

CLIMATE CHANGE ASSESSMENT

I. BASIC PROJECT INFORMATION

Project Title:	BHU: Financial Market Development Program - Subprogram 3
Project Cost (\$ million):	30.0
Location:	Bhutan
Sector / Subsector(s):	Finance / Central banking systems; Housing finance; Money and capital markets
Themes:	Inclusive economic growth; Environmentally sustainable growth
Brief Description:	<p>The Financial Market Development Program Subprogram 3 (FMDP SP3) supports key policy reforms designed to address finance sector deficiencies in terms of institutions, markets and products, vulnerabilities caused by inadequate risk-based supervision, concentration of risk and insufficient inclusiveness in the finance sector. The program utilized a programmatic approach that aligned Asian Development Bank (ADB) support to key government reform programs over the medium to long term, to increase access to finance for the private sector through stronger markets and institutions and improve financial inclusion to enable economic diversification efforts in Bhutan.</p> <p>FMDP SP3 is aligned with the government’s Twelfth Five Year Plan, 2018-2023, and ADB’s Country Operations Business Plan (2021-2024). FMDP SP3 also contributes to ADB’s Strategy 2030 linking to operational priorities 1 (addressing remaining poverty and reducing inequalities), 3 (tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability), 5 (rural development and food security), and 6 (strengthening governance and institutional capacity).</p> <p>Proposed Policy Reforms and Impacts. FMDP SP3 will support the government’s ongoing financial market reforms through three key reform areas: (i) nonbank financial system developed, (ii) strengthening the integrity and stability of the financial system, and (iii) financial inclusion promoted. The program’s impact will be macroeconomic stability achieved, economic diversity and productive capacity enhanced, and poverty eradicated, and inequality reduced. The program’s expected outcome is stability, efficiency and inclusiveness of the finance sector enhanced. Reforms under the program may also help the government in addressing the economic impacts of COVID-19.</p> <p>Program’s Contribution to Climate. It is widely recognized that financial inclusion, which aims to provide appropriate financial services to the disadvantaged and economically marginalized, contributes to sustainable development and climate change adaptation and mitigation. Policy studies suggest that greater access to financial services allows people to manage risks, plan and reduce shocks through savings, borrowing, remittances and digital payments highlighting a clear connection between financial services and climate adaptation and resilience.¹ The Bhutan FMDP SP3 is aligned with ADB’s Strategy 2030 operational priority 3: tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability.</p> <p>Context of Vulnerability. Climate change is recognized as one of the greatest threats to financial stability and poverty alleviation and deepens financial</p>

¹ IGES. 2016. [Financial Inclusion: Key to Sustainable Development and Climate Change Adaptation](#).

	<p>exclusion.² Bhutan's Third National Communication to the UNFCCC (NC3) (2021)³ identifies the impacts of climate change on key sectors of Bhutan such as water, agriculture, energy (hydropower), and human health. These risks and increased exposures highlight the country's high degree of vulnerability. Adaptation priorities consider Bhutan's vulnerability to the impacts of climate change, particularly its fragile mountainous environment plus dependence on agriculture and hydropower for economic development. Bhutan is also exposed to hazards such as flash floods, including glacial lake outburst floods (GLOFs), forest fires, storms, and landslides.</p> <p>Statement of Intent. Bhutan's Country Climate Policy⁴ (CCP) provides strategic guidance on the Government's intent to ensure that Bhutan remains carbon neutral and protects its people's wellbeing by adapting to climate change in an efficient and effective manner. To achieve the overall vision and objectives of the CCP, four broad areas of actions are required intended to cover mitigation of emission, adaptation to the adverse impact of climate change, ensuring adequate support measures, and effective engagement among stakeholders. The Paris Agreement and Nationally Determined Contribution (NDC) process provide a platform to reaffirm Bhutan's commitments for a low-carbon climate-resilient society and to identify priorities for adaptation and mitigation. Under its first NDC,⁵ Bhutan has pledged unconditionally to remain carbon neutral whereby the emissions of greenhouse gases (GHG) of its mitigation sectors - Energy, Forestry, Transport, Waste and Agriculture - will not exceed carbon sequestration by forests. The major adaptation sectors include Disaster Risk Management, Energy, Environment, Health, Forestry, Transport, Urban, and Water. The Government has designed its gender-responsive financial mechanisms to address barriers to investment and stimulate investment in cleaner technologies to scale up NDC actions in support of economic diversification. The proposed FMDP through the financial inclusion policy reforms aims to address climate change by introducing and implementing the green taxonomy framework. The framework will help identify financial products and economic activities that can qualify as green investments. Such framework will help in promoting and increasing investments both in climate change mitigation and adaptation, and in building climate resilience.</p>
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II. SUMMARY OF CLIMATE CHANGE FINANCE

ADB will provide a loan amounting to \$30 million to support the program. As loan proceeds are not mapped per policy action (PA) under the three reform areas, climate adaptation and mitigation finance corresponding to the PAs is estimated through a proportionality approach. The \$30 million is assigned equally among each of the 13 PAs (\$2.30 million each) and each allocation is prorated corresponding to the climate adaptation and mitigation element of each PA. One out of the 13 PAs includes efforts to reduce or limit GHG emissions through the approval of the green taxonomy framework, which will identify financial products and economic activities that can qualify as green investments allowing financial institutions to introduce new products and align existing products with the green finance definition. This policy action will also contribute in improving climate resilience by identifying investments on adaptation.

² Alliance for Financial Inclusion (AFI). 2017. [Sharm El Sheikh Accord: Financial Inclusion, Climate Change & Green Finance](#).

³ Royal Government of Bhutan, National Environment Commission. 2020. [Third National Communication to the UNFCCC](#). Thimphu.

⁴ Royal Government of Bhutan, National Environment Commission. 2020. [Climate Change Policy of the Kingdom of Bhutan 2020](#). Thimphu.

⁵ Royal Government of Bhutan, National Environment Commission. 2015. [Intended Nationally Determined Contribution](#). Thimphu.

Project Financing		Climate Finance	
Source	Amount (\$ million)	Adaptation (\$ million)	Mitigation (\$ million)
Asian Development Bank			
Sovereign Programmatic Approach Policy-Based Lending (Regular Loan): Ordinary capital resources (concessional loan)	30.00	1.15	1.15

Source: Asian Development Bank.

III. SUMMARY OF CLIMATE RISK SCREENING

A. Sensitivity of Project Component(s) to Climate or Weather Conditions and the Sea Level

On proposed policy-based loan (PBL). LOW. The proposed FMDP SP3 is a policy-based loan. There is no direct funding to a climate related project at this stage. Green taxonomy is part of the overall Green Finance Roadmap of Bhutan. The policy action on taxonomy will assist potential green finance activities with expected favorable impact on climate (i.e., GHG emissions reduction).

However, the program beneficiaries including financially marginalized individuals, households, communities, and MSMEs may have differential sensitivities to climate change that need to be assessed during the subproject preparation or processing stage.

B. Climate Risk Screening - Bhutan Country Level⁶

Temperature variability. Temperature increases have been experienced in the country since the 1960s. Observations show temperature increases, with nighttime temperature increasing at a faster rate than daytime temperatures. On average, temperature has been rising faster in the last half-century (1950 to 1999). There is higher variability in observed temperatures in February and March. Areas at lower elevations and in the south tend to have higher temperatures and greater precipitation, while the northern areas are often cooler with less precipitation. Temperatures are higher during summer (June to September) and lower over winter months (December to February). The average observed temperature (1991-2020) for Bhutan is still cool at 12°C.

Future temperature projections. Using the RCP8.5 ensemble high emissions scenario, the average annual temperature is projected to increase by 1.90°C (1.31°C to 3.15°C) in 2040-2059.

Rainfall variability. Rainfall in Bhutan is influenced by the southwest monsoon circulation during summer months, particularly over the southern Dzongkhags. Rainfall is observed to have increased from June to September, with December to February experiencing increased dryness. A high degree of rainfall variability and distribution exists spatially within the country, with the northern and southern borders of the country getting the highest amounts. The annual average rainfall (1991-2020) for Bhutan is 1,920 millimeters (mm).

Future rainfall projections. Annual precipitation is expected to rise in 2040-2059 (RCP8.5, ensemble) by 72.08 mm with seasonal variation of dryness during winter (-416.07 mm) and increases wetness (905.58 mm) during summer.

Extreme Climatic Events. The number of projected summer days (temperatures above 25°C) will increase by 40-86 days and tropical nights (temperatures above 20°C) will increase by 42-73 days by the end of the century. Projections estimate that the maximum 5-day daily rainfall is expected to increase by 134.5 mm for a 25-year return event between 2040 to 2059.

⁶ [WB Climate Change Knowledge Portal](#) (accessed 20 September 2021); and Royal Government of Bhutan, National Environment Commission. 2020. [Third National Communication to the UNFCCC](#). Thimphu.

C. Climate Risk and Adaptation Assessment

The policy based loan Subprogram 3 is rated as “low” for climate change impacts since there are no specific project components identified at this stage. However, the target sector and beneficiaries of the PBL may be at risk to climate impacts.

The identified risks pertain to the targeted sectors and beneficiaries of Subprogram 3 (i.e., financial sector and clients) that may be exposed to extreme events, increase in temperature, and increased rainfall variability. Bhutan is also exposed to hazards such as flash floods, including glacial lake outburst floods (GLOFs), forest fires, storms, and landslides, which may be exacerbated by climate change. These risks may lead to loss and damages of resources (e.g., savings, livestock, property and equipment, crops) and investments (MSM enterprises, PFI lending operations).

Climate Risk Classification

Subprogram 3 – LOW.

Target sectors and beneficiaries – to be assessed during the preparation/processing of specific subprojects and interventions. If the investment subproject’s climate risk is medium or high, a more detailed climate risk and adaptation assessment (CRA) will be done.

D. Methodology

Preliminary climate risk screening is conducted in accordance with SARD’s climate change risk screening procedure, which is aligned with ADB’s Climate Risk Management Framework.

IV. CLIMATE ADAPTATION CONTRIBUTIONS OF POLICY ACTIONS

Adaptation Activity	Target Climate Risks	Estimated Adaptation Costs (in \$ million)	Adaptation Finance Justification
Reform Area 3: Financial Inclusion Promoted			
3.12 RMA Board approved the Green Taxonomy Framework (pillar in the Green Finance Roadmap of RMA) to identify financial products and economic activities that can qualify as green investments in order that financial institutions can introduce new products and services and align existing products with the qualifying green finance definition.		=1.15 (\$30m / 13 policy actions * 50%)	Under reform area 3, policy action 3.12, the program will support the development of Green Taxonomy Framework which will provide clarity and transparency among financial market participants to arrive at the common understanding of a climate-friendly or “green” activity that will enable financial institutions to introduce new products and services that promote climate mitigation and climate resilient measures. As the policy action is considered contributing to

Adaptation Activity	Target Climate Risks	Estimated Adaptation Costs (in \$ million)	Adaptation Finance Justification
			both adaptation and mitigation finance, using the proportional approach, adaptation finance was estimated as 50% of the allocation.
Total		1.15	

GLOF = glacial lake outburst flood, RMA = Royal Monetary Authority.

^a Agrawala, S. and M. Carraro, 2010. *Assessing the Role of Microfinance in Fostering Adaptation to Climate Change*. OECD Environment Working Paper No. 15, Organisation for Economic Co-operation and Development (OECD), OECD Publishing, Paris, France, 37 pp. Source: Asian Development Bank.

V. CLIMATE MITIGATION CONTRIBUTIONS OF POLICY ACTIONS

Mitigation Activity	Estimated GHG Emissions Reduction (tCO ₂ e/year) ^a	Estimated Mitigation Costs (\$ million)	Mitigation Finance Justification
Reform Area 3: Financial Inclusion Promoted			
3.12 RMA Board approved the Green Taxonomy Framework (pillar in the Green Finance Roadmap of RMA) to identify financial products and economic activities that can qualify as green investments in order that financial institutions can introduce new products and services and align existing products with the qualifying green finance definition.		=1.15 (\$30m / 13 policy actions * 50%)	Climate mitigation finance is claimed as the development of a green taxonomy will provide clarity and transparency among financial market participants to arrive at the common understanding of a climate-friendly or “green” activity that will enable financial institutions to introduce new products and services that qualifies for green finance. As the policy action is considered contributing to both adaptation and mitigation finance, using the proportional approach, mitigation finance is estimated as 50% of the allocation.
Total		1.15	

GHG = greenhouse gas, RMA = Royal Monetary Authority, tCO₂e = tons of carbon dioxide equivalent.

^a Energy savings/year x emission factor = GHG emissions reduction.

Source: Asian Development Bank.