Agreement, Parties agreed to put forward ‘**Nationally Determined Contributions**’ (NDCs) as a way to communicate their plans and pledges to reduce GHG emissions. NDCs are to be presented every five years with increasing ambition towards eventual achievement of Paris Agreement goals.

Countries will also work towards building climate resilience through planning and implementation of adaptation measures. Parties can submit an ‘**Adaptation Communication**’ to convey national priorities and needs

for adaptation as a part of their NDC, a **National Adaptation Plan** (NAP) or National Communications. For many countries, the process to formulate and implement NAPs is an important mechanism to ensure adaptation action in the short, medium and long term.

As part of the overall obligations under the UNFCCC and the Paris Agreement, developed country parties committed to provide financial and technical support to developing country parties to plan and implement mitigation and adaptation actions.

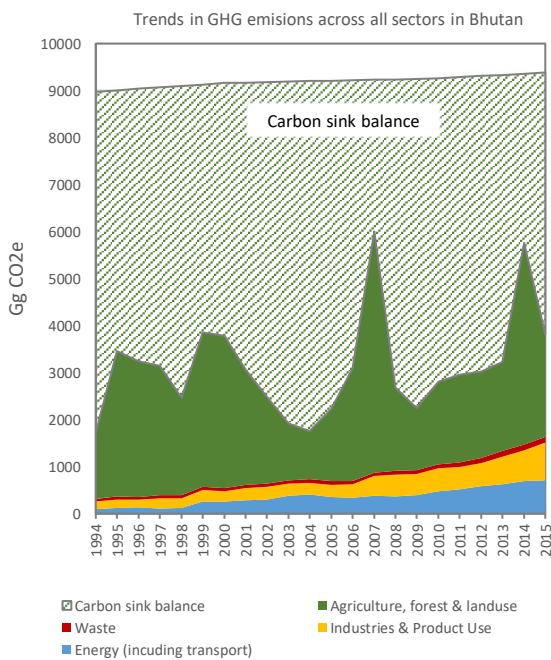


Figure 1: Due to the vast forest cover, Bhutan is still carbon neutral with a net sink balance. Most of the emissions are from agriculture, land use and forestry, with forest fires and timber removal having the most significant contribution. However, the overall emissions from other sectors are increasing rapidly. (Data source: Third National Communication from Bhutan)

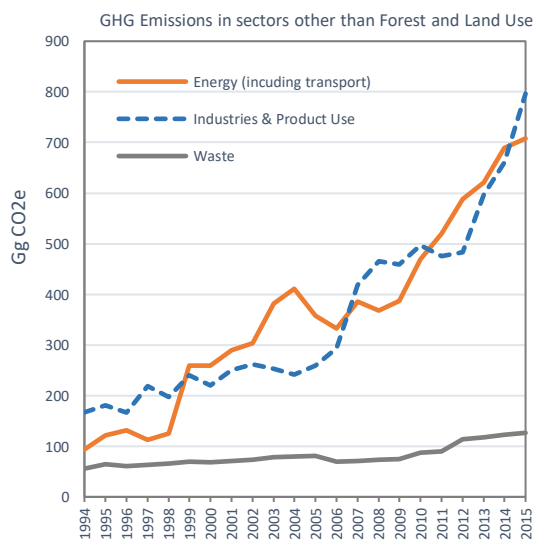


Figure 2: Trends in emissions from energy use (transport, industries construction and others), and emission from industrial processing is increasing dramatically and has the most potential for mitigation action. (Data source: Third National Communication from Bhutan)

Bhutan’s actions on climate change

1st NDC and carbon neutral commitment

Bhutan first pledged to remain carbon neutral in 2009 at COP15 of UNFCCC and re-affirmed this commitment in 2015 under its first NDC to the Paris Agreement. Bhutan pledged to remain carbon neutral by maintaining and enhancing its forest carbon sink while pursuing a **low carbon and climate resilient development pathway**. Towards this goal, nine broad priority mitigation actions areas were identified for low GHG development in the 1st NDC. The NDC also included 10 priority areas for adaptation needs but stated that the needs and priorities would be detailed in its future NAP.

The latest national greenhouse gas (GHG) inventory shows that Bhutan is still a net carbon sink with forest carbon sequestration capacity of 9.386 million tons (MT) of CO₂ against total national GHG emissions of 3.814 MT CO₂e in 2015 (Figure 1). This is possible due to the large forest cover (71%) and almost 100% electricity generation from clean renewable hydropower.

While total emissions are only about a third of total forest sink capacity, emissions are increasing rapidly, particularly from energy (fuel for transport and industries) and process emissions from industries (figure 2). While emissions from Bhutan are negligible at a global level, Bhutan is committed to remaining carbon neutral and pursuing a low emission development pathway. Bhutan made this commitment, despite being a LDC with a development imperative, in light of the magnitude of the climate threat.

Integrating climate action

Bhutan’s commitment to climate action has been integrated into development planning by identifying ‘*carbon-neutral and climate-resilient development*’ as one of the ‘*national key result areas*’ in the 12th five-year plan. Furthermore, in order to enhance green growth and employment, fiscal and tax measures for increasing energy efficiencies and pollution control in industries, transport and other sectors have been provided in the Economic Development Policy 2016. Low Emission

Development Strategies (LEDS) for the priority sectors of Industries, Transport, Human Settlements and Energy Efficiency were also developed to guide sectors in prioritising sectoral actions and programs. The National Climate Change Policy for Bhutan was adopted in 2020.

Implementing climate action

Several climate resilience and mitigation projects have been implemented with various bilateral and multilateral support. Notable among these were National Adaptation Programme of Action (NAPA) projects to address the country’s most urgent and immediate adaptation needs. Recently the project for ‘Supporting Climate Resilience and Transformational Changes in the Agriculture Sector’ will implement adaptation priorities identified in the NDC. Several mitigation projects to reduce transport emissions are promoting the adoption of electric vehicles and enabling low-emission mass transport.

Looking forward

Towards 2nd NDCs in 2020

Parties to the Paris Agreement are due to present their 2nd NDCs in 2020 and UNEP’s 2019 Emission Gap report shows the level of ambition required. Current pledges fall far short of the ambitious actions needed and the report calls for dramatic strengthening of NDCs in 2020. It states that countries need to increase their NDC ambitions threefold to meet the 2°C target and by more than fivefold to meet the 1.5°C target.

Long-term strategies and net zero Commitments

Countries are also preparing and submitting national Long-term Low Emission Development Strategies to show a pathway to achieving carbon neutrality by 2050. These long-term strategies will provide the overall direction of future NDCs for countries based on their circumstances. The NEC has also started the process to prepare Bhutan’s Long-Term Strategy.

Climate Ambition Summit 2020

The Climate Ambition Summit 2020 will be hosted on 12th December 2020, the fifth Anniversary of the Paris Agreement, by the UN, the UK (COP26 Presidency), and France, in partnership with Chile (COP25 Presidency) and Italy (COP26 partner). The Summit will be an important milestone on the road to COP26. It is an opportunity for leaders to bring forward concrete plans that put us firmly on a greener, more resilient, sustainable path that delivers the Paris Agreement; and puts the world on track to deliver global net-zero emissions in order to limit global temperature rise to 1.5°C.

To ensure that the Summit meets these expectations, the participation of those prepared to make bold new commitments under the three pillars of the Paris

Box 1: Priorities from Bhutan for climate action in the 1st NDC.

1. Forest sink management	2. Low carbon transport	3. Sustainable waste management
4. Greening industry	5. Clean renewable energy (mechanisms)	6. Climate smart livestock farming
7. Climate smart agriculture	8. Demand side energy management	9. Green buildings and smart cities

Nine priority areas for climate change mitigation identified to maintain Bhutan’s carbon neutral status.

1. Water security	2. Climate resilient agriculture	3. Ecosystem services (forest/biodiversity)	4. Resilience against climate hazards	5. Climate health risks
6. Climate proof transport infrastructure	7. Resilient livestock farming	8. Enhanced climate information services	9. Diversified energy generation	10. Resilient urban and rural settlements

Ten priority adaptation needs to address impact of climate change included in Bhutan’s 1st NDC.

Agreement - mitigation, adaptation and support – will be prioritised.

Preparing Bhutan’s enhanced NDC

Along with all other Parties Bhutan is also in the process of preparing its 2nd NDC with enhanced actions. With support from UNDP’s Climate Promise program several rounds of consultative meetings at national and sectoral levels have been carried out since its inception in January 2020. Although the preparation of Bhutan’s 2nd NDC has been delayed by the COVID-19 pandemic, the process to develop an enhanced NDC is ongoing in a highly consultative and rigorous manner.

The first NDC from Bhutan was comprehensive but used a programmatic approach as allowed for LDCs. Through the consultative process, it was agreed that the 2nd NDC from Bhutan would be enhanced with both targets and programmatic priorities based on preparatory work carried out in various sectors over the past years.

Low emission development strategies

Low Emission Development Strategies (LEDS) provide an opportunity for sectors and key actors to identify actions that meet national and local development needs while at the same time contributing to global climate change mitigation. For example, low emission interventions to improve mobility can help reduce traffic congestion and local pollution while also reducing GHG emissions.

In order to better inform the preparation of an enhanced NDC from Bhutan, a new LE DS is being developed for Food Security and the existing LE DS for Human Settlements (2017) and Transport Sector (2016) and Industries (2016) are being revised and updated. The new and updated LE DS will also integrate synergies and cross-cutting issues such as gender considerations, accessibility, and green recovery from COVID 19.

National adaptation plans

The process to formulate and implement National Adaptation Plans (NAPs) was defined under the UNFCCC to enable countries to plan and implement adaptation. The process also aims to mainstream climate resilience into national systems for continuous and iterative adaptation in the long run. Work to prepare Bhutan’s first NAP is ongoing under the NAP Readiness Project funded by the Green Climate Fund and led by NEC with support from UNDP. The project will build national capacity for long term adaptation planning, and conduct in-depth sectoral assessments for water, forest and biodiversity, health and agriculture.

Offsets and sustainable climate financing

Bhutan’s long-term commitment to remain carbon neutral and the needs for climate resilience requires sustainable financing different from traditional donor aid. This may be possible by leveraging Bhutan’s status as a carbon negative country and by monetising the significant amount of carbon offsets from export of clean renewable hydropower. The potential for such sustainable financing is being explored in the form of the **Bhutan Climate Fund** and builds on Bhutan’s experience with innovative conservation trust funds and trans-boundary hydropower CDM projects. Establishing such a fund will require concerted efforts to ensure that next generation climate markets under the Paris Agreement includes such innovative mechanisms to finance climate action and sustainable development.

Integrating green recovery from COVID-19 and the 21st Century Roadmap

At the moment, Bhutan, along with the rest of the world, is facing the immediate threats of the COVID-19 pandemic, but the threat of climate change will remain for decades and centuries after the pandemic passes.

Investment decisions for recovery from the pandemic can lock in investments for the long term. Many countries are already recognising the need for building resilience of environmental, health and economic systems based on the lessons from the COVID-19 pandemic. Requirements for social distancing and improvements for health often overlap with low emission interventions and adaptation measures to safeguard food security, human lives and health from the impacts of climate change.

Climate change interventions are investments for the long-term and also cross cutting in nature. In this regard, plans and strategies such as the Long-Term Strategy, NDCs and NAPs need to be closely aligned and integrated with other national long-term initiatives such as Bhutan’s 21st Century Economic Roadmap and plans for Bhutan’s economic recovery from COVID-19.

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