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IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF-A4475

ON A

SMALL GRANT

IN THE AMOUNT OF US\$1.5 MILLION

TO THE

ROYAL GOVERNMENT OF BHUTAN

FOR

PREPARATION OF STRATEGIC PROGRAM FOR CLIMATE RESILIENCE (P159600)

October 25, 2021

Urban, Resilience And Land Global Practice
South Asia Region

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ABBREVIATIONS AND ACRONYMS

BSR	Bhutan Schedule of Rates
CIF	Climate Investment Fund
CPF	Country Partnership Framework
CSMI	Cottage, Small and Micro Industries
CSO	Civil Society Organizations
DES	Department of Engineering Services
DHS	Department of Human Settlement
DoFPS	Department of Forests and Park Services
DPC	Development Policy Credit
FEMD	Flood Engineering Management Division
FYP	Five-Year Plan
GLOF	Glacier Lake Outburst Flood
GNHC	Gross National Happiness Commission
IFC	International Finance Corporation
INDC	Intended Nationally Determined Contribution
IUFR	Interim Unaudited Financial Report
M&E	Monitoring and Evaluation
MDB	Multilateral Development Bank
MoAF	Ministry of Agriculture and Forests
MoWHS	Ministry of Works and Human Settlement
NAP	National Adaptation Plan
NCHM	National Center for Hydrology and Meteorology
NCWC	National Commission for Women and Children
NDC	Nationally Determined Contribution
NEC	National Environmental Commission
NKRA	National Key Results Area
PDO	Project Development Objective
PIU	Project Implementation Unit
PPCR	Pilot Program for Climate Resilience
RGoB	Royal Government of Bhutan
SPCR	Strategic Program for Climate Resilience
STEP	Systemic Tracking of Exchange in Procurement
ToRs	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
WMD	Watershed Management Division

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID P159600	Project Name Preparation of Strategic Program for Climate Resilience
Country Bhutan	Financing Instrument Investment Project Financing
Original EA Category Not Required (C)	Revised EA Category Not Required (C)

Organizations

Borrower Royal Government of Bhutan	Implementing Agency Gross National Happiness Commission
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Project Development Objective (PDO)

Original PDO

The proposed project development objective (PDO) of this project is to support Bhutan's capacity to develop a programmatic multi-sector and climate resilient investment plan.

PDO as stated in Legal Agreement (if different from Project Paper)

The objective of the Project is to support Bhutan's capacity to develop a programmatic multi-sector and climate resilient investment plan.



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
Donor Financing			
TF-A4475	1,500,000	1,500,000	1,368,269
Total	1,500,000	1,500,000	1,368,269
Total Project Cost	1,500,000	1,500,000	1,368,269

KEY DATES

Approval	Effectiveness	Original Closing	Actual Closing
20-Feb-2017	02-Mar-2017	30-Sep-2019	31-Mar-2021

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
03-Dec-2018	1.08	Change in Loan Closing Date(s) Change in Implementation Schedule

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Modest

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	07-Dec-2017	Satisfactory	Satisfactory	1.08
02	05-Nov-2018	Satisfactory	Satisfactory	1.08
03	12-Jun-2019	Satisfactory	Satisfactory	1.42
04	03-Aug-2020	Satisfactory	Satisfactory	1.42



05	29-Jan-2021	Satisfactory	Satisfactory	1.49
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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

Country and Sectoral Context at Appraisal

- Bhutan has unique geographical, historical, and cultural characteristics.** A small, landlocked country nestled in the Himalayas, Bhutan has steep mountains, deep valleys, and scattered settlements. At appraisal, nearly half the country's land area was protected to preserve biodiversity. With forest coverage exceeding 70 percent, Bhutan was the first and remains one of the very few carbon-negative countries in the world. The country's Constitution stipulates that forest must cover at least 60 percent of all land at any time. This constitutional requirement is indicative of Bhutan's commitment to preserving its unique natural characteristics.
- The country has been highly vulnerable to floods, landslides, cloudbursts, windstorms, cyclones, river erosion, earthquakes, glacial lake outburst flood (GLOF), wildfire, droughts, and other climate-induced natural hazards.** Between 1994 and 2016, some 87,000 people were affected and over 380 deaths occurred due to natural disasters in Bhutan. In 2009, Cyclone Aila brought unprecedented rainfall and floods, affecting farmland and infrastructure with damages of approximately US\$17 million. The majority of the country's infrastructure was located along drainage basins that were highly vulnerable to flooding, particularly riverine flooding caused by heavy monsoon rains and glacial melt. The country's urban areas were vulnerable to urban flooding and extreme heat in the south.
- Addressing Bhutan's vulnerability to climate change required the integration of resilience into investment planning and development.** While Bhutan is endowed with vast water supplies, it paradoxically suffered from increasing water scarcity and drought to localized ground and spring water as a result of erratic and scanty rainfall patterns as well as drying up of water sources. Climate-induced water shortages across the midlands and southern region adversely impacted both households and Cottage, Small and Micro Industries (CSMI). Farmers in Bhutan were not able to access hydro-meteorological data which was identified as a significant gap in the resilience of the agriculture sector. Extreme and repeated flooding in southern Bhutan generated hazardous debris that flowed downstream and was deposited in the southern plains, increasing the exposure and vulnerability of downstream human settlements and scarce arable lands.
- Bhutan's institutions were still limited in their effort to integrate climate analysis in planning.** The Gross National Happiness Commission (GNHC), as the country's central planning agency, led the formulation and monitoring of the country's five-year national development plans and other national planning processes with sectoral agencies and local governments. However, it did not possess the needed technical and institutional capacities to enhance the integration of disaster and climate resilience considerations in these plans and processes and the coordination required for mainstreaming climate considerations across sectors was also relatively weaker. Further, the National Environmental Commission (NEC), the agency that regulates and monitors environment and climate-related issues in Bhutan and prepares strategic documents such as the National Adaptation Plan of Action (NAPA), did not have the technical capacity to undertake climate analysis. The National Center for Hydrology and Meteorology (NCHM), which was responsible for climate monitoring and prediction, provision of weather and flood forecasts, and liaising with sector agencies for the development and delivery of weather and climate services¹, had insufficient capacity to manage a climate database, undertake

¹ <http://www.hydromet.gov.bt/?q=224>.



climate analysis, and provide sector-specific climate services. Other agencies responsible for integrating climate resilience into sector plans, policies, and actions, such as the Watershed Management Division (WMD) under Department of Forests and Park Services (DoFPS), the Flood Engineering Management Division (FEMD) under Department of Engineering Services (DES), the Department of Human Settlement (DHS), and municipal agencies, did not have adequate technical expertise for conducting sector-specific impact analyses or tools to integrate climate resilience in their activities.

Higher Level Objectives to which the Project Contributes

5. **In 2015, the GNHC submitted an Expression of Interest to the Pilot Program for Climate Resilience (PPCR) under the Climate Investment Fund (CIF) to address these technical and operational challenges and develop a long-term strategic program to address climate resilience.** After a rigorous selection process, Bhutan became one of ten countries globally to receive PPCR funding with the aim of developing a Strategic Program for Climate Resilience (SPCR). The value-added of the Bhutan SPCR process compared to ongoing cross-sectoral initiatives in Bhutan was three-fold: (a) it provided a framework for a long-term programmatic approach for mainstreaming resilience into development planning; (b) it put in place a coordination mechanism and a process of engagement with a strengthened information base on climate issues that built on existing institutional arrangements; and (c) it supported the development of a roadmap for resilience and identification of priorities for investment while building the capacity in selected areas of key technical agencies for mainstreaming climate change. See Box 1 for more information on the PPCR and CIF.

6. **The project supported the Royal Government of Bhutan's (RGoB) national development priorities** as articulated in its 11th Five-Year Plan (FYP, 2013-18), which had carbon-neutral/green and climate-resilient development as one of its National Key Result Areas (NKRAs). Further, the SPCR was to provide inputs to the upcoming 12th FYP and inform the implementation of Bhutan's Nationally Determined Contribution (NDC). The project was also aligned with Bhutan's National Adaptation Plan's (NAP) objectives and processes by identifying complementary investments that would effectively address Bhutan's medium and long-term adaptation aspirations.

7. **The project also supported the World Bank Group's Bhutan Country Partnership Strategy (CPS) for FY15–FY19²** and its Results Area 3: Supporting Green Development, Outcome 7: Improved management of the natural capital and strengthened resilience to climate change/disaster risks by developing investment plans and strengthening institutions to enhance resilience to climate change and natural disasters.

8. **The project contributed to the WBG's twin goals of ending extreme poverty and promoting shared prosperity.** The country's estimated average annual economic loss from natural disasters was US\$63 million in 2015.³ Estimates drawn from 89 countries show that if every natural disaster could be prevented for the following year, the number of people in extreme poverty—those living on less than US\$1.90 a day—would fall by 26 million.⁴ The project contributed to enhancing the RGoB's capacity for mainstreaming climate change in development priorities and reducing its impact on the poor.

² Report Number 88597. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/612871468205491416/bhutan-country-partnership-strategy-for-the-period-fy2015-19>.

³ UNISDR. 2015. Global Assessment Report on DRR.

⁴ <https://openknowledge.worldbank.org/handle/10986/25335>.



Box 1. The CIF and the PPCR

The Climate Investment Fund (CIF) is among the largest climate funds (more than US\$8 billion) in existence in the past ten years. Established in 2008, the CIF's resources are channeled through Multilateral Development Banks that work with national governments, private sector project sponsors, financial institutions, development partners, and other stakeholders. The CIF contains two distinct funds: The Clean Technology Fund and the Strategic Climate Fund (SCF). While the former promotes scaled-up financing for demonstration, deployment and transfer of low-carbon technologies, the SCF supports three targeted programs that pilot new approaches for addressing climate change challenges or sectoral responses with potential for scaled-up, transformational action.

The Pilot Program for Climate Resilience (PPCR), approved in November 2008, is a US\$1.2 billion and one of three programs that make up the SCF of the CIF. It supports piloting and demonstrating ways to integrate climate risk and resilience into core development planning, while complementing other ongoing activities, and it is governed by a CIF committee (the PPCR sub-committee). For more information on the CIF and the PPCR, see <https://www.climateinvestmentfunds.org/>.

Bank Rationale for Engagement

9. **Prior to the project, the World Bank had been strongly engaged in Bhutan's climate and disaster risk management sectors.** In 2016, the World Bank with financing from the Global Facility for Disaster Reduction and Recovery (GFDRR) and the South Asia Water Initiative, supported the Hydromet Services and Disaster Resilience Regional Project (P154477) to strengthen Bhutan's capacity for hydromet services and disaster preparedness. In the same year, the World Bank also financed (Trust Fund) a Technical Assistance (TA) on Disaster Risk Management and Climate Resilience in Bhutan (P148430), which strengthened the capacity of relevant institutions to respond to water-related hazards and climate risks, facilitated knowledge exchange on disaster preparedness and climate resilience, and enhanced cooperation with respect to management of hydro-meteorological risks between Bhutan and other South Asia Region countries. The World Bank also had a comparative advantage in supporting the formulation of SPCRs and the development of programmatic multi-sector and climate-resilient investment plans considering its experience from engagement in similar PPCR-funded projects in Madagascar (2017), Rwanda (2017), and Malawi (2017). Furthermore, as one of the implementing agencies for the PPCR and strong engagement on weather and climate with convening abilities, the World Bank was well-positioned to support RGoB in this effort.

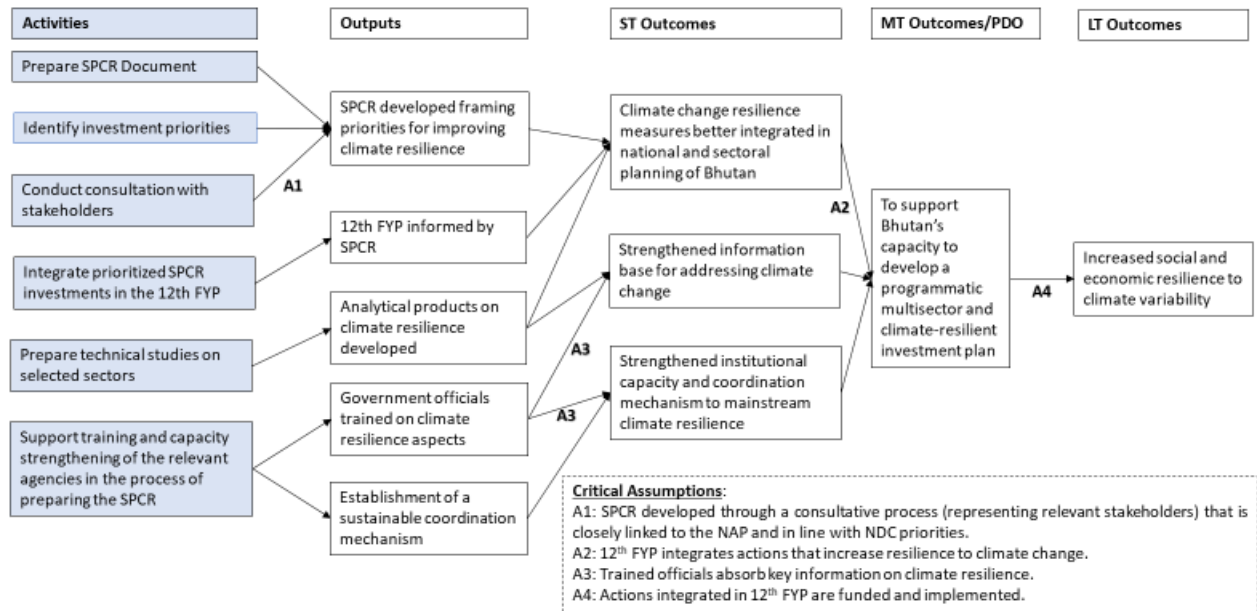
Project Theory of change

10. The project was intended to support the country as it developed its climate resilience strategic program document - that spelled out the resilience vision and plan for Bhutan, through a highly consultative process, accompanied by a set of complementary technical studies, training of government officials, and establishment of a related coordination mechanism. The studies were envisaged to strengthen the existing knowledge base on climate impact and adaptation through impact modeling, vulnerability assessments, and mapping in specific sectors and were identified as a part of the SPCR preparation. The training was intended to support the SPCR preparation, and enhance NCHM, WMD, FEMD, DHS, NEC, and GNHC's capacity to implement the SPCR actions. These actions were to strengthen RGoB's information base, institutional capacity, and coordination mechanism to mainstream climate resilience, informing Bhutan's 12th FYP, as well as its NDC. Combined, these short-term outcomes were to support Bhutan's capacity to develop a programmatic multisector and climate-resilient investment plan. In the longer term, the project was expected to increase social and economic resilience to



climate variability with a wide variety of benefits (both quantifiable and non-quantifiable). The critical assumptions underlying the theory of change were that the SPCR would be developed through a consultative process with representation of relevant stakeholders, training of government officials would be effective, and the prioritized investments would be integrated into the 12th FYP, funded and implemented. The theory of change is illustrated in Figure 1 and is implicit in the Project Paper as no theory of change was developed during project preparation.

Figure 1: Preparation of Strategic Program for Climate Resilience Theory of Change



Project Development Objectives (PDOs)

11. The objective of the Project, as stated in the Grant Agreement (Grant No, TF0A4475), was to support Bhutan’s capacity to develop a programmatic multi-sector and climate resilient investment plan.

Key Expected Outcomes and Outcome Indicators

12. The PDO-level Indicators were:
- a) *SPCR developed and conveyed to the CIF committee (Text)*. This indicator measured the formulation of Bhutan’s SPCR with a programmatic multi-sectoral climate resilient investment plan based on detailed gap analysis of existing institutional structures, policies, and coordination functions.
 - b) *12th FYP is informed by the SPCR and key priorities integrated into it (Text)*. This indicator measured how SPCR informed the 12th FYP with a target of at least two SPCR-identified investment priorities.



13. The four intermediate result indicators (IRIs) were:
 - a) *IRI 1-Sectoral and technical assessments and studies completed (Number)*. This indicator measured the number of knowledge products prepared based on the needs identified in the gap and institutional analysis with an end target of at least five technical studies completed.
 - b) *IRI 2-Consultative Engagement Process established for the development of the SPCR (Number)*. This indicator measured the number of consultative workshops conducted and documented to formulate Bhutan's SPCR. The target included at least two in Year 2, and an SPCR completion workshop by closing.
 - c) *IRI 3-Government institutions provided with capacity-building support to improve climate resilience (Number)*. This indicator measured the number of technical staff in different sectors trained on climate resilience practices, including climate risk models, based on the needs identified in the gap and institutional analysis. The target was at least ten staff trained in Year 2 and at least twenty-five staff trained by completion.
 - d) *IRI 4-Investment priorities for improving climate resilience in priority areas developed (Number)*. This indicator measured the development of SPCR investment priorities that are tailored to the priority areas identified in the SPCR with an end target of priority investments identified and defined in at least three key areas as detailed SPCR annexes.

Components

14. The project financed two components as follows:

Component A: Development of the SPCR (original cost: US\$1.15 million; actual cost: US\$0.870 million). This component supported the development of the SPCR document, including the identification and planning of priority investments, through a consultative engagement process. The component also supported a program of studies on enhancing weather and climate information and service delivery, flood management, watershed management, and water resources scarcity, climate-smart urban planning, as well as human resource capacity analysis and curricula development for climate change.

Component B: Capacity Building, Consultations, Institutional Coordination, and Project Management (original cost: US\$0.35 million; actual cost: US\$0.527 million). This component supported capacity building of the RGoB for climate resilience and project management activities. It supported training and capacity strengthening of relevant agencies to prepare the SPCR consultations and coordination among various relevant agencies, project management, M&E activities, travel costs, and incremental operating costs.

Significant Changes during Implementation

15. In December 2018, the project underwent Level II restructuring where the closing date was extended from September 30, 2019, to March 31, 2021, and the implementation schedule was adjusted accordingly. The rationale for the time extension was to accommodate the completion of a master's program in Environmental Management and Development (a two-year program) of four officials from GNHC, funded under Component B of the project. During the course of the project, the RGoB and the World Bank decided that the GNHC officials should enroll in this program in support of the GNHC's theoretical understanding and practical skills towards mainstreaming climate resilience in the development agenda. This restructuring did not affect the Project's Theory of Change but rather enhanced the level of PDO achievement.



II. OUTCOME

Assessment of Achievement of Each Objective/Outcome

16. The project's expected outcome 'to develop a programmatic multi-sector and climate resilient investment plan' was achieved. This was assessed based on the demonstrated achievement towards the two PDO-level indicators, four IRIs, and other attributable results not measured by the results framework (RF). The details of this assessment of each result indicator are elaborated below and in Annex 5.

PDO Indicator: SPCR developed and conveyed to the CIF committee

17. The project achieved this result's end target, namely SPCR report completed and submitted by the RGoB to the PPCR sub-committee.⁵ GNHC submitted the SPCR document to the PPCR sub-committee on November 9, 2017 as planned, and the SPCR was endorsed by the PPCR sub-committee on December 12, 2017. The project financed the consultancy services and consultation workshops to prepare the SPCR and the costs of its publication and relevant media outreach.

18. The SPCR included a set of high-priority investments that it considered instrumental in orienting Bhutan towards a stronger and sustainable pathway of climate resilient development, recognizing the different developmental and institutional challenges, the barrage of climate hazards, and the longer-term climate change impacts that Bhutan faces. The investment priorities (measured by **IRI 4**) span four priority areas/pillars, thus exceeding this IRI's end target of three priority areas. The SPCR included a detailed annex that described all six investments (Annex 1: Project Concepts for Phase II Investments) as planned. The project financed the consultancy services for developing these investment priorities and undertaking consultation. The proposed priority investments were:

- a) Investment 1 (US\$6.5 million): Building Climate Resilience through Enhancement of Hydro-Meteorological and Cryosphere Information – to be led by the NCHM to strengthen hydro-meteorological information and services to climate sensitive sectors and enhance early warning systems through improved climate impact modeling projections to anticipate climate impacts at the investment/community levels and better inform communities on climate hazard. This investment was mapped under SPCR Pillar 1 "Enhancing Information Base for Hydromet Services and Climate Resilience".
- b) Investment 2 (US\$10 million): Strengthening Climate Resilience in the Management of Targeted Watersheds and Water Sources - to be led by the WMD under DoFPS, Ministry of Agriculture and Forests (MoAF) to sustainably manage watershed and water resources in the context of climate induced water shortages; identify water scarcity hot-spots; formulate and introduce Climate-adaptive Integrated Watershed Management Plans and Climate-adaptive Wetland Management Guidelines; and carry out a Pan-National Adaptive Wetland Inventory. This investment was mapped under SPCR Pillar 2 "Preparedness, Food and Water Security".
- c) Investment 3 (US\$28 million): Strengthening Resilience to Flood Hazards – to be led by the FEMD under DES, Ministry of Works, and Human Settlements (MoWHS) to develop an Adaptive Integrated Flood Management (IFM) Plan, implement IFM infrastructure solutions, and build community resilience,

⁵ The PPCR sub-committee is a designated sub-committee under the SCF (one of the trust funds of the CIF as noted above) and is the decision-making body responsible for overseeing the operations and activities of the PPCR.



especially in the flood hazard-prone southern region. This investment was also mapped under SPCR Pillar 2 “Preparedness, Food and Water Security”.

- d) Investment 4 (US\$7 million): Supporting Climate-SMART Human Settlement Planning and Development for Samdrup Jongkhar Thromde – to be led by the DHS, MoWHS to introduce Climate-SMART and low-carbon human settlement planning and developmental practices at the Thromde level. This investment was mapped under Pillar 3 “Sustainable Growth and Resilient Infrastructure”.
- e) Investment 5 (cross-cutting investment): Strengthening Climate Resilience in Private Sector Intervention – to be led by the GNHC in collaboration with the Bhutan Chamber of Industry and Commerce to (i) train vulnerable CSMIs in climate-proofing to protect property and value-chains and (ii) develop market adaptation-related products and services to diversify local enterprise and strengthen the revenue base as an adaptive capacity benefit. This investment was also mapped under Pillar 3 “Sustainable Growth and Resilient Infrastructure”.
- f) Investment 6 (US\$1.5 million): Strengthening Capacity for the Development of a Sound Climate Education Program in Bhutan – to be led by the NEC in collaboration with the Royal University of Bhutan (RUB) to mainstream Environment, Climate Change & Poverty (ECP) curricula throughout the tertiary education system and at local government levels. This investment was mapped under the SPCR Pillar 4 “Strengthening Governance, Institutional Coordination and Human Resource Capacity”.

19. As a part of the SPCR preparation, five technical studies were prepared to flesh out these investment priorities and enhance their readiness for implementation, reaching the end target of IRI 1. The studies, shown in Table 2, focused on areas such as enhancing weather and climate information and service delivery, flood management, watershed management, and water resources scarcity, climate smart urban planning as well as capacity for climate education and research. The project financed the consultancy services that prepared these studies.

Table 2: Summary of Technical Studies Financed by the Project

Technical Studies	Lead agency	Results of the Studies
1. Hydro-Meteorological Extreme Analysis, Climate and Glacier Mapping, Risk Identification and Services	NCHM	<ul style="list-style-type: none"> • Analysis of historical climate and climate change projection for Bhutan (2019)⁶ • Re-assessment of potentially dangerous lakes of Bhutan (2019)⁷ • Updated Bhutan glacier inventory (2019)⁸
2. Analysis of climate impact on water scarcity	WMD under DoFPS, MoAF	<ul style="list-style-type: none"> • Report on mapping of water sources (2020). • Spring shed assessments of water source pilot sites (2020)

⁶<https://www.nchm.gov.bt/attachment/ckfinder/userfiles/files/Analysis%20of%20Historical%20Climate%20and%20Climate%20Change%20Projection.pdf>.

⁷ <https://www.nchm.gov.bt/attachment/ckfinder/userfiles/files/Re-assessment%20of%20Potentially%20Dangerous%20Glacial%20Lakes.pdf>.

⁸ <https://www.nchm.gov.bt/attachment/ckfinder/userfiles/files/BGI%202018.pdf>.



3. Assessment of flooding hazards, development of flood mitigation options for flood vulnerable districts (southern belt)	FEMD under DES, MoWHS	<ul style="list-style-type: none"> • Report on Assessment of Flooding Hazards and Development of Climate-Resilient Flood Mitigation Measures in Shetekheri and Aiepoly (Big and Small) Streams (2019)
4. Climate Smart Urban Planning and Development in Samdrup Jongkhar Thromde	DHS, MoWHS	<ul style="list-style-type: none"> • Climate Smart Human Settlement Planning and Development in Samdrup Jongkhar Thromde Volume I (2019)⁹ • Climate Smart Human Settlement Planning and Development in Samdrup Jongkhar Thromde Volume II (2019)¹⁰
5. Human resource capacity analysis and curricula development for climate, meteorology, and hydrology	NEC Other implementation partners are Sherubtse College, College of Science and Technology, and the College of Natural Resources, all under the Royal University of Bhutan.	<ul style="list-style-type: none"> • Climate Change Research Needs Assessment Report (2018)

20. **The SPCR was developed in an iterative manner through an extensive consultative engagement process (measured by IRI 2).** In total, more than 400 people were consulted during the preparation of the SPCR with 28 consultative workshops, including a final workshop, exceeding the end target of two consultative workshops conducted and documented in year 2 and a final workshop by closing. It involved a wide range of representatives from the central government line ministries, almost all in-country national and international development partners, and leading Civil Society Organizations (CSOs), along with several private sector leaders, including Bhutan Chamber of Commerce and Industry representative. The project financed the services that underpinned these consultations.

21. **Preparation of the SPCR enhanced the capacity of the RGoB in understanding and mainstreaming climate resilience.** For example, the preparation of NAP and third national communication to the United Nations

⁹ <https://www.mowhs.gov.bt/wp-content/uploads/2019/07/Climate-SMART-Human-Settlement-Planning-and-Development-in-Samdrup-Jongkhar-Thromde-Volume-I.pdf>.

¹⁰ <https://www.mowhs.gov.bt/wp-content/uploads/2019/07/Climate-SMART-Human-Settlement-Planning-and-Development-in-Samdrup-Jongkhar-thromde-Volume-II.pdf>.



Framework Convention on Climate Change (UNFCCC) used analysis and climate projections developed by the NCHM as a part of the SPCR process. The project supported the training of 485 government officials - 201 in trainings abroad and 284 through in-country trainings, exceeding the **IRI 3** end target of at least 25 staff trained in different sectors. Training was provided in six technical areas: (i) climate vulnerability mapping and risk identification and services; (ii) analysis of climate impact on water scarcity and development implementation plan for critical watersheds; (iii) assessment of flooding hazards, DEM, and flood mitigation options for vulnerable districts (southern belt); (iv) climate smart urban planning and development; (v) private sector for climate resilience; and (vi) human resource capacity analysis and curricula development for climate, meteorology, and hydrology (see more information in Table 3 below). The training activities of the GNHC and technical agencies were financed by the project.

Table 3: Summary of Training Activities Financed by the Project

Trained Entity	Training Activities
National Center for Hydrology and Meteorology (NCHM)	16 ex-country training programs and 1 in-country workshops on enhancement of hydromet and cryosphere research.
Watershed Management Division (WMD), Department of Forests and Park Services, Ministry of Agriculture and Forests	Ex-country training on “Reviving Springs in the mid-hills of Hindu Kush Himalaya (HKH) with a special focus on Bhutan”. In-country hands-on training on hydrogeological mapping for pilot site focal officers and staff.
Flood Engineering Management Division (FEMD), Department of Engineering Services, Ministry of Works and Human Settlement	Four ex-country trainings on flood and storm water management, one ex-country training on inventory and procurement management. Workshop in Thimphu on flood modelling and preparation of hazard maps using SWAT and HERCAs (2018). Workshop in Paro on the preparation of flood management plan for Kerongchu, Nganglam.
Department of Human Settlements, Ministry of Works and Human Settlement	Three ex-country trainings: <ul style="list-style-type: none"> • Two trainings on Climate Smart Land Use Planning. • Capacity development training and exposure visit program on LEDS for climate change and human settlement. Five Training of trainers (ToT) workshops on Climate SMART Land Use planning in MoWHS, College of Science and Technology, and Samdrup Jongkhar Thromde. GIS mapping and computer application training, and training on basic use of GIS in Thimphu.



<p>GNHC, DES, and Department of Cottage and Small Industry</p>	<p>Three ex-country trainings:</p> <ul style="list-style-type: none"> • Training on Direct Time Study for Measuring Labor Productivity • Training on Climate Change Resilience in CSMI • Training on Multi-Tasking and Time Management <p>In-country training on GIS project management training</p>
<p>NEC</p> <p>Other training partners are Sherubtse College, College of Science and Technology, and the College of Natural Resources, all under the Royal University of Bhutan.</p>	<p>Ex-country training on i) development of skills in stakeholder engagement in sustainable infrastructure projects and ii) environmental benefits mapping and analysis.</p> <p>Exposure visits to i) Chulalongkorn University in Thailand and ii) Hanoi University of Natural Resources and Environment to learn about human resource capacity analysis and curriculum development for climate change.</p> <p>Visit by the NEC to the College of Science and Technology to identify needs of college in terms of equipment and capacity building in climate change related fields.</p> <p>Needs assessment workshop in Phuentsholing to become familiar with the Environment and Climate Change program, including research activities in the field of Climate Change, Mitigation, and Adaptation, and create linkages and collaboration with other faculties and institutes.</p>

PDO Indicator: 12th FYP is informed by the SPCR and key priorities integrated into it

22. The project achieved this PDO indicator target by reflecting the SPCR investment priorities in the 12th FYP NKRAs as shown in Table 4 below. These priorities were not included as specific budget-supported activities in the 12th FYP but rather were integrated into NKRAs broadly. During the October 23 to 25, 2017, implementation support mission, GNHC officials expressed satisfaction with the way the SPCR and its preparation process had allowed for programmatic planning for resilience to be integrated into the 12th FYP, demonstrated in the strong reflection of climate resilience in the NKRAs. The project financed the consultancy services and consultations used to prepare the investment priorities as part of the SPCR, while their integration within the FYP was carried out by the GNHC.

Table 4: SPCR Investments’ Reflection in the 12th FYP NKRAs

SPCR Investment Priorities	NKRAs	Programs/Strategies to Achieve the NKRA
Investment 1: Building Climate	NKRA #6: Carbon neutral, climate,	Weather and climate services for building



Resilience through Enhancement of Hydro-Meteorological and Cryosphere Information	disaster-resilient development enhanced	climate resilience program that focus on development of reliable weather and seasonal climate forecasts.
Investment 2: Strengthening Climate-Resilience in the Management of Targeted Watersheds and Water Sources	NKRA #17: Sustainable Water	Climate smart and disaster resilient development program that explores alternative water sources to ensure continuous supply of drinking and irrigation water.
Investment 3: Strengthening Resilience to Flood Hazards	NKRA #15: Sustainability of Human Settlements Improved	Pursuing green growth in construction sector program to improve quality infrastructure and promote green and disaster-resilient construction.
Investment 4: Supporting Climate-SMART Human Settlement Planning and Development for Samdrup Jongkhar Thromde	NKRA #15: Sustainability of Human Settlements Improved	Livability and human settlement development program to enhance livability, safety, and sustainability of human settlements by improving urban amenities and infrastructure.
Investment 5: Strengthening Climate Resilience in Private Sector Intervention	NKRA #1: Macroeconomic Stability Ensured	Boosting private investments.
	NRKA #2: Economic Diversification	Promoting high value added CSMTIs.
Investment 6: Strengthening Capacity for the Development of a Sound Climate Education Program in Bhutan	NKRA #7: Quality education and skills	Enhancing research, innovation, and scholarship program to enhance research capacity through improvement in research infrastructure, facilities, and services, and strengthening partnerships with government agencies and international partners.

23. **Another project result not measured by the RF is the long-term training of four GNHC officials, which helped to increase the GNHC’s theoretical understanding of, and practical skills for climate change resilience, environmental management, and socio-economic development.** Four planning officials from GNHC completed a master’s program in Environmental Management and Development (a two-year program) in the Australia National University with the financing of the project. Of these, two candidates started the program in January 2018 and completed it in December 2019, while two started it in January 2019 and completed it in January 2021. This program was seen by the World Bank and the Government as essential for increasing the GNHC’s technical knowledge on climate change and sustainable development as well as the development of climate-informed national plans. Two of these officials, who completed their master’s program in December 2019, were able to



mainstream climate change adaptation and resilience in development plans, policies, and regulations, specified in the 12th FYP.¹¹ They are also expected to help in resource mobilization in the areas of climate and environment management with their expertise.

Overall Outcome Rating

24. **The overall outcome rating is Satisfactory.** The project demonstrated high efficacy in completing the SPCR and informing the 12th FYP with key investment priorities. Overall, the RGoB is now better equipped to integrate climate resilience into planning and financing processes and build consensus on an approach to climate-resilient development – a notable example being its ability to develop in-house climate projections for planning in key sectors and development strategies; an achievement that many larger countries are yet to reach. Furthermore, the PDO remains highly relevant due to Bhutan’s high vulnerability to climate change. The project is relevant to the World Bank CPF Objectives and the upcoming Climate Change Action Plan, as well as RGoB’s development priorities and strategies (12th FYP, NDC, NAP, LEDS for Human Settlement, and NES 2020). The project made optimal use of its resources by achieving and at times exceeding results while staying under-budget, although there had been some delays in implementation and some planned capacity-building activities could not be undertaken due to COVID-19. The detailed assessments of Relevance of PDOs and Efficiency are included in Annex 5.

Other Outcomes and Impacts

Gender

25. The project did not aim to close gender gaps and intended results/outcomes were gender neutral. Despite that, gender mainstreaming was a core component in the design, development, and execution of this project. The National Commission on Women and Children (NCWC)¹² was involved in the SPCR’s consultative meetings. Women-led cooperative groups and user groups played an essential role in the dialogue with CSMIs on climate risk management business practices and in a purposeful dialogue with their male counterparts on the importance of gender mainstreaming in preparation of SPCR. The project did not have numeric targets for female participation in training activities under different technical components. However, about 28% of the training participants were female.

Mobilizing Private Sector Financing

26. **The project supported capacity building of the private sector for climate resilience.** The private sector in Bhutan is heavily dominated by CSMIs, which the SPCR identified as at risk from climate hazards due to climate-induced water shortages across the midlands and southern region. The project, therefore, made CSMIs the focus of SPCR support and developed the capacity of officials from the Ministry of Labor & Human Resources and the GNHC to support the first-ever Business Incubation Center to help to promote green and climate smart CSMIs and

¹¹ The trained officers also played key roles in negotiating with the European Union in mobilizing funds towards supporting Bhutan in its drive towards climate change and sustainable development.

¹² The NCWC is an autonomous agency whose Chair is the Minister for Works and Human Settlement. It plays a key role as Program Management Unit for the Asian Development Bank’s project on Economic Empowerment of Women through gender-based planning and budgetary task force and tool comprised of CSOs and private sector members.



future-proof CSMI business to allow climate smart growth and innovation. Furthermore, the project financed a Labor and Material Coefficient study for three partially completed construction items and incorporation of the rates of two new construction items (gabion mesh and Autoclaved Aerated Concrete blocks) into the updated Bhutan Schedule of Rates (BSR, 2021 by DES¹³), led by the DES under MoWHS. The capacity-building included two ex-country trainings: (i) in direct time study for measuring labor productivity, which led to the inclusion of the aforementioned two new items in the BSR 2021 and (ii) in climate change resilience of CSMIs. While there was no stand-alone study on the private sector, the SPCR had a cross-cutting theme on climate resilience in the private sector: all six SPCR investments had CSMIs incorporated into their activities and outcomes. For example, Investment 4 on Climate-SMART planning had activities on private sector integration, and Investment 6 on climate curriculum development prioritized industry engagement in climate resilience.

Institutional Strengthening

27. The project strengthened the institutional capacity of Bhutan's key government agencies responsible for planning, coordination and implementation of climate resilience activities including the NCHM, WMD, FEMD and DHS, by developing the information base for climate change, improving understanding of causes of water sources drying and enhancing capacity to integrate climate smart planning in human settlements. The NCHM is now equipped to analyze and develop climate projections which have been used by other sectors and line ministries for the preparation of key national documents such as the NAP and the third national communication to the UNFCCC. The WMD is now better positioned to provide the necessary technical backstopping to carry out inventories and impact assessments of remaining spring sheds and recommend appropriate interventions for their revival. The project also supported the finalization of a National Wetland Inventory Framework Document (2020), whose main objective was to guide the conduct of a first ever National Wetland Inventory of Bhutan, scheduled to kick-start later in 2021. The project also supported the capacity of the DHS to develop the LEDS for human settlement, which is being finalized presently. The FEMD has been successful in replicating hazard mapping of rivers for other rivers in the country.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

Key Factors During Preparation

28. **Adequacy of objective and targets:** The project objective was adequate given that it was designed to finance the preparation of a strategic framework for climate resilience and an investment strategy that addressed the country's high vulnerability to climate change. The project focused on building the capacity of critical agencies in the RGoB and develop multi-sectoral investments instead of piece-meal interventions. The project targets were adequate given the sectoral vulnerabilities to climate change, capacity of the implementing agency at the time, and a need for combining climate change in national and sectoral planning.

29. **Assessment of risks:** The overall risk was correctly rated Moderate. At appraisal, the key project risks were correctly assessed as: (a) limited institutional capacity of the implementing agency (including experience working with the World Bank's fiduciary guidelines) and participating agencies and (b) lack of coordination among various agencies that would delay mainstreaming of the SPCR into various sector plans and programs. The

¹³ The BSR 2021 is a guiding document used widely (government, construction sector, traders, and private businesses) as a guide to select construction items, monitor standard and quality of works, and analyze construction item rates. Basic material rates are computed in conjunction with Labor and Material Coefficients to develop built up rates.



mitigation measures consisted of (i) training and capacity-building activities; (ii) implementation support for both technical and procurement aspects of the project; (iii) strengthening the role of the GNHC and ensuring robust cross-sector coordination mechanism; and (iv) emphasizing the need to coordinate and create synergies across relevant line ministries where investments were being proposed. The first risk materialized to a limited extent, in terms of an initial difficulty in procurement activities of consultancy services. This was, however, mitigated by the World Bank's support to the Project Implementation Unit (PIU). The second risk was mitigated by seven project management meetings of different agencies.

30. **Readiness for implementation:** Project preparation benefitted from high-level government commitment, including a PPCR National Steering Committee formed in June 2015, which provided multi-sectoral high-level strategic guidance and direction related to the development of the SPCR project with representatives of various government agencies. The project took 9.5 months to prepare (from initiation to approval), which is slightly longer than similar SPCR preparation timelines, for example in Madagascar (2017), Rwanda (2017), and Malawi (2017).¹⁴ The project did not include any effectiveness conditions in the grant agreement. The fulfillment of key individual consultants in the PIU could have been set as a timed legal covenant to mitigate related start-up delays.

31. **Lessons incorporated in the design:** The preparation of this SPCR project benefitted from extensive experience gained by the PPCR in the first round of SPCR preparation projects globally, where 18 country-level and two regional SPCRs were undertaken. Lessons learned from these engagements were incorporated into the design of this project, including an effective high-level cross-sectoral institutional coordination mechanism built into the implementation arrangements, an emphasis on sound diagnostics, and a country-based approach to climate resilience planning that allowed for the development of a flexible and responsive investment framework. Furthermore, lessons learned from other PPCR projects showed that the Recipient Executed Trust Fund project managed by the same task team of Disaster Risk Management (DRM) and Climate Change (CC) Projects in the country complements the overall outcome for both investments as well as helps in terms of having the necessary technical capacity to drive aligned results. Accordingly, the SPCR project in Bhutan was also managed by the World Bank team working on DRM and CC agenda which provided the opportunity to better coordinate between relevant activities under the SPCR and other ongoing projects of the World Bank relevant to the DRM and CC agenda. For example, the study on Hydro-meteorological extreme analysis, Climate and Glacier Mapping, Risk Identification and Services under the SPCR was complemented by the investments in enhancing weather and flood forecasting in NCHM through the Hydromet Services and Disaster Resilience Regional Project (P154477).

32. **Soundness of background analysis.** The project's design was based on a robust need analysis, prioritization of investments, and a long-term plan to strengthen climate change resilience as part of the RGoB's development agenda. The formulation of the project also benefitted from key government documents, such as the 11th Five Year Plan; Bhutan 2020: A Vision for Peace, Prosperity & Happiness; 12thFYP Guideline; and Strategy for GNH, which informed the design elements for the integration of investment priorities in sector and national planning.

Key Factors During Implementation

¹⁴ Timeline from initiation to approval: 5.2 months for Rwanda Pilot Program for Climate Resilience (P160268), 5.6 months for Malawi Strategic Program for Climate Resilience (P163245), and 6.4 months for Madagascar Pilot Program for Climate Resilience Phase I (P158816).



33. **Government commitment and leadership.** The GNHC as the implementing agency demonstrated strong commitment and leadership during the implementation of the project. GNHC formed a technical working group on June 6, 2017, which included focal persons from the lead technical agencies to develop the investment priorities, and this group also ensured communication with all stakeholders and the World Bank through four group meetings. In addition, government commitment was demonstrated in seven project management meetings comprising officials from GNHC and technical agencies to discuss implementation progress and fiduciary issues, and three high level project steering committee meetings. GNHC signed a Memorandum of Understanding with relevant technical agencies to carry out the technical studies in July 2017. This led to the timely completion of four studies by September 2019, the original project closing date. The GNHC also mobilized several sectoral ministries and government agencies to prepare the SPCR and five technical studies.

34. **Concurrent implementation of the SPCR Project and Hydromet Services and Disaster Resilience Regional Project.** The concurrent implementation of both projects helped to shape the development process of the SPCR through cross-fertilization of ideas and identification of valuable synergies that could be mutually beneficial.

35. **Procurement delays.** During the project's first three months (March to May 2017), the project experienced delays in the onboarding of an international consultant and a local consultant for the preparation of the SPCR because of the ambiguity within the procurement plan.¹⁵ However, starting in June 2017, the international consultant was onboard followed by a national consultant in July 2017. Once these consultants were onboard, GNHC successfully led a vigorous consultative process with stakeholders from RGoB, the Private Sector, and development partners for the preparation of SPCR and successfully submitted it to the PPCR sub-committee on November 9, 2017.

36. **Project restructuring.** The restructuring enhanced the institutional capacity and information base to mainstream climate resilience by allowing the GNHC officials to complete their master's in environmental management and development, ensuring that WMD completed the analysis of climate impacts on water scarcity and developed an implementation plan for critical watersheds (one out of five technical studies), that the DES undertook an awareness program on green/climate-resilient building materials (through GNHC), and that the FEMD carried out a workshop on the preparation of a flood management plan. The restructuring, however, did not consider the delays to the analytical study of the WMD caused by the monitoring of five spring sheds for a period of two years, which was not envisaged during the project's design. The delays to the awareness program and the workshop were due to COVID-19 related restrictions.

37. **COVID-19:** The COVID-19 pandemic, which became prominent in Bhutan in March 2020 and continued till the end of the project, restricted the GNHC and other technical agencies' regular working hours and capacity-building activities. Due to travel restrictions, the ex-country training on Sustainable Natural Resources and Climate Resilient Practices as well as the study on LMC for two construction materials (the study that required field visit) were canceled.

¹⁵ During the May-June 2017 mission, the World Bank clarified that the local consultant for the preparation of SPCR was supposed to be an individual consultant and not a firm consultant as per the procurement plan. Therefore, GNHC cancelled the Request for Proposals for firm consultancy services and sent out an Expression of Interest for a local individual consultant.



IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. Quality of Monitoring and Evaluation

Rating: Modest

38. **M&E Design.** The PDO was clearly defined, and the indicators encompassed all outcomes of the PDO. The RF was well defined. The project document could have elaborated on specific M&E reporting mechanism and the scope of the reporting. Also, while the project was not required to use gender tracking as it was approved in advance of the changed guidelines, the government was able to report on the number of female beneficiaries.

39. **M&E Implementation:** As per the Grant Agreement, the Client was to prepare semi-annual Project Reports and furnish them to the World Bank no later than one month after the end of the period covered by such a report. However, this did not happen during the project implementation as no report was prepared. Instead, the Bank team collected data through the Implementation Status & Results (ISR) Reports, on a periodic basis. For a small-grants, reports are required on an annual basis and the team often combined missions to check in on SPCR outcomes. These reports provided sufficient information for decision making, such as the timely extension of the closing date for the completion of relevant activities.

40. **M&E Utilization.** M&E data discussed during the missions informed the Client and the World Bank about implementation progress and decisions taken by the GNHC on how to best achieve the PDO. M&E data were reflected in the ISRs, informing World Bank management on project progress and issues needing attention.

41. The quality of the M&E is rated Modest considering the unclear M&E reporting mechanisms at project design. The reporting on the implementation which was successfully being done was not always formally shared and resulted in the absence of semi-annual reports expected from the client.

B. Environmental, Social and Fiduciary Compliance

42. **Safeguards.** The project was a Category C project. It did not trigger any World Bank social and environmental safeguards policies as it financed activities such as consultancy services, non-consulting services, workshops, travel, operating costs, as well as goods.

43. **Procurement.** The project followed and complied with the 'World Bank Procurement Regulations for IPF Borrowers' (July 2016). The World Bank's Systematic Tracking and Exchanges in Procurement (STEP) system was used in a timely manner to prepare, clear, and update the project's Procurement Plan and to conduct all procurement transactions in line with the provisions stipulated in the Project Paper. However, there were some delays in the procurement of international and national individual consultants. The Procurement Officer from the GHNC Secretariat provided procurement support to the project. The project did not involve any high-value or complex procurement. It was focused on providing Technical Assistance, which financed consultant services, workshops and seminars, travel and transportation, and operating costs. There were no Prior Review activities under the project - all procurement activities were post reviewed.

44. **Financial management (FM).** The project overall complied with the FM requirements of the World Bank. GNHC was responsible for the overall consolidation of the project's financial arrangements. The interim unaudited financial reports (IUFR) were submitted to the World Bank in a timely manner, and the World Bank



found them acceptable based on its desk reviews in most cases.¹⁶ Annual project financial statements were audited by the Royal Audit Authority (RAA), and the auditors did not have any unqualified audit opinions though there were recommendatory observations in the audit of FY19-20 on an outstanding advance of Nu.5.2 million and payment of Nu.1.3 million without approval. As reflected by RAA, this compliance issue will be reviewed in the next audit for FY20/21, which is expected in December 2021. The Bank team has cleared the fin

C. Bank Performance

Quality at Entry

45. At appraisal, the World Bank team presented a good mix of technical skills to properly support the PIU during project preparation, including specialists in disaster risk management, climate change, legal, financial management, procurement, environment, and social development. During the preparation of the project, the World Bank team incorporated several critical points in the project design: effective high-level institutional coordination across multiple sectors; sound diagnostics to engage key institutions; a country-owned approach; and close alignment of investment framework with national development priorities. The World Bank team worked closely with RGoB to ensure that the project's design had disciplined adherence to the country's long-term climate commitment. The World Bank identified M&E as one of the skills needed by the PIU at the early stage of project implementation (12 months).¹⁷ At entry shortcomings were the unclear mechanisms for periodical M&E reporting in the Project Paper and some ambiguity in the procurement plan as noted.

Quality of Supervision

46. The World Bank team collaborated with various relevant stakeholders, including the IFC, to support the GNHC and other government ministries and agencies throughout the SPCR preparation process. During implementation support missions, the World Bank team usually comprised disaster risk management specialists with fiduciary specialists joining several missions and the IFC (Senior Operations Officer) joining one mission in October 2017 to provide support on finalizing the SPCR document and discussing the integration of SPCR in the 12th FYP. The World Bank team undertook four implementation support missions and one technical mission during the four-year period and had discussions with the client on a rolling basis in between missions. The ISRs and Aide Memoires were candid about the project's performance across components. The team remained responsive to changes in circumstances during implementation and worked with RGoB counterparts to make adequate design, contract management, and other relevant changes based on consultations with the implementing agency and technical agencies. The team also was heavily engaged with the agencies implementing the technical studies and given the relative weakness in capacity of the implementing agency in evaluating the quality and technical details of implementation of the studies, the Bank team took on that role and worked directly with the technical agencies to obtain progress data and conducted evaluative assessments to examine the effectiveness of project activities. Though it was not a direct responsibility of the World Bank, efforts were undertaken by the World Bank team to mobilize financing for SPCR investment plans.

47. **Justification of Overall Rating of Bank Performance.** The overall Bank Performance rating is **Satisfactory** to reflect the overall relevance of project design (quality at entry) with close and effective engagement with the

¹⁶ The final IUFR for the January to March 2021 Quarter is due within the end disbursement date of July 31, 2021.

¹⁷ Table 4.1: Overview of Skills Needed by PIUs in Early Stages of Project Implementation (12 Months) of Project Paper of Preparation of Strategic Program for Climate Resilience (P159600).



Client and other stakeholders during project preparation as well as the efforts made during implementation to make sure the project reaches its objective (quality of supervision). The rating also considers the weakness at entry and supervision. The unclear M&E reporting mechanisms in project design did not affect the ability of the project to achieve the PDO.

D. Risk to Development Outcome

48. **Funding gap for implementation of the SPCR:** The identified SPCR investments amount to US\$154.941 million, of which Bhutan requested US\$55.65 million from the PPCR in 2017; and the remaining US\$99.291 million were expected to be financed by the RGoB and other development partners. However, the lack of financing from the CIF for round two countries (in which Bhutan is included¹⁸) for implementing the priorities identified in the SPCR, posed a challenge for the RGoB to proceed with the full implementation of the SPCR Investment Plan although some of the investments were integrated into the 12th FYP. Given this shortage, the World Bank team has been working closely with the RGoB on exploring other trust funded resources to put into action some of these priorities, particularly those related to capacity building and technical assistance. The government has expressed preference to focus on actions that could have a significant impact on critical areas such as flood mitigation, early warning, hydromet, and climate services. Accordingly, the World Bank is preparing the Strengthening Risk Information for Disaster Resilience in Bhutan project (P175081) with US\$ 2.3 million from CIF and US\$ 1.3 million from GFDRR (total US\$ 3.6 million), which is expected to get approved in the first quarter of FY22. The proposed project builds on two priority areas/pillars¹⁹ under the SPCR. This project will be a follow-up of investment 1: Building Climate Resilience through Enhancement of Hydro-Meteorological and Cryosphere Information, and Investment 3: Strengthening Resilience to Flood Hazards, though not entirely as envisaged in the SPCR. This project will partially address these investments, enhancing the RGoB's capacity to develop multi-hazard risk information for development planning and decision-making in targeted sectors. At the same time, the government is exploring financing from the Green Climate Fund to finance climate resilience in agriculture sector and strengthening multi-hazard early warning system in Bhutan.

49. **COVID-19:** Even though Bhutan has managed to contain the number of domestic COVID-19 cases, the trade and tourism dependence of the small landlocked economy have made it susceptible to the pandemic-induced shock. The SPCR and investment plans did not consider such a shock specifically in terms of its economic impact, given the timeline of the preparation of the plans. However, had the plans been developed post-pandemic, they might consider the impact of the pandemic on the supply chain of the construction sector (e.g., price of construction materials) as well as associated service sectors (e.g., travel restriction of the international consultant) and perhaps this could affect the total cost of these investment plans. The post-pandemic economic situation may also have a cascading effect on the implementation of the SPCR investment plans as the RGoB may decide to prioritize and focus on instantaneous economic actions despite their deep commitment to the long-term goal and potential of climate resilience investments.

V. LESSONS LEARNED AND RECOMMENDATIONS

50. The key lessons learned from the implementation of the project are as follows:

¹⁸ The funding uncertainty from PPCR-CIF was made known to the GNHC by the World Bank in October 2017, as noted in the implementation support mission's aide memoire.

¹⁹ Enhancing Information Base for Hydromet Services and Climate Resilience, as well as Preparedness, Food and Water Security



51. **The sustained engagement and commitment of key government institutions, along with an inclusive and participatory process, are key elements of successful SPCR development.** The SPCR development process was country-driven, spearheaded by the GNHC with participation of Multilateral Development Banks, central and local government officials, development partners, CSOs and private sector; and, technically vetted by line ministry technical agencies, gradually evolving into a genuine country-owned initiative. Also, relevant technical agencies such as the NCHM, WMD, FEMD, DHS, DES, and NEC were important partners that helped to understand the sector specific resilience needs and the technical and financing gaps to inform the SPCR priorities. Overall, the SPCR preparation process was highly consultative and engaged a wide range of stakeholders, which increased ownership of the SPCR document and created a momentum to move forward with capacity building training activities, and initiating preparation of technical studies, enhancing the information base for the investment plans.

52. **The preparation of the SPCR should run in parallel to the securing of resources to implement its identified investments in a timely manner to ensure impact.** RGoB had been aware that no CIF financing was available for implementing Bhutan's SPCR before it was endorsed. This weakened the momentum that Bhutan's SPCR could have had²⁰. However, in February 2021, the World Bank initiated the preparation of the Strengthening Risk Information for Disaster Resilience in Bhutan project (P175081), mobilizing CIF and GFDRR financing to partially implement investments 1 and 3 of SPCR. It took over three years after the SPCR was endorsed to follow up on the identified investments. Furthermore, there is no commitment to implement the remaining investments yet. Such a situation could possibly be avoided if the dialogue between the World Bank and the Client ensured the availability of financing early in the project cycle. In this case, due the uncertainty of the international financing for climate (CIF funds not being replenished) and as RGoB has traditionally accessed IDA financing as Policy Credits and targeted infrastructure development, there were limited options for the larger scale financing that was needed. However, should RGoB explore a potential climate focused targeted investment, with IDA credit, RGOB stands to leverage additional financing both credit and grant from the World Bank and other development partners.

53. **Multi-sectoral projects in Bhutan require adequate planning for multi-sectoral coordination and implementation arrangements.** The SPCR had the GNHC as the implementing agency and five technical agencies (NCHM, FEMD, WMD, DHS, NEC) under different ministries and autonomous agencies responsible for implementing various activities. The project demonstrated that building the strong capacity of GNHC to support line ministries can help mitigate risks associated with complex implementation arrangements. The project had a clear delineation of roles within the coordination unit and among the different actors involved through a Memorandum of Understanding between GNHC and technical agencies.

54. **The role of the private sector and needs for private sector investments should be well understood by the government as key to building climate resilience.** The project acknowledged the specific climate risk of CSMIs and developed an inter-woven investment plan across SPCR Program. The scope of the Bhutan SPCR matched well with private sector needs and pace of doing business with supporting the first-ever Business Incubation Center to help to promote green and climate smart CSMIs and focus on future-proofing CSI business to allow climate smart growth and innovation. Informed by the SPCR, the 12th FYP identifies promotion of high

²⁰ During October 2017 mission, GNHC raised concerns on the timely implementation of the investment plans articulated in the SPCR and underlined the importance of having financing for the SPCR in time coinciding with the beginning of the 12th FYP implementation.



value added CSMIs as one of the strategies for economic diversification, which will contribute to the resilience of the country.

55. **Sound diagnostics and inter-institutional coordination are critical to informing the SPCR investment priorities, for effectively building institutional capacities and for improving the evidence base for informed decision making.** The project supported the preparation of key technical studies informed by a scoping exercise. The convening of these studies and dialogues and their results allowed technical agencies to learn from each other. For example, analytical studies on flood vulnerability assessments and human settlement planning brought together the NCHM, MoWHS, WMD/DOFPS, Disaster Management and local government, enhancing the coordination between these key stakeholders toward a common goal of flood mitigation and climate resilient settlement planning. It also allowed these agencies to appreciate the clear differences between their mandates, recognize the technical competencies of each agency, and the need for data sharing to inform decisions. NCHM's climate projection is being used in the preparation of WMD's assessment report for the five-pilot spring shed sites. The completion of the flood risk and vulnerability assessment studies of the Shetekheri and Aiepoly streams has equipped FEMD to initiate similar studies on other rivers and tributaries in the country (e.g., Paro).



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
SPCR developed and conveyed to the CIF committee	Text	- 20-Feb-2017	SPCR report completed and submitted by the RGoB to the PPCR subcommittee. 30-Jun-2018		SPCR document submitted and endorsed by the PPCR subcommittee. 09-Nov-2017

Comments (achievements against targets):

Target achieved. GNHC submitted the SPCR to the PPCR subcommittee on November 9, 2017, and the SPCR was endorsed by the PPCR subcommittee on December 12, 2017. The project financed the consultancy services to prepare the SPCR and the costs of its publication and relevant media outreach.

Data Source: First-hand review of the SPCR report.



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
12th FYP is informed by the SPCR and key priorities integrated into it	Text	- 20-Feb-2017	The 12th FYP includes at least two investment priorities identified in the SPCR. 30-Jun-2019		The 12th FYP includes six investment priorities identified in the SPCR. 01-Nov-2018

Comments (achievements against targets):

Target exceeded. The Project achieved this PDO indicator target by reflecting the SPCR investment priorities in the 12th FYP (November 1, 2018, to October 31, 2023) NKRAs. These priorities were not included as specific budget-supported activities in the 12th FYP but rather were integrated into NKRAs broadly. The project financed the consultancy services for developing these investment priorities and undertaking consultation.

Data Source: First-hand review of the SPCR report and 12th FYP.

A.2 Intermediate Results Indicators

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Sectoral and Technical Assessments and studies completed	Text	0 20-Feb-2017	At least five technical studies completed. 30-Jun-2019		5 31-Mar-2021

Comments (achievements against targets):

Target achieved. Five technical studies (as follows) were prepared to flesh out the investment priorities of SPCR and enhance its readiness for



implementation.

1. Climate vulnerability mapping and risk identification and services
2. Analysis of climate impact on water scarcity and development implementation plan for critical watersheds
3. Assessment of flooding hazards, Digital Elevation Model (DEM), flood mitigation options for flood vulnerable districts (southern belt)
4. Climate Smart Urban Planning and Development
5. Human resource capacity analysis and curricula development for climate, meteorology, and hydrology

The project financed the consultancy services that prepared these studies.

Data Source: First-hand review of AM, ML, ISRs, and Project Completion Report.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Consultative Engagement Process established for development of SPCR	Text	1	Final SPCR completion workshop.		28
		20-Feb-2017	30-Jun-2019		25-Oct-2017

Comments (achievements against targets):

Target exceeded. The end target was two consultative workshops conducted and documented in year 2 with a final workshop by closing. In total, there were 28 consultative workshops including the final workshop (Second Joint Mission October 23 to 25, 2017) during the preparation of SPCR (paragraph 102 on page 19 of SPCR). The project financed the consultancy services that underpinned these consultations

Data Source: First-hand review of SPCR report.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
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Government institutions provided with capacity building support to improve climate resilience	Text	0	At least 25 staff trained in different sectors.		485
		20-Feb-2017	30-Jun-2019		31-Mar-2021

Comments (achievements against targets):

Target exceeded. The target was at least 25 staff trained in different sectors. The Project supported the training of 485 government officials (201 in training abroad and 284 through in-country training) in six technical areas:

1. Climate vulnerability mapping and risk identification and services
2. Analysis of climate impact on water scarcity and development implementation plan for critical watersheds
3. Assessment of flooding hazards, DEM, flood mitigation options for flood vulnerable districts (southern belt)
4. Climate Smart Urban Planning and Development
5. Private sector for Climate Resilience
6. Human resource capacity analysis and curricula development for climate, meteorology, and hydrology.

The training activities of the GNHC and technical agencies were financed by the project.

Data Source: First-hand review of AM, ML, ISR, and Project Completion Report.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Investment priorities for improving climate resilience in priority areas developed	Text	0	Priority investments identified and defined for at least three key areas.		4
		20-Feb-2017	30-Jun-2019		09-Nov-2017



Comments (achievements against targets):

Target exceeded. The investment priorities span following four priority areas/pillars, thus exceeding this IRI's end target of three priority areas. 1. Enhancing Information Base for Hydromet Services and Climate Resilience. 2. Preparedness, Food and Water Security. 3. Sustainable Growth and Resilient Infrastructure. 4. Strengthening Governance, Institutional Coordination and Human Resource Capacity. The project financed the consultancy services for developing these priority areas/pillars and undertaking consultation. Data Source: First-hand review of SPCR report.



B. ORGANIZATION OF THE ASSESSMENT OF THE PDO

Objective/Outcome 1	
Outcome Indicators:	<ol style="list-style-type: none"> 1. SPCR developed and conveyed to the CIF committee 2. 12th FYP is informed by the SPCR and key priorities integrated into it
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. Sectoral and technical assessments and studies completed 2. Consultative Engagement Process established for the development of the SPCR 3. Government institutions provided with capacity-building support to improve climate resilience 4. Investment priorities for improving climate resilience in priority areas developed
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<p>Component A:</p> <ul style="list-style-type: none"> • Development of the SPCR with six investment priorities, which span across four priority areas/pillars. • Consultation with more than 401 people during the SPCR preparation with a total of 28 consultative agency meetings. • Preparation of five technical studies: <ol style="list-style-type: none"> 1. Climate vulnerability mapping and risk identification and services <ul style="list-style-type: none"> • Analysis of historical climate and climate change projection for Bhutan (2019) • Re-assessment of potentially dangerous lakes of Bhutan (2019). • Updated Bhutan glacier inventory (2019)



	<p>2. Analysis of climate impact on water scarcity and development implementation plan for critical watersheds</p> <p>3. Assessment of flooding hazards, Digital Elevation Model (DEM), flood mitigation options for flood vulnerable districts (southern belt)</p> <p>4. Climate Smart Urban Planning and Development</p> <ul style="list-style-type: none">• Report on mapping of water sources (2020)• Spring shed assessments of water source pilot sites (2020)• Report on Assessment of Flooding Hazards and Development of Climate-Resilient Flood Mitigation Measures in Shetekheri and Aiepoly (Big and Small) Streams (2019)• Climate Smart Human Settlement Planning and Development in Samdrup Jongkhar Thromde Volume I (2019)• Climate Smart Human Settlement Planning and Development in Samdrup Jongkhar Thromde Volume II (2019)
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5. Human resource capacity analysis and curricula development for climate, meteorology, and hydrology

- Climate Change Research Needs Assessment Report (2018)

Component B:

- Training of 485 government officials with 28% females - 201 from abroad trainings and 284 from in-country trainings in six technical areas:
 1. Climate vulnerability mapping and risk identification and services
 2. Analysis of climate impact on water scarcity and development implementation plan for critical watersheds
 3. Assessment of flooding hazards, DEM, flood mitigation options for flood vulnerable districts (southern belt)
 4. Climate Smart Urban Planning and Development
 5. Private sector for Climate Resilience
 6. Human resource capacity analysis and curricula development for climate, meteorology, and hydrology.
- Completing master's program in environmental management and development for four government planning officials from GNHC.



- Hiring of local consultant for the preparation o full-fledged SPCR completion report (February - March 2021).



ANNEX 2. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval (%)
Component A: Development of the SPCR	1.15	0.870	75.6%
Component B: Capacity Building, Consultations, Institutional Coordination and Project Management	0.35	0.527	150.6%
Total	1.50	1.397	93.13%



ANNEX 3. RECIPIENT, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

The ICR was reviewed by RGOB which agreed with the Bank’s assessment. Comments were received from GNHC, DHS, and FEMD and have been addressed in the report.

Verbatim Comments reported:

Comments and Recommendations
Outcome
Efficacy
Only one workshop in Paro for the Preparation of the Flood Mangement Plan for Kerongchhu, Nganlam, Pemagatshel.
Could you please make the four ex-country trainings reflected under the DHS as three? We had two training sessions in Malaysia for two different groups and one in Bangkok. The GIS training was conducted at the CST in Bhutan.
In-country training on GIS project management training for GNHC, DES, and Department of Cottage and Small Industry.
Long-term training of four GNHC officials: <ul style="list-style-type: none"> • Two started it in January 2019 and completed it in January 2021 (not December 2020). • They are also expected to help in resource mobilization in the areas of climate and environment management with their expertise.
Financial Management
Outstanding advance of Nu 1.3M has been resolved since 2020 through approval of World Bank. The remaining outstanding advances were either booked as expenditure or surrendered to the world bank as per the agreement. The Annual Audit report for the FY 20-21 has also been shared to the world bank.
Risk to Development Outcome
While RGoB may focus on prioritizing economy recovery and health in the next plan, the climate change and related interventions will still be one of the government's priority due to various climate related emerging issues in the country.
Annex 1. Results Framework and Key Outputs
Organization of The Assessment Of The PDO: Hiring of local consultant for the preparation of full-fledged SPCR completion report (February - March 2021)

Note: The Client’s completion report was submitted to the World Bank via an e-mail dated May 28, 2021.



ANNEX 4. SUPPORTING DOCUMENTS

S.I.	Documents Name	Document Number/ Date of Finalization
1.	Aide Memoire 2017: Implementation Support Mission	May 22 to June 7, 2017
2.	Aide Memoire 2017: Implementation Support Mission	October 23 to 25, 2017
3.	Aide Memoire 2019: Implementation Support Mission	February 25 to 28, 2019
4.	Aide Memoire 2020: Implementation Support Mission	October 19 to 23, 2020
5.	Country Partnership Strategy for FY15–FY19: World Bank Group	Report No. 88597
6.	Country Partnership Framework for Bhutan (FY21–24): World Bank Group	Report No. 154927-BT
7.	Endorsed SPCR Document	December 12, 2017
8.	Grant Agreement	Grant Number TF0A4475/ March 2, 2017
9.	Implementation Status and Results Report 1	ISR30569 (Archived on December 7, 2017)
10.	Implementation Status and Results Report 2	ISR32178 (Archived on November 5, 2018)
11.	Implementation Status and Results Report 3	ISR36735 (Archived on June 12, 2019)
12.	Implementation Status and Results Report 4	ISR42250 (Archived on August 3, 2020)
13.	Implementation Status and Results Report 5	ISR44915 (Archived on January 29, 2021)
14.	Integrated Safeguards Data Sheet	ISDSA20562
15.	Draft Low Emission Development Strategy (LEDS) for Human Settlement	2021
16.	Management Letter to Department of Macroeconomic Affairs May 22 to June 2, 2017 Mission	July 14, 2021
17.	Management Letter to Department of Macroeconomic Affairs October 23 to 25, 2017 Mission	November 20, 2017
18.	Management Letter to Department of Macroeconomic Affairs October 4, 2018 Mission	October 23, 2018
19.	Management Letter to Department of Macroeconomic Affairs February 25 to 28, 2019 Mission	April 5, 2019
20.	Management Letter to Department of Macroeconomic Affairs October 19 to 23, 2020 Mission	December 3, 2020
21.	National Environmental Strategy 2020	2020
22.	Nationally Determined Contribution	September 30, 2015
23.	Project Paper	Report No. PP2215/ February 10, 2017
24.	Project Information Document	PIDC60445
25.	Project Completion Report of Preparation of Strategic Program for Climate Resilience	March 2021
26.	Restructuring Paper	December 3, 2018, Report No. RES34871
27.	Technical Mission Aide Memoire 2018	October 4, 2018
28.	Update P159600: Strategic Program for Climate Resilience as of May 19, 2020 by the World Bank	May 19, 2020
29.	12 th Five Year Plan (Volume I: Main Document)	February 2019



ANNEX 5. RELEVANCE OF PDOs AND EFFICIENCY

Relevance of PDOs

1. The PDO remains consistent with the Bank’s CPF for Bhutan (FY21–24)²¹ that underscores managing climate change and disaster risk. It contributes to CPF Focus area 2: Resilience, and its Objective 3: Improve Environmental Resilience by supporting Bhutan’s commitment to remain carbon neutral and seeking to maximize climate adaptation co-benefits in the country program. The project also contributes to risk-informed decision making, which is one of the priority areas identified under the upcoming Bhutan Climate Change Action Plan (2021-25). The Bhutan DPF with Cat DDO (P173008, launched in 2020) is informed by the SPCR and its analytical studies to strengthen the RGoB’s institutional and technical capacity to manage disaster and climate-related risks. The project has also directly informed one of the Prior Actions under the proposed Bhutan COVID-19 Crisis Response Development Policy Credit (DPC, P175758), namely the approval of a low-emission development strategy (LEDS) for human settlement, as well as a DPC on Strengthening Fiscal Management and Private Sector Employment Opportunities (P171780, launched in 2020), which supports the RGoB’s efforts on enhancing higher adaptive capabilities for climate change.
2. The PDO remains highly relevant to the RGoB’s development priorities and strategies. The 12th FYP’s approach and goals for climate change across different NKRA can be considerably attributed to the foundation laid by the SPCR, including its shift from “conventional response” to a “comprehensive risk reduction culture” to reduce the impact of climate change on development gains and make Bhutan more climate resilient. The National Environmental Strategy (NES, 2020) was also informed by the SPCR, integrating climate change as a cross-cutting issue for more holistic integration into relevant policies and programs. The project further supported the objectives of Bhutan’s Climate Change Policy (2020) to (i) provide strategic guidance to ensure that Bhutan remains carbon neutral and protects the wellbeing of its people by adapting to climate change in an efficient and effective manner, (ii) ensure meaningful participation of all relevant stakeholders in climate change action in a coordinated and coherent manner with clear roles and responsibilities, and (iii) ensure that the challenges and opportunities of climate change are addressed at all appropriate levels by contributing to the integration of climate change in the national and sectoral planning of Bhutan and strengthening RGoB’s capacity and coordination mechanisms to mainstream climate resilience.
3. The project contributed to the achievement of Bhutan’s 1st NDC by identifying investments which directly support several of the NDC priorities as shown in Table 1.

Table 1: Synergies between SPCR Investments and NDC Priorities

²¹ Report No. 154927-BT. <https://openknowledge.worldbank.org/bitstream/handle/10986/34971/Bhutan-Country-Partnership-Framework-for-the-Period-FY2021-24.pdf?sequence=1&isAllowed=y>.



Investment	NDC
Investment 1: Building Climate Resilience through Enhancement of Hydro-Meteorological and Cryosphere Information	<p>NDC Priority 4: Resilience to climate-induced hazards, as follows: (i) improved monitoring and detection of climate extremes, using satellite-based and remote sensing technologies and (ii) monitoring of potentially dangerous glacial lakes, and improvement of GLOF early warning systems.</p> <p>NDC Priority 8: Enhancing climate information services for vulnerability and adaptation assessment and planning, as follows: (i) strengthening of hydrometeorological stations and networks for weather and flood forecasting to adequate levels of temporal and spatial scales and (ii) development of climate change scenarios with appropriate resolutions for Bhutan’s mountainous terrains.</p>
Investment 2: Strengthening Climate-Resilience in the Management of Targeted Watersheds and Water Sources	<p>NDC Priority 3: Increased resilience to the impact of climate change on water security, through Integrated Water Resource Management (IWRM) approaches, as follows: (i) climate-adaptive water resource monitoring, assessment and mapping; (ii) climate-proofing water distribution systems; (iii) Climate Oriented Integrated Watershed and Wetland Management; and (iv) promotion of climate-resilient agriculture to contribute towards achieving food and nutrition security.</p>
Investment 3: Strengthening Resilience to Flood Hazards	<p>NDC Priority 4: Developing assessment, monitoring, and warning systems for flash floods and landslide hazards and risks.</p> <p>NDC priority 6: Climate-SMART transport infrastructure against landslides and flash floods, particularly for critical municipal roads, bridges, tunnel and trails.</p>



Investment	NDC
Investment 4: Supporting Climate-SMART Human Settlement Planning and Development for Samdrup Jongkhar Thromde	NDC priority 10: Integrating climate-resilient and low-carbon emission strategies in urban and rural settlements, as follows: promotion of Climate-SMART cities through adaptive improvement of storm water management and sewerage systems.
Investment 6: Strengthening Capacity for the Development of a Sound Climate Education Program in Bhutan	NDC means of implementation: Contributes to the overall capacity development of the country for enhancing its climate resilience.

4. The investments identified by the SPCR are expected to support the implementation of Bhutan’s NAP by enhancing adaptation planning processes to support medium- and long-term adaptation planning, with particular thematic focus on multisectoral water related adaptation actions (Investments 1, 2, 3, and 4).

5. The PDO is aligned with the PPCR priority of integrating climate resilience into strategic development planning of climate-vulnerable developing countries in building adaptation and resilience to climate change.²² The project supported this by helping the RGoB to integrate climate resilience into strategic development planning across sectors, identifying priority investment plans, and increasing institutional capacity to address climate change impacts.

Efficiency

6. A traditional cost-benefit analysis was not performed at appraisal and is not carried out at closing due to the nature of the project. At appraisal, the project was envisioned to generate benefits such as: (a) strengthening technical capacities of key institutions, which would help improve policies and regulations that will promote climate resilience measures and (b) integrating climate resilience into the government national plan and budget that would ultimately benefit the vulnerable sectors of the economy by increasing budgetary allocation to climate adaptation activities.

7. The project was successful in generating these benefits by strengthening technical capacity of the GNHC, NCHM, WMD, FEMD, DHS, DES, and NEC as well as integrating climate resilience in the 12th FYP, LEDS for Human Settlement, and NES 2020. It also enabled stronger inter-institutional coordination to address climate and disaster risks and for climate-informed decision making by enhancing the integration of cross-sectoral concerns such as disaster and climate resilience in the developmental activities of the country. Furthermore, it supported inter-agency climate data sharing. For example, WMD prepared an assessment

²² https://www.climateinvestmentfunds.org/sites/cif_enc/files/knowledge-documents/cif_annual_report_2020.pdf



report for the five-pilot spring shed sites using climate projection from NCHM, which was developed as part of the project.

8. The project disbursed US\$1.487 million (99.2%) of the total grant proceed of US\$1.5 million while reaching all targets and completing almost all planned project activities, including the preparation of the SPCR, five technical studies, and associated training activities, within the original project period - which indicates efficient utilization of project resources and time. An exception was the analysis of climate impact on water scarcity and development implementation plan for critical watersheds and the completion of the master's program by the four GNHC officials, which went beyond the original closing date. Another exception was a study on Labor and Material Coefficient for two construction materials, which was not completed by the extended closing date due to the COVID-19 pandemic, which prevented the team from carrying out required field visits. The WMD also canceled an ex-country training on Sustainable Natural Resources and Climate Resilient Practices. However, this cancellation did not affect the project directly as all other major training activities had already been completed and the unused amount of US\$40,600 was used by the WMD to procure equipment for spring shed assessment and an Uninterruptible Power Supply (UPS)²³ for the GHNC. Both purchases were considered key to Bhutan's capacity to develop a programmatic multi-sector and climate-resilient investment plan, and therefore the efficiency in resource use in this regard is considered sound.
9. There was a cost-overflow under Component B (original cost: US\$0.35 million; actual cost: US\$0.527 million) mainly due to a broader training program than planned, accounting for 90% of this component's actual cost. The training helped to train many more government institutions and officials than had been targeted - 485 government officials trained compared to an end target of 25, which was considered key to the development impact of the project. This cost overrun was supported by savings under Component A after completing the preparation of the SPCR and all five technical studies using less than the allocated budget. The 18-month extension did not result in a major increase in project management costs; project management costs increased by US\$21,613, but these were related mainly to the purchase of the UPS (US\$21,000). The remaining US\$613 were spent on procurement of office supplies. As such, the extension did not affect the project's efficiency.

²³ The UPS was purchased to ensure a stable IT network, especially for the online display of information on development activities and the discussion on developed policies.