



ACTIVITY BRIEFS

(subject to revisions)

Enhancing Climate Resilience of the Urban Landscapes and
Communities in Thimphu-Paro Region of Bhutan (ECRUL)

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རྩ་བརྟན་ཅན་གྱི་གནས་གཤིས་འགྱུར་བསྐྱོད་གྱི་ གཞུགས་ལམ་བཟོན་ནི།

Department of Human Settlement
Ministry of Infrastructure and Transport
Royal Government of Bhutan

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"During my reign as King, and for our generation, this is one of the most significant undertakings. It is an inflection point, a moment in history that is very important for us. This is a mandate and opportunity for us all – the King, the government, and the people to join hands and work tirelessly to pave the road to the future."

His Majesty The King,
116th National Day Address, Changlimithang,
17th of December 2023



དཔལ་ལྷན་འབྲུག་གཞུང་། གཞི་རྒྱུ་མཐོ་ཆས་དང་ སྤྱི་འཛིན་ལྷན་ཁག
ROYAL GOVERNMENT OF BHUTAN
MINISTRY OF INFRASTRUCTURE AND TRANSPORT
གཞིས་ཆགས་ལས་ཁུངས།
DEPARTMENT OF HUMAN SETTLEMENT
THIMPHU: BHUTAN



August 19, 2025

Foreword

It is with great pride and responsibility that we present the Activity Brief of the Enhancing Climate Resilience of the Urban Landscapes and Communities in Thimphu-Paro Region of Bhutan (ECRUL) Project. This document embodies our collective aspiration to build resilient, sustainable, and climate-conscious urban landscapes that effectively address the challenges of the 21st century.

Over the past six decades, Bhutan has seen remarkable transformation as Thimphu and Paro evolved from small settlements into modern urban centers with planned infrastructure, population growth, economic development, and a harmonious blend of traditional and contemporary architecture. Yet, this rapid urbanization amidst Bhutan's steep terrain presents increasing climate risks, extreme weather, flooding, landslides, heat stress, and water resource challenges that require urgent, innovative responses.

In recognition of these challenges, the ECRUL Project offers a strategic, six-year initiative to strengthen climate resilience in the Thimphu-Paro urban landscapes and communities. The project with a fund of \$ 20 million from the GEF LDCF and co-financing from the RGoB is being implemented by the MoIT in partnership with UNDP. The project aims to benefit over 146,000 residents in Thimphu and Paro.

More than a continuation of Bhutan's longstanding human settlement infrastructure development, ECRUL is a transformative agenda integrating Nature-based Solutions (NbS) and innovative urban planning approaches. It complements initiatives like the Gelephu Mindfulness City, providing architects, urban planners, engineers, and stakeholders the opportunity to blend tradition and innovation for climate-resilient urban development.

The purpose of this Activity Brief is two fold:

1. To provide clarity on all 91 sub-activities that form the cornerstone of ECRUL's implementation; and
2. To ensure project continuity by safeguarding against disruptions caused by personnel changes among focal persons and key officials. This risk, identified as Risk No. 7 (Staff turnover/attrition in the implementing agencies), is highlighted as a significant concern in the project document.

We acknowledge that this Activity Brief is a living document, subject to revisions as the project evolves. Should any confusion or uncertainty arise concerning the activities outlined herein, the ECRUL Prodoc shall serve as the authoritative guide. The PMU shall provide clear direction and resolve any queries raised by RPs for smooth and consistent implementation of all 91 sub-activities.



དཔལ་ལྷན་འབྲུག་གཞུང་། གནི་རྟེན་མཁོ་ཆས་དང་ སྤེལ་འདྲན་ལྷན་ཁག།

ROYAL GOVERNMENT OF BHUTAN
MINISTRY OF INFRASTRUCTURE AND TRANSPORT

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The 91 sub-activities in this Activity Brief cover climate-resilient urban infrastructure, from curriculum redevelopment and inclusive adaptation planning prioritizing vulnerable groups to engaging entrepreneurs in NbS. ECRUL promotes community awareness, supports green financial incentives, champions NbS entrepreneurship, restores land and water, enhances early warning systems, establishes fire protection lines, and strengthens infrastructure. It integrates NbS in urban green spaces and secures water resources digitally, with a dedicated PMU ensuring coordination and sustainability throughout.

This ambitious initiative calls on Bhutan's engineering and urban development community, private sector, academia, and civil society actors to collaborate in implementing infrastructure that is green, sustainable, restorative, and regenerative. It emphasizes knowledge management, drawing from global best practices while adapting to Bhutan's unique context and continuously refining approaches through shared learning.

Inspired by His Majesty the King's timeless wisdom and unwavering commitment, echoed in his 116th National Day address, ECRUL reflects our shared responsibility and potential to forge a climate-resilient, prosperous future for Bhutan.

We express sincere gratitude to the 20 responsible parties and dedicated focal persons whose collaboration was instrumental in shaping this Activity Brief and its comprehensive 91 sub-activities. Their commitment ensures that despite inevitable personnel changes, ECRUL's implementation remains resilient, continuous, and impactful.

Together, let us move forward with unity, determination, and vision toward a sustainable, vibrant tomorrow for Bhutan.

(Tashi Penjor)
Project Director

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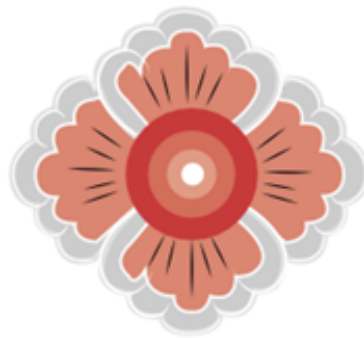
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Chapter I

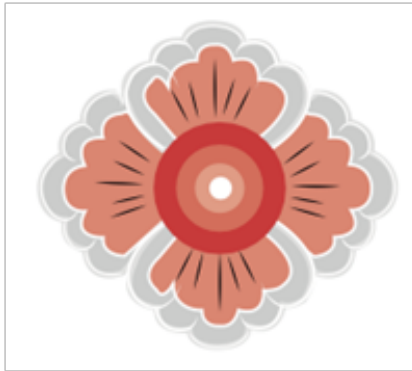
91 Sub-Activities by Responsible Parties

91 Sub-Activities by RPs

SN	SA No.	Sub-Activity/Summarized sub-activity	ECRUL budget in USD
PPD-MoIT			\$101,000
1	1.1.1.1	Assess institutional arrangements and mandates	\$52,500
2	1.1.1.2	Develop Strategy and Operational framework	\$42,500
3	1.1.1.3	Endorse and operationalise Strategy and Operational Framework	\$6,000
DWPSD-MoESD			\$150,000
4	1.4.1.1	Assess training capacity and needs	\$100,000
5	1.4.4.1	Conduct training program evaluations	\$30,000
6	1.4.4.2	Assess permanent training integration options	\$20,000
CST			\$700,000
7	1.4.2.1	Develop courses from needs assessment	\$152,765
8	1.4.2.2	Train trainers and build capacity	\$247,235
9	1.4.2.3	Implement courses in institutions	\$300,000
DECC-MoENR			\$330,000
10	1.3.1.1	Conduct gender analysis and RVA	\$94,000
11	1.3.1.2	Create participatory gender-responsive plans	\$236,000
PMU, DHS-MoIT			\$90,000
12	1.3.2.1	Design inclusive NbS community plans	\$90,000
NCWC-MoESD			\$20,000
13	1.3.2.2	Train officers on climate risk	\$20,000
DMDF-MoF			\$200,000
14	1.5.1.1	Develop private sector engagement strategy	\$20,000
15	1.5.1.2	Integrate climate data into planning	\$40,000
16	1.5.1.3	Develop climate prosperity plan	\$40,000
17	1.5.3.2	Implement NbS with PPP model	\$100,000
RMA			\$100,000
18	1.5.2.1	Assess and develop green finance policy	\$50,000
19	1.5.2.2	Train financial institutions on green financing	\$50,000
DoEE-MoICE			\$1,000,000
20	1.3.3.1	Develop private sector engagement strategy	\$30,000
21	1.3.3.2	Enhance NbS entrepreneurial skills	\$150,000
22	1.3.3.3	Expand NbS accelerator program inclusivity	\$270,000
23	1.3.3.4	Strengthen local NbS support mechanisms	\$550,000
DoW-MoENR			\$900,000
24	1.4.3.2	Train DoW officials on water resources management	\$120,000
25	1.5.3.1	Implement NbS via PES scheme	\$120,000
26	1.5.3.3	Assess water tariff system for sustainability	\$80,000
27	2.2.2.2	Assess critical/degraded watersheds	\$22,875
28	2.2.2.3	Implement nature-based watershed/springshed revival interventions	\$445,250
29	2.2.2.4	Develop Dzongkhag-level integrated water master plans	\$111,875

SN	SA No.	Sub-Activity/Summarized sub-activity	ECRUL budget in USD
WSD, DoID-MoIT			\$1,426,500
30	1.2.3.3	Train officials for water GIS	\$30,000
31	1.4.3.4	Train officials on resilient water infrastructure	\$80,000
32	1.4.3.5	Train technicians on water system maintenance	\$60,000
33	2.1.3.1	Digitize water supply systems	\$23,750
34	2.1.3.2	Install sensors and SCADA systems	\$148,750
35	2.1.3.3	Assess and improve water treatment	\$54,000
36	2.1.3.4	Secure climate-resilient water supply	\$1,030,000
NCHM			\$730,000
37	1.4.3.7	Train forecast-based EWS modelling	\$25,000
38	1.4.3.8	Train on weather data downscaling	\$15,000
39	2.4.1.1	Create Paro, Thimphu flood forecasting model	\$40,000
40	2.4.1.2	Integrate weather data into model	\$1,000
41	2.4.1.3	Build web-based flood warning platform	\$120,000
42	2.4.2.1	Install stream gauges and sensors	\$220,000
43	2.4.2.2	Setup water monitoring stations	\$260,000
44	2.4.2.3	Rehabilitate critical hydromet stations	\$40,000
45	2.4.3.1	Create EWS SOPs and protocols	\$1,000
46	2.4.3.2	Raise flood risk awareness	\$8,000
DoFPS-MoENR			\$84,450
47	2.2.1.2	Create firelines along urban borders	\$84,450
GLD, DHS-MoIT			\$639,000
48	1.2.1.1	Analyze GIS usage and gaps	\$17,500
49	1.2.1.2	Evaluate hardware and software, recommend necessary upgrades	\$17,500
50	1.2.2.1	Customize existing GIS hosting systems	\$80,000
51	1.2.2.2	Procure and install climate GIS technology	\$80,000
52	1.2.2.3	Produce maps via data analysis	\$130,000
53	1.2.3.1	Create GIS operation manual	\$64,000
54	1.2.3.2	Train GIS officials on climate	\$250,000
IPFAD, DHS-MoIT			\$265,000
55	1.4.3.1	Train officials on stormwater management	\$185,000
56	2.1.1.1	Inventory existing stormwater drainage	\$73,250
57	2.1.1.2	Prepare Paro stormwater management plan	\$6,750
SRBD, DHS-MoIT			\$1,250,741
58	1.4.3.6	Train professionals on green building practices	\$200,000
59	2.3.1.1	Develop and revise green standards	\$131,500
60	2.3.1.2	Create green buildings tools	\$83,500
61	2.3.2.1	Demonstrate resilient building technologies	\$516,116
62	2.3.2.2	Retrofit public buildings with technology	\$319,625
SSPD, DHS-MoIT			\$2,812,250
63	1.4.3.3	Train urban planners on NbS design	\$200,000
64	2.1.2.5	Demonstrate flood safety measures	\$300,000

SN	SA No.	Sub-Activity/Summarized sub-activity	ECRUL budget in USD
65	2.2.1.1	Stabilize riverbank, develop forests	\$1,002,250
66	2.2.3.2	Implement flood safety in Thimphu	\$1,310,000
Thimphu Thromde			\$3,164,000
67	2.1.2.1	Rehabilitate primary drains with NbS	\$1,215,000
68	2.1.2.2	Rehabilitate secondary drainage systems	\$1,495,000
69	2.1.2.3	Demonstrate lateral drainage flood reduction	\$454,000
Thimphu Dzongkhag			\$80,000
70	2.1.2.4	Rehabilitation of Storm Water Drainage Networks at Debsi LAP	\$80,000
Paro Dzongkhag			\$1,965,625
71	2.1.1.3	Implement NbS stormwater solutions in Paro	\$50,000
72	2.2.2.1	Build retention pond for resilience at Jangsa	\$382,250
73	2.2.3.1	Implement flood safety in Paro	\$1,533,375
PMU, DHS-MoIT			\$1,100,000
74	3.1.1.1	Create communication dissemination strategy	\$35,000
75	3.1.1.2	Launch website and social media	\$45,000
76	3.1.2.1	Create multimedia project success stories	\$130,000
77	3.1.2.2	Publish climate resilience research	\$80,000
78	3.1.2.3	Publish key project outputs	\$40,000
79	3.1.3.1	Facilitate exchange and action plans	\$120,000
80	3.1.4.1	Conduct study visits and exchanges	\$133,000
81	3.1.4.2	Attend and host climate resilience events	\$150,000
82	3.1.5.1	Implement regular KAP surveys	\$30,000
83	3.2.1.1	Conduct annual planning, reviews and adaptive management	\$60,000
84	3.2.1.2	Conduct baseline and indicator assessments	\$17,848
85	3.2.1.3	Prepare annual GEF implementation report	\$14,152
86	3.2.1.4	Organize TACC meetings	\$18,000
87	3.2.1.5	Monitor safeguards, risks, and gender plans	\$100,000
88	3.2.1.6	Conduct supervision and learning missions	0
89	3.2.1.7	Conduct field consultations and meetings	\$27,500
90	3.2.1.8	Conduct MTR	\$39,500
91	3.2.1.9	Conduct TE	\$60,000
Total of Component 1, 2 and 3			\$17,108,566
	1.3.2	UNDP Technical support	\$45,178
	2.2.3	UNDP Technical support	\$45,600
Grand Total			\$17,199,344



Chapter II

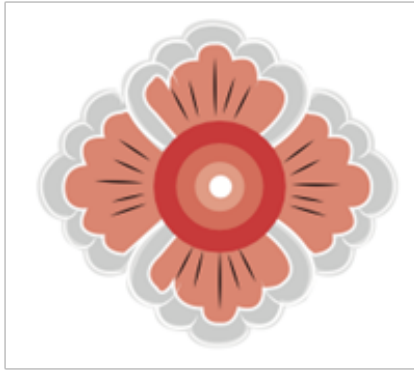
Overall Summary by Responsible Parties

Overall summary by RPs

SN	Responsible Party	No. of Cs and Os	No. of SA	ECRUL budget in USD
1	PPD-MoIT	1 [1]	3	\$101,000
2	GLD, DHS-MoIT	1 [3]	7	\$639,000
3	IPFAD, DHS-MoIT	2 [2]	3	\$265,000
4	SSPD, DHS-MoIT	2 [3]	4	\$2,812,250
5	SRBD, DHS-MoIT	2 [3]	5	\$1,250,741
6	WSD, DoID-MoIT	2 [3]	7	\$1,426,500
7	PMU, DHS-MoIT	2 [3]	19	\$1,190,000
8	DWPSD-MoESD	1 [2]	3	\$150,000
9	NCWC-MoESD	1 [1]	1	\$20,000
10	CST-RUB	1 [1]	3	\$700,000
11	DMDF-MoF	1 [2]	4	\$200,000
12	RMA	1 [1]	2	\$100,000
13	DECC-MoENR	1 [1]	2	\$330,000
14	DoW-MoENR	2 [3]	6	\$900,000
15	DoFPS-MoENR	1 [1]	1	\$84,450
16	NCHM	2 [4]	10	\$730,000
17	DoEE-MoICE	1 [1]	4	\$1,000,000
18	Thimphu Thromde	1 [1]	3	\$3,164,000
19	Thimphu Dzongkhag	1 [1]	1	\$80,000
20	Paro Dzongkhag	1 [3]	3	\$1,965,625
Total		3 [11]	91	\$17,108,566

Overall summary by Ministry/Agency/LG

SN	Ministry/Agency/LG	No. of Cs and Os	No. of SA	ECRUL budget in USD
1	Ministry of Infrastructure and Transport	3 [9]	48	\$7,684,491
2	Ministry of Education and Skills Development	1 [2]	4	\$170,000
3	Royal University of Bhutan	1 [1]	3	\$700,000
4	Ministry of Finance	1 [1]	4	\$200,000
5	Royal Monetary Authority	1 [1]	2	\$100,000
6	National Centre for Hydrology and Metrology	2 [4]	10	\$730,000
7	Ministry of Energy and Natural Resources	2 [4]	9	\$1,314,450
8	Ministry of Industry, Commerce and Employment	1 [1]	4	\$1,000,000
9	Local Governments	1 [2]	7	\$5,209,625
Total		3 [11]	91	\$17,108,566



Chapter III

Planting the Seeds of Strategy

1.PPD-MoIT

1.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.1.1.1	Assess institutional arrangements and mandates	\$52,500			1 yr	1 yr	1 yr	1 yr																		
2	1.1.1.2	Develop Strategy and Operational framework	\$42,500			1 yr	1 yr	1 yr	1 yr																		
3	1.1.1.3	Endorse and operationalise Strategy and Operational Framework	\$6,000			1 yr	1 yr	1 yr	1 yr																		
Total			\$101,000																								



1.2 Activity Brief for 1.1.1

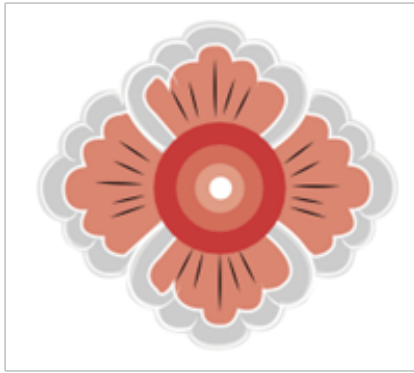
GENERAL ACTIVITY INFORMATION	Activity No.: 1.1.1 Sub Activity No.: 1.1.1.1, 1.1.1.2 & 1.1.1.3
Activity Name (As stated in Pro Doc)	Developing strategy and operative framework for inter-agency coordination and policy coherence for climate-resilient urban planning and development, in a participatory manner.
Location	National
Expected start date	July, 2025
Completion date	June, 2026
Approved budget	USD 101,000 Nu. 8,394,110
Responsible Parties	PPD-MoIT
Focal Person	Namzang Dema, Planning Officer, namzangd@moit.gov.bt, 17244457
ACTIVITY DETAILS	
Activity Background	The MoIT with financial support from the GEF and technical partnership with the UNDP is implementing the project titled ECRUL. While strategic initiatives such as the Thimphu-Paro Regional Strategy and the Thimphu Structure Plan (TSP) have been developed to guide urban development, the overall institutional mandates and coordination mechanisms remain fragmented. This has posed challenges to effective implementation of climate-resilient urban policies. To address these gaps, under Component 1, Output 1.1 of the project, the PPD will engage a qualified National Consultancy Firm to develop a “Strategy and Operational Framework for inter-agency coordination and policy coherence for climate-resilient urban planning and development, in a participatory manner”.
Activity Description	This activity aims to strengthen inter-agency coordination and policy coherence for climate-resilient urban planning and development by developing and operationalizing a participatory strategy and operational framework. The process begins with a comprehensive assessment of existing institutional mandates, functions and coordination mechanisms at national, district and municipal levels, with a focus on gender-responsiveness and climate resilience. Gaps, overlaps and inconsistencies will be identified and validated through inclusive stakeholder consultations. The resulting strategy and operational framework will be formally endorsed and implemented, ensuring clear roles, streamlined coordination and effective policy implementation. The activity ultimately seeks to create an enabling environment for inclusive, sustainable and climate-resilient urban growth.

Objectives	The primary objective of this activity is to develop a strategy and operational framework for inter-agency coordination and policy coherence in climate-resilient urban planning and development. Specifically, the assignment aims to: 1. Conduct a comprehensive assessment of existing national, district, and municipal institutional arrangements, mandates, and functions including gender-responsive and climate-resilience in urban planning and development. 1.1. Review the current functioning of institutional mandates and coordination mechanisms. 1.2. Analyze gaps, inconsistencies, and overlaps, particularly regarding gender-responsive and climate-resilient urban development. 1.3. Validate findings through inclusive consultations with relevant stakeholders and institutions. 2. Develop a participatory and evidence-based Strategy and Operational Framework that clearly defines institutional mandates, coordination mechanisms and policy alignment strategies to promote integrated, gender-inclusive and climate-resilient urban planning and development. The strategy and framework will be formulated through a critical review of previous studies, consideration of emerging requirements and integration of international best practices in gender-responsive and climate-resilient urban development.
Scope	Inclusions: • Preparation of ToR and procurement of a qualified consultancy firm. • Comprehensive institutional assessment at all governance levels. • Structured, inclusive stakeholder consultations and validation workshops. • Development, review and finalization of the strategy and operational framework. • Formal endorsement and operationalization of the framework. Exclusions: • Implementation of specific urban development projects or infrastructure. • Capacity-building or training activities beyond those required for framework validation. • Policy changes outside the scope of urban planning and climate resilience.
Key requirements	• Develop detailed ToR and conduct formal procurement (eSRFP) to select a qualified consultancy firm. • Consultancy initiates assignment with Inception Report; assesses institutional arrangements, mandates and functions. • Facilitate broad stakeholder consultations to ensure participatory input throughout the process. • Prepare and submit multiple Strategy drafts, reviewed via consultations and formal stakeholder presentations. • Finalize and submit Strategy for official approval after thorough review and endorsement.

Expected benefits	The expected beneficiaries of this intervention include: • Government Institutions (National, District, Municipal): Improved clarity of roles, enhanced coordination and strengthened policy frameworks. • Urban Planners, Policy Makers, Technical Agencies: Access to structured guidance for inclusive and climate-resilient planning. • Local Communities: Equitable, resilient urban services and infrastructure • Private Sector and Investors: Support for sustainable, green investments • Civil Society and Academia: Opportunities for participation, knowledge exchange and advocacy. • All benefits align with ECRUL Project objectives, emphasizing gender equality, inclusion and climate resilience.
Key milestones	Following are the key milestones and tentative timelines: • September 30, 2025: Completion of preparatory phase (ToR, Tender Floating (eSRFP), Contract signing). • October 15, 2025: Inception Report. • November 15, 2025: Institutional assessment, stakeholder consultations and zero draft submission. • December 10, 2025: Validation of findings. • February, 2026: Finalization, endorsement and operationalization of the strategy and framework. • February, 2026 or March 2026: Launching of framework. • March and April, 2026: Dissemination of framework.
Activity Risks	Risk 1: Delays in procurement and consultancy recruitment. Mitigation: Consideration of the implementation timeline or establish a clear procurement timeline, coordinate closely with the Procurement Division of the Ministry and ensure early ToR preparation and approval. Risk 2: Limited stakeholder engagement or resistance. Mitigation: Implement a robust stakeholder engagement plan, use inclusive consultation methods and conduct regular validation workshops to build consensus and ownership.
Activity EXIT criteria	1. Formal endorsement and operationalization of the Strategy and Operational Framework by the Ministry. 2. Completion and approval of all deliverables (institutional assessment, draft strategy versions, validation reports). 3. Dissemination (press release and mainstream media) of the approved Strategy and Operational Framework to all relevant institutions. 4. Confirmation that the framework is in active use for guiding inter-agency coordination and policy coherence.
Prepared by	Namzang Dema, Planning Officer, Submitted on May 21, 2025

1.3 Budget breakdown for 1.1.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$70,000
	Description Output 1.1, Activity 1.1.1: Assessment of existing national, district and municipal institutional arrangements, mandates and functions in the context of gender-responsive and climate-resilient urban development. This will be followed by: a) a review of how these arrangements are functioning and b) an analysis of gaps, inconsistencies, and overlaps, all in view of gender-responsive and climate resilient urban development, c) validation of findings with institutions. Item: Short term local consultant. Calculation: unit cost \$ 450 x 89 = \$ 40,000 Output 1.1, Activity 1.1.1: Development of Strategy and Operational Framework for streamlined inter-agency coordination and improved policy coherence, in participatory manner. Item: Short term local consultant. Calculation: unit cost \$ 450 x 67 = \$ 30,000	
2	Training, Workshops, Meetings	\$20,470
	Description Output 1.1, Activity 1.1.1: Validation of findings and Sensitisation workshops for officials working in urban planning and development, and related sectors. Item: Workshop and Training: 3 meetings, approximate costs: 30 people, 3 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 6,823 x 3 = \$ 20,470	
3	Travel	\$10,530
	Description Output 1.1, Activity 1.1.1: Validation of findings and Sensitisation workshops for officials working in urban planning and development, and related sectors. Item: Travel: 30 people x \$39 x 3 days. Calculation: unit cost \$ 3,510 x 3 = \$ 10,530	
Total		\$101,000



Chapter IV

Nurturing Minds and Hearts

2.DWPSD-MoESD

2.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.4.1.1	Assess training capacity and needs	\$100,000			1.2 5 y	1.2 5 y	1.2 5 y	1.2 5 y	1.2 5 y	1.2 5 y	1.2 5 y	1.2 5 y	1.2 5 y													
2	1.4.4.1	Conduct training program evaluations	\$30,000						1.2 5 y									1.2 5 y	1.2 5 y			1.2 5 y					
3	1.4.4.2	Assess permanent training integration options	\$20,000					0.7 5 y	0.7 5 y	0.7 5 y																	
Total			\$150,000																								



2.2.1 Activity Brief for 1.4.1.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.1.1
Activity Name (As stated in ProDoc)	Review of existing educational and training programmes and training capacity of training service providers in the government, civil society organizations and private sector, from a gender and climate adaptation perspective
Location	National
Expected start date	August 2025
Completion date	December 2027
Approved budget	USD 100,000 Nu. 8,311,000
Responsible Parties	DWPSD-MoESD
Focal Person	Karma Dorji, Dy. Chief Program Officer, kdorji@moesd.gov.bt, 17662848 Wangchuk, Program Analyst, wangchuk@moesd.gov.bt, 17609015
ACTIVITY DETAILS	
Activity Background	TVET Curricula Revision/ develop The department proposed revision of curricula in IZCs and TTIs (Institute of Zorig Chusum and Technical Training Institutes). These curricula were developed in 2020 and with the revision of National Competency Standard, it is time for revision of curricula for these curricula. Without the revision of curriculum, the courses shall not be eligible for accreditation and national assessment and certification conducted by the Bhutan Qualifications and Professionals Certification Authority (BQPCA) The output of the above sub-activity will contribute to achieve quality and relevance of the TVET program. Conduct ToT-Occupational Skill Development for TTIs and IZCs Revision and enhancement of curricula in TTIs and Institutes of IZCs are critical due to updated National Competency Standards introduced since the last curriculum development in 2020. Without revision, current courses risk losing accreditation and cannot be assessed or certified by the BQPCA. Additionally, there is a growing need to strengthen the capacity of TVET trainers due to technological changes and a rise in newly qualified faculty members who lack core occupational skills. This activity addresses these gaps, with an emphasis on integrating climate resilience and gender perspectives.

Activity Description	This activity entails conducting a comprehensive review and revision or development of curricula, specifically embedding climate resilience modules, for skilling, reskilling, and upskilling of planning professionals and workforce within TVET/IZC institutions. The process includes: • Conducting labour market assessments and tracer studies to identify needs • Engaging industry experts and stakeholders through workshops to ensure relevance • Drafting, reviewing, and finalizing curricula for accreditation and certification • Organizing Training of Trainers (ToT) workshops to build instructors' capacity to deliver updated content effectively • Official endorsement by the DWPSD and deployment of curricula at all relevant institutes This activity aims to produce quality and relevant educational programmes that sustain workforce resilience to climate impacts and encourage gender inclusivity.
Objectives	1. Equip trainees/students with knowledge and skills on climate resilience integrated in their vocational training 2. Strengthen competencies of TVET/IZC trainers through ToT programs 3. Institutionalize updated training programmes in government education and training institutions
Scope	Inclusion: • Development and implementation of climate resilience-related curriculum modules in TVET/IZCs • Capacity building for TVET/IZC trainers via ToT programs • Engagement with industry experts for curriculum validation and development Exclusion: • Direct infrastructure development projects • Assessment outside the MoESD scope • Curriculum development outside TVET/IZC institutions network
Key requirements	• Participation of industry experts with a minimum of 5 years relevant occupational experience • Certified ToT facilitators for instructor training • Access to labour market data and stakeholder engagement platforms
Expected benefits	• 300 trainees trained or receiving awareness on climate-resilient skills (with targeted gender inclusion: 200 males and 100 females) • Improved quality and accreditation of TVET programmes aligned with national standards • Enhanced capacity of trainers, leading to sustainable programme delivery
Key milestones	• Q3 2025: Development of first training curriculum • Q3 2025: Completion of Labour Market Needs Assessment • Q3 2025: Development of First Curriculum Module • Q4 2025: ToT Workshops for Trainers Conducted • Q1 2026: Pilot Implementation Across TVET/IZCs • February 2026: First curriculum rollout across TVET institutes • 2026 - 2027: Full Curriculum Rollout and Monitoring

Activity Briefs

Activity Risks	Risk 1: Difficulty in securing qualified industry experts for curriculum development Mitigation: Early engagement and formal agreements with industry bodies; incentives for participation Risk 2: Low enrollment rates during the implementation phase Mitigation: Outreach and awareness campaigns targeting prospective trainees, including women and marginalized groups
Activity EXIT criteria	1. Existing curricula reviewed and updated to reflect national competency standards and climate resilience 2. New training curricula developed and accredited by BQPCA 3. TVET trainers certified through ToT courses 4. Updated programmes institutionalized across TVET/IZC institutions 5. At least 300 (100 female) trainees trained or made aware, meeting gender targets
Prepared by	Wangchuk, Program Analyst, Submitted on 26 May 2025

2.2.2 Activity Brief for 1.4.4.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.4.1
Activity Name (As stated in ProDoc)	Evaluation of implemented programmes (tracer survey, attendance and performance, participants feedback, etc.)
Location	National
Expected start date	01 November 2025
Completion date	30 December 2029
Approved budget	USD 30,000 Nu. 2,493,300
Responsible Parties	Workforce Planning and Information Division (WPID), DWPSD-MoESD
Focal Person	Karma Dorji, Dy. Chief Program Officer, kdorji@moesd.gov.bt, 17662848 Wangchuk, Program Analyst, wangchuk@moesd.gov.bt, 17609015
ACTIVITY DETAILS	
Activity Background	The evaluation (tracer survey, attendance and performance, participants feedback, etc.) of the implemented program is very essential parts of project implementation to measure the achievement of the target as per the project result framework and to determine the impact and relevance of various activities implemented through this project in achieving the main objective of ECRUL. Through trace study it will assess the effectiveness and impact of educational and training programmes introduced under the ECRUL project. The study will assess how participants have applied skills and knowledge acquired through the training, providing evidence for institutional learning and continued capacity building
Activity Description	The evaluation and tracer study of all the programs implemented by DWPSD will be carried out by WPID, DWPSD, MoESD. The activities include design of survey, feedback and tracer study tool, consultation and collection of data from the field, cleaning of data, data analysis and publication of study report. Tracer Surveys – Conducted to track the post-training status of participants, including employment, skills application, and career progression. Attendance and Performance Monitoring – Reviewing participation rates, completion rates, and performance outcomes during the training. Participants’ Feedback – Collecting qualitative and quantitative feedback from trainees to evaluate relevance, quality, and areas for improvement. Impact Assessment – Identifying how the training has contributed to climate-resilient urban development and capacity-building objectives.
Objectives	1. Evaluate the effectiveness and impact of climate resilience training programs for various professionals under the purview of DWPSD. 2. Conduct tracer study to track how participants apply their skills and knowledge in real-world settings for all educational programmes under ECRUL project. 3. Assess attendance, participation, and performance to gauge course quality and outcomes. 4. Collect feedback from participants to identify satisfaction and improvement areas. 5. Support institutional learning by providing evidence to integrate successful training modules into permanent curricula.

Scope	Inclusion: - Monitoring and evaluation of all activities implemented by DWPSD, MoESD - Tracer studies covering all capacity-building/training activities within the ECRUL project scope. Exclusion: - Monitoring and evaluation of activities beyond DWPSD, MoESD activities.
Key requirements	- Access to detailed information of all training programs, including participants data, contact details, organization names and employment status. - A standard data entry format for recording participant details from all implementing partners. - Collaborate with CST and all RPs implementing capacity development activities to finalize the data entry format prior to evaluation activities.
Expected benefits	- Enhanced understanding of the relevance and impact of training activities on climate resilience in urban landscapes and communities - Evidence-based support for improving and institutionalizing effective training programmes - Beneficiaries include all trained participants across gender and other project-mandated indicators aligned with ECRUL Project objectives
Key milestones	30 November 2025: Finalize data entry format 1 January 2029: Design and development of survey/trace study tools 1 March 2029: Data collection, consultation, and field visits 30 June 2029: Data cleaning and analysis 15 December 2029: Publication of report and findings
Activity Risks	Risk 1: Inconsistent data entry harming data validity Mitigation: Finalizing a standardized data entry format before starting evaluations. Risk 2: Low response rates compromising report quality Mitigation: Briefing participants after each training and collecting multiple contact details to maintain communication. Risk 3: Loss of key WPID experts Mitigation: Succession planning and institutional knowledge management within WPID.
Activity EXIT criteria	Success criteria: - Data entry format developed and finalized on time. - Evaluation and tracer study carried out as planned. - Publication of final evaluation report and tracer study report.
Prepared by	Karma Dorji, Dy. Chief Program Officer, Submitted on July 22, 2025.

2.2.3 Activity Brief for 1.4.4.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.4.2
Activity Name (As stated in ProDoc)	Assessment of options for permanent integration of training programmes in selected institutions
Location	National
Expected start date	January 2026
Completion date	September 2026
Approved budget	USD 20,000 Nu. 1,662,200
Responsible Parties	Technical Trainers Training & Resource Center, DWPSD, MoESD.
Focal Person	Karma Dorji, Dy. Chief Program Officer, kdorji@moesd.gov.bt, 17662848 Wangchuk, Program Analyst, wangchuk@moesd.gov.bt, 17609015
ACTIVITY DETAILS	
Activity Background	This activity supports mainstreaming climate resilience into educational and training programmes for urban planning and technical workforce. The previously implemented Environment module on Sustainable Consumption and Production (SCP) across public TVET institutes was discontinued. Reviving and institutionalizing this module is critical for fostering long-term capacity development and alignment with national climate goals.
Activity Description	The activity focuses on evaluating the feasibility and strategizing the permanent integration of the Environment module on SCP into selected public TVET institutions as an elective. A study will review current curricula, identify focal trainers, and outline capacity-building and institutional support to sustain module delivery. The outcome will guide curriculum reforms and policy recommendations to secure the module's long-term institutionalization, thereby building a skilled, climate-resilient workforce in Bhutan's construction and urban development sectors.
Objectives	1. Assess feasibility and relevance of the SCP module in current TVET curricula. 2. Identify and designate focal trainers across public TVET institutes. 3. Outline capacity building interventions and institutional mechanisms for sustained delivery and quality assurance. 4. Recommend curriculum and policy reforms for permanent integration of SCP-related training programmes.
Scope	Inclusion: • Assess and recommend improvements for public TVET institutes. • Identify and train focal trainers. • Develop capacity building plans and support structures. Exclusion: • Private training and higher education institutions.
Key requirements	• Experienced officials to conduct comprehensive programme assessment. • At least one capable focal trainer from each of the public TVET institutes to participate actively in capacity building and module delivery.

Activity Briefs

Expected benefits	• Permanent inclusion of the SCP Environment module in TVET curricula • Development of a skilled workforce focused on climate resilience and green jobs • Promotion of gender equality through equal participation of women and youth trainees • Capacity building specifically targeting women trainers • Support for ECRUL project indicators on: • Number of beneficiaries (disaggregated by gender) • Number of people trained • Establishment of gender-responsive policies
Key milestones	• 30 March 2026: Carryout study of existing environment module implementation • 30 June 2026: Review and revise module based on study findings • 30 September 2026: Identify and build capacity of Focal Trainers • 30 March 2027: Reintroduce environment module across public TVET institutes
Activity Risks	Risk 1: Trainer shortage Mitigation: Early engagement with TMCD, DWPSD, and TVET institutes to sensitize and prepare trainers. Risk 2: Curriculum overload Mitigation: Streamline module content and adjust module duration to fit current curricula. Risk 3: Lack of practical relevance reducing trainee interest Mitigation: Incorporate mini-projects, action tasks, and field visits into the module
Activity EXIT criteria	1. Completion of assessment of the existing Environment module. 2. Revised SCP Environment module approved. 3. Focal trainers identified and trained. 4. SCP Environment module successfully reintroduced in public TVET institutes.
Prepared by	Karma Dorji, Dy. Chief Program Officer, Submitted on July 22, 2025.

2.3.1 Budget breakdown for 1.4.1.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$25,000
	Description Output 1.4, Activity 1.4.1: Review of existing educational and training programmes and training capacity of training service providers in the government, civil society organizations and private sector, from a gender and climate adaptation perspective. Item: Local Consultant for review of existing educational and training programmes: 2 experts, 25 days each. Calculation: unit cost \$ 450 x 56 = \$ 25,000	
2	Training, Workshops, Meetings	\$50,430
	Description Output 1.4, Activity 1.4.1: Review of existing educational and training programmes and training capacity of training service providers in the government, civil society organizations and private sector, from a gender and climate adaptation perspective Item: Workshop and Training: approx. costs - Y2- 3 workshop/training x 9 people @71 x 10 days; Y3- 4 workshop/training x 10 people @71 x 10 days. Calculation: unit cost \$ 7,204 x 7 = \$ 50,430	
3	Travel	\$24,570
	Description Output 1.4, Activity 1.4.1: Capacity building of relevant officers on climate change risk impacts on all vulnerable communities with inclusion of gender in NbS. Item: Travel: Approx. costs: Approx. costs Y2- 3 travel x 9 heads @ 39 x 10 days = 10,530; Y3- 4 travel x 9 heads @ 39 x 10 days = 14,040. Calculation: unit cost \$ 3,510 x 7 = \$ 24,570	
Total		\$100,000

2.3.2 Budget breakdown for 1.4.4.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$30,000
	Description Output 1.4, Activity 1.4.4: Evaluation of implemented programmes (tracer survey, attendance and performance, participants feedback, etc.). Item: Local Consultant, for Evaluation of implemented programmes. Calculation: unit cost \$ 450 x 67 = \$ 30,000.	
Total		\$30,000

2.3.3 Budget breakdown for 1.4.4.2

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$20,000
	Description Output 1.4, Activity 1.4.4: Assessment of options for permanent integration of training programmes in selected institutions. Item: Local consultant Assessment of options for permanent integration of training programmes in selected institutions. Calculation: unit cost \$ 450 x 44 = \$ 20,000	
Total		\$20,000

3. CST-RUB

3.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.4.2.1	Develop courses from needs assessment	\$152,765			4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr					
2	1.4.2.2	Train trainers and build capacity	\$247,235			4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr					
3	1.4.2.3	Implement courses in institutions	\$300,000									3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr				
Total			\$700,000																								

3.2.1 Activity Brief for 1.4.2.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.2.1
Activity Name (As stated in ProDoc)	1.4.2.1 Assessment of existing course and Development of courses based on the needs assessment
Location	National
Expected start date	July 2025
Completion date	Dec 2030
Approved budget	USD 152,765 Nu. 12,696,299.15
Responsible Parties	CST, RUB
Focal Person	Lily Gurung, Lecturer, lilygurung.cst@rub.edu.bt, 17986676; Jigme Thinley, Architect/Lecturer, jigmethinley.cst@rub.edu.bt, 17318529; Dr. Sangey Pasang, Asst. Professor, sangeypasang.cst@rub.edu.bt, 77774567
ACTIVITY DETAILS	
Activity Background	The current education system primarily emphasizes traditional knowledge and conventional climate change initiatives. However, there is a gap in exposure to NbS and inclusive climate-informed decision-making among students and professionals. This activity is initiated to address this gap by integrating NbS-focused educational and training programmes at the CST, RUB, thereby enhancing climate resilience knowledge and skills.
Activity Description	This activity involves assessing educational and training programmes related to climate resilience and NbS in tertiary academic institutions (CST-RUB). This sub-activity consists of preliminary need assessments of: - Existing modules (at least 30 existing modules) - New modules (~8 new modules) - New programmes and - New research degrees/PhD degree.
Objectives	Conduct a needs assessment of existing modules, new modules, programmes, and research degrees/PhD related to NbS.
Scope	Inclusion: - Development and integration of NbS-related modules, courses, and programmes within engineering disciplines at CST. Exclusion: - Non-engineering programmes within CST, and courses outside CST.
Key requirements	- Skilled personnel (faculties and technicians), for curriculum development and training delivery. - Collaboration with relevant experts in NbS and climate resilience.
Expected benefits	- Need assessment of research degree/PhD complete - NbS and climate resilience incorporated in the existing modules - New modules on NbS and Climate resilience developed 20 CST personnel trained and aware on NbS

Activity Briefs

Key milestones	• Q2 2025: Formation of Working Group (ECRUL-CST) • Q4 2025: Review of at least six existing modules • Each year until 2030: Review of at least six existing modules each year, totaling 30 modules by 2030 • 2030: New modules developed and validated (~8) • Q4 each year: Validation of Definitive Programme Document (DPD)/ Modules by local consultant.
Activity Risks	• No significant risks identified at this stage.
Activity EXIT criteria	Success criteria: 1. Completion of need assessment (new (~ 8 modules), existing (>30 modules), new programmes and PhD degree/research). 2. Review and revision of existing modules 3. New modules offered.
Prepared by	Jigme Thinley, Architect/Lecturer, Submitted on May 19, 2025

3.2.2 Activity Brief for 1.4.2.2

GENERAL ACTIVITY INFORMATION		Sub Activity No.: 1.4.2.2
Activity Name (As stated in ProDoc)	1.4.2.2. Strengthening the Capacity of relevant officials from learning institutions to be hosting training programs, including training of trainers	
Location	National	
Expected start date	July, 2025	
Completion date	Dec, 2028	
Approved budget	USD 247,235 Nu. 20,547,700.85	
Responsible Parties	College of Science and Technology, RUB	
Focal Person	Lily Gurung, Lecturer, lilygurung.cst@rub.edu.bt, 17986676; Jigme Thinley, Architect/Lecturer, jigmethinley.cst@rub.edu.bt, 17318529; Dr. Sangey Pasang, Asst. Professor, sangeypasang.cst@rub.edu.bt, 77774567	
ACTIVITY DETAILS		
Activity Background	The current education system consists of traditional knowledge and conventional climate change initiatives. However, students and professionals lack exposure to NbS and inclusive climate-informed decision-making. In response, this activity aims to implement relevant NbS educational and training programmes at CST. These educational programmes will be not only available to the students of CST, it will be also provided as short-term training programmes to various professionals to facilitate broader transfer of skill and knowledge.	
Activity Description	This activity focuses on introducing and institutionalizing educational and training programmes on climate resilience and NbS at the CST-RUB. It aims to strengthen the capacity of CST officials through targeted training and development of training manuals. These officials will then conduct training of trainers (ToT) sessions, enabling further dissemination of skills and knowledge to a wider pool of professionals across the country. The programme will include short-term training courses accessible to professionals beyond CST students, thereby fostering inclusive capacity building in climate resilience and NbS.	
Objectives	1. Develop the capacity of academia to deliver NbS and climate resilience education and training. 2. Equip CST personnel with skills to design and deliver NbS-related training programmes and manuals. 3. Facilitate broad knowledge transfer through training of trainers and professional development courses.	
Scope	Inclusion: • Capacity building of CST technical officials. • Development of training manuals and ToT programmes. • Delivery of short-term training courses to professionals nationwide. Exclusion: • Direct infrastructure development or community-level implementation projects. • Training outside the scope of NbS and climate resilience.	

Activity Briefs

Key requirements	• Commitment from CST officials to participate in capacity development. • Development and validation of training materials and manuals. • Coordination with professional bodies for participant outreach.
Expected benefits	• HR Capacity in NbS developed in academia. • Institutionalization of NbS training programmes at CST, strengthening national capacity in climate resilience education.
Key milestones	• By July 2025: Commencement of first capacity development training (3 personnel). • Q4 each year: Completion of training manuals and institutionalization of programmes. • 2028: Capacity building of 34 CST personnel.
Activity Risks	Risk 1: Potential gender imbalance in training participants due to male dominance in engineering and urban planning fields. Mitigation: Targeted invitations and outreach to encourage female participation in training programmes.
Activity EXIT criteria	Success criteria: 1. NbS training manuals developed and validated. 2. Training programmes fully institutionalized at CST.
Prepared by	Jigme Thinley, Architect/Lecturer, Submitted on May 19, 2025

3.2.3 Activity Brief for 1.4.2.3

GENERAL ACTIVITY INFORMATION		Sub Activity No.: 1.4.2.3
Activity Name (As stated in ProDoc)	1.4.2.3.Implementation of courses in training institutes and colleges	
Location	National	
Expected start date	July 2025	
Completion date	December 2029	
Approved budget	USD 300,000 Nu. 24,933,000	
Responsible Parties	CST-RUB	
Focal Person	Lily Gurung, Lecturer, lilygurung.cst@rub.edu.bt, 17986676; Jigme Thinley, Architect/Lecturer, jigmethinley.cst@rub.edu.bt, 17318529; Dr. Sangey Pasang, Asst. Professor, sangeypasang.cst@rub.edu.bt, 77774567	
ACTIVITY DETAILS		
Activity Background	The current education system integrates traditional knowledge and conventional climate change initiatives but lacks sufficient focus on NbS and inclusive climate-informed decision-making. To address this gap, this activity aims to introduce and implement relevant NbS educational and training programmes at the CST. These programmes will target not only CST students but also professionals through short-term training, promoting broader skill and knowledge transfer.	
Activity Description	This activity involves the introduction and implementation of new educational and training modules focused on climate resilience and NbS within tertiary academic institutions, specifically at CST under RUB. Building on needs identified in the first project phase, new courses, modules, and programmes will be developed and integrated into the engineering curriculum. Additionally, related laboratory facilities will be established to support practical learning. The activity will also include the development of at least two prototypes demonstrating effective NbS applications. This approach aims to enhance the capacity of students and professionals to apply NbS in climate adaptation and resilience efforts.	
Objectives	1. Implement new modules, courses, and programmes on NbS and climate resilience. 2. Develop and establish NbS-related laboratory facilities at CST. 3. Procure course materials (text books, manuals, equipment etc.) 4. Train and raise awareness among students and professionals on NbS applications.	
Scope	Inclusion: • Development and implementation of NbS-related educational content as new modules, courses, and programmes within engineering disciplines at CST. • Establishment of NbS laboratories and prototype development at CST. Exclusion: • Non-engineering courses within CST, and departments outside CST.	

Activity Briefs

Key requirements	• Capacity building of faculty and relevant officials to develop and deliver new NbS modules and courses. • Development of NbS-related laboratory infrastructure to support practical training and prototype demonstration.
Expected benefits	• At least 200 students/individuals trained or made aware of NbS concepts and applications by project end (140 male, 60 female). • Mid-term target: 100 individuals trained (70 male, 30 female). • Enhanced capacity of CST to integrate NbS into engineering education and professional training.
Key milestones	• Q4, 2026: Contract award for laboratory development at CST • Q4, 2027: Development and operationalization of NbS labs at CST • Ongoing through 2029: Implementation of new courses and modules • By end of 2029: Training of 200 beneficiaries (students and professionals)
Activity Risks	No significant risks identified at this stage.
Activity EXIT criteria	Success criteria: 1. Successful development and operationalization of NbS laboratories at CST. 2. Completion of training and awareness programmes reaching 200 individuals with gender balance (440 male, 60 female).
Prepared by	Jigme Thinley, Architect/Lecturer, Submitted on May 19, 2025

3.3.1 Budget breakdown for 1.4.2.1

SN	Budget Items	ECRUL budget in USD
1	International Consultants	\$25,000
	Description Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment Item: International Consultant to review the changed and new modules, to review the master programme. Calculation: unit cost \$ 1,000 x 25 = \$ 25,000.	
2	Local Consultants	\$20,000
	Description Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment Item: Local consultant to review the changed and new modules, and the master programme. Calculation: unit cost \$ 450 x 44 = \$ 20,000	
3	Training, Workshops, Meetings	\$87,839
	Description Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment. Item: 1. Y1 for PhD programme needs analysis: 5 participants will attend 1 workshop for 5 working days. 2. Y 2 for the BE programme needs analysis. 5 participants will have 1 workshop of 5 working days. 3. Y1 travelled to 6 Dzongkhags for a needs analysis survey and report. 2 working days each in 6 Dzongkhags with 2 participants Y1 - (5 people @ 71 x 5days + (2 people @ 71 x 12 days). Y2 - x 5 people @ 71 x 5days. Calculation: unit cost \$ 1,800 x 3 = \$ 5,400 Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment Item: Training, workshops and travel for assessment and review of existing modules to incorporate climate/urban resilience component into existing modules Year 1 = 10 staff will attend training/workshop/travel for 7 days. Year 2 =13 staff will attend training/workshop/travel for 7 days. Year 3 =13 staff will attend training/workshop /travel for 7 days. Year 4 =13 staff will attend training/workshop/travel for 7 days. year 5 = 13 staff will attend training/workshop/travel for 7 days. Approx costs (7days x 57 participants @\$71) + meeting hall @\$125 Calculation: unit cost \$ 31,439 x 1 = \$ 31,439 Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment Item: Training, workshop and travel for the development of new modules as regular/elective modules, to develop and integrate new modules in the field of climate/urban resilience into existing programmes. Year 1 = 8 staff will attend training/workshop/travel for 6 days. Year 2 =8 staff will attend training/workshop/travel for 6 days. Year 3 =8 staff will attend training/workshop/travel for 6 days. Year 4 =19 staff will attend training/workshop/travel for 6 days. year 5 = 13 staff will attend training/workshop/ travel for 6 days. (110\$ x 6days x 56 participants) + (5 workshop/training x 6 days x 125\$ meeting hall). Calculation: unit cost \$ 40,000 x 1 = \$ 40,000	
	Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment Item: Training, workshop and travel for the development programme for Master in Engineering by research to cater for topics related to climate/urban resilience: 1 Programme (DaysXNo.of participantsXTADA) Year 1 = 8 staff will attend training/workshop/travel for 6 days. Year 2 = 6 staff will attend training/workshop/travel for 6 days. (110\$ x 6days x 14 participants) + (2 workshop/training x 6days x 125\$ meeting hall) Calculation: unit cost \$ 11,000 x 1 = \$ 11,000	

Activity Briefs

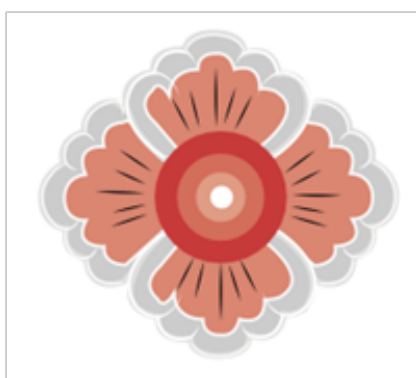
4	Travel	\$19,926
	Description Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment Item: Y1 - (5 people @ 39 x 5days) + (2 people @ 39 x 12 days) Y2 - 5 people @ 39 x 5days. Calculation: unit cost \$ 1,000 x 3 = \$ 3,000 Output 1.4, Activity 1.4.2: Assessment of existing course and Development of courses based on the needs assessment Item: Year 1 = 10 staff will travel for 7 days. Year 2 =13 staff will travel for 7 days. Year 3 =13 staff will travel for 7 days. Year 4 =13 staff will travel for 7 days. year 5 = 13 staff will travel for 7 days. Approx. costs: 7days x 57 participants @\$71. Calculation: unit cost \$ 16,926 x 1 = \$ 16,926	
Total		\$152,765

3.3.2 Budget breakdown for 1.4.2.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$12,915
	Description Output 1.4, Activity 1.4.2: Strengthening the Capacity of relevant officials from learning institutions to be hosting training programs, including training of trainers Item: Contractual services - Ex-country (tuition fees): professional training for building capacity of the staff at CST to offer the modules and train professionals on climate/urban resilience. Calculation: unit cost \$ 12,915 x 1 = \$ 12,915	
2	Training, Workshops, Meetings	\$234,320
	Description Output 1.4, Activity 1.4.2: Strengthening the Capacity of relevant officials from learning institutions to be hosting training programs, including training of trainers Item: Training - Ex-country: professional training for building capacity of the staff at CST to offer the modules and train professionals on climate/urban resilience: 48 x 3500 per head. (DaysX No. of participantsXTADA) Year 1 = 14 staff will attend training/workshop/travel for 7 days. Year 2 = 15 staff will attend training/workshop/travel for 7 days. Year 3 = 11 staff will attend training/workshop/travel for 7 days. Year 4 = 8 staff will attend training/workshop/travel for 7 days. (200\$ DSA/flight x 8 days + 1900 tuition fees) x 48 people. Calculation: unit cost \$ 152,320 x 1 = \$ 152,320 Output 1.4, Activity 1.4.2: Strengthening the Capacity of relevant officials from learning institutions to be hosting training programs, including training of trainers. Item: Training - In-country training/Online training to build HR capacity of the staff at CST on climate/urban resilience through in-country training and online training 3 trainings (DaysXNo.of participantsXTADA) Year 1 = 15 staff will attend training/workshop/travel for 6 days. Year 2 = 19 staff will attend training/workshop/travel for 6 days. Year 3 = 8 staff will attend training/workshop/travel for 6 days. (110\$ x 6days x 45 participants) + (3 workshop/training x 6days x 125\$ meeting hall). Calculation: unit cost \$ 32,000 x 1 = \$ 32,000. Output 1.4, Activity 1.4.2: Strengthening the Capacity of relevant officials from learning institutions to be hosting training programs, including training of trainers Item: Training, workshops and travel build the capacity of officials from governments, private, CSOs in the climate/urban resilience component: 5 trainings (DaysXNo.of participantsXTADA) Year 1 = 12 staff will attend training/workshop/travel for 7 days. Year 2 = 12 staff will attend training/workshop/travel for 7 days. Year 3 = 12 staff will attend training/workshop/travel for 7 days. Year 4 = 12 staff will attend training/workshop/travel for 7 days. Year 5 = 12 staff will attend training/workshop/travel for 7 days. (110\$ x 7days x 60 participants) + (5 workshop/training x 7days x 125\$ meeting hall). Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
Total		\$247,235

3.3.2 Budget breakdown for 1.4.1.3

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$95,000
	Description Output 1.4, Activity 1.4.2: Implementation of courses in training institutes and colleges Item: Equipment and furniture for the laboratories. Calculation: unit cost \$ 60,000 x 1 = \$ 60,000 Output 1.4, Activity 1.4.2: Implementation of courses in training institutes and colleges Item: Procurement of materials and goods for lab. Calculation: unit cost \$ 35,000 x 1 = \$ 35,000	
2	Contractual services-Company	\$185,000
	Description Output 1.4, Activity 1.4.2: Implementation of courses in training institutes and colleges Item: Procurement of study material to equip the programmes and computer software to deliver the modules. Calculation: unit cost \$ 25,000 x 1 = \$ 25,000 Output 1.4, Activity 1.4.2: Implementation of courses in training institutes and colleges Item: Contractual services- development of lab for urban climate resilience related modules (2 labs) Calculation: unit cost \$ 120,000 x 1 = \$ 120,000 Output 1.4, Activity 1.4.2: Implementation of courses in training institutes and colleges Item: Contractual services -companies to develop state-of-the art prototype development for students. Calculation: unit cost \$ 40,000 x 1 = \$ 40,000	
3	Training, Workshops, Meetings	\$20,000
	Description Output 1.4, Activity 1.4.2: Implementation of courses in training institutes and colleges Item: Training and Workshops/travel for lab related activities: 4 trainings (DaysXNo.of participantsXTADA) Year 2 = 6 staff will attend training/workshop/travel for 6 days. Year 3 = 6 staff will attend training/workshop/travel for 6 days. Year 4 = 7 staff will attend training/workshop/travel for 6 days. Year 5 = 7 staff will attend training/workshop/travel for 6 days. (110\$ x 7days x 26 participants) + (4 workshop/training x 6days x 125\$ meeting hall). Calculation: unit cost \$ 20,000 x 1 = \$ 20,000	
Total		\$300,000



Chapter V

Embracing Every Voice

4. DECC-MoENR

4.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.3.1.1	Conduct gender analysis and RVA	\$94,000			1 yr	1 yr	1 yr	1 yr																		
2	1.3.1.2	Create participatory gender-responsive plans	\$236,000					1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr														
Total			\$330,000																								



4.2.1 Activity Brief for 1.3.1.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.1.1
Activity Name (As stated in ProDoc)	1.3.1.1 Development of Gender Analysis and Risk & Vulnerability Assessment (RVA) as a Basis for Plans.
Location	Paro and Thimphu
Expected start date	30 August 2025
Completion date	30 November 2025
Approved budget	USD 94,000 Nu. 7,812,340
Responsible Parties	DECC-MoENR
Focal Person	Pem Dorji Tamang, Env. Officer, pdtamang@moenr.gov.bt, 77763673
ACTIVITY DETAILS	
Activity Background	The launch of climate-resilient, gender-responsive adaptation planning in Thimphu and Paro tackles increasing climate vulnerabilities. These urban areas face flash floods, landslides, erratic rainfall, water scarcity, and rising temperatures due to unplanned growth into sensitive zones. Women, girls, and marginalized groups disproportionately bear climate risks yet remain underrepresented in planning. This initiative builds a critical knowledge base on these differentiated vulnerabilities, forming the foundation for inclusive future adaptation plans that align with Bhutan's national climate policies and international commitments.
Activity Description	This activity will undertake a thorough gender analysis and RVA in Thimphu and Paro, providing data-driven insights into how climate risks, exposure, and adaptive capacity vary between and within communities. The assessment will combine desk review with field-based participatory approaches, consulting key stakeholders—including women, youth, persons with disabilities, and senior citizens. The final output will present actionable findings, guiding the integration of inclusion and resilience into subsequent adaptation planning while building institutional capacity for gender-responsive risk assessment.
Objectives	1. Identify and analyze differential vulnerabilities to climate risks by gender and social group. 2. Provide actionable recommendations for mainstreaming gender and vulnerability perspectives into adaptation planning. 3. Strengthen local and national capacity for evidence-based, inclusive climate risk assessment.
Scope	Inclusion: • Desk and field-based RVA and gender analysis (Thimphu and Paro) • Stakeholder mapping and consultations, including women, youth, persons with disabilities, the elderly • Data analysis and synthesis (including climate trends, exposure, sensitivity, adaptive capacity) • Preparation of a comprehensive RVA and Gender Assessment Report • Initial validation workshop(s) for stakeholder review Exclusion: • Implementation of recommendations • Drafting of full adaptation plans (handled in next activity)

Key requirements	• Hiring of a competent national consultant to lead assessments • Leadership and coordination from DECC • Access to disaggregated data and ongoing/completed Infrastructure Plans • Logistical support for workshops and fieldwork
Expected benefits	• Evidence base for gender-responsive, climate-resilient adaptation planning. • Empower women, youth, disabled, seniors in climate risk identification. • Improve compliance with ECRUL gender, equity, climate goals. • Strengthen institutional capacity for inclusive, resilient urban development • Beneficiaries: All residents of Thimphu and Paro, with focus on women, youth, persons with disabilities, and vulnerable groups.
Key milestones	• 15 August 2025: National consultant onboarded • 15 October 2025: Zero draft of RVA and Gender Assessment completed • 25 October 2025: Validation workshop conducted
Activity Risks	Risk 1: Non-availability of a qualified consultant Mitigation: Begin recruitment early, use multiple platforms Risk 2: Delays in data collection or community participation Mitigation: Engage local partners, plan for flexible schedules
Activity EXIT criteria	1. Comprehensive RVA and Gender Assessment Report delivered, validated, and disseminated 2. Report accepted by DECC and all comments from stakeholders (UNDP, NCWC, PMU and others) addressed
Prepared by	Pem Dorji Tamang, Env. Officer, Submitted on June 15, 2025

4.2.2 Activity Brief for 1.3.1.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.1.2
Activity Name (As stated in ProDoc)	1.3.1.2 Development of Gender-Responsive Adaptation Plans for Thimphu and Paro, in a Participatory Manner
Location	Paro and Thimphu
Expected start date	30 October 2025
Completion date	28 February 2026
Approved budget	USD 236,000 Nu. 19,613,960
Responsible Parties	DECC-MoENR
Focal Person	Pem Dorji Tamang, Env. Officer, pdtamang@moenr.gov.bt, 77763673
ACTIVITY DETAILS	
Activity Background	Following the comprehensive gender analysis and Risk & Vulnerability Assessment (RVA) in Thimphu and Paro, there is an urgent need to operationalize the findings through actionable, inclusive, and locally driven adaptation plans. Both districts face escalating climate threats and social challenges heightened by unplanned urbanization. Bridging the gap between data and action, this activity builds on national and international commitments—including the Paris Agreement—to ensure these plans actively involve and benefit those most affected by climate risks, particularly women and marginalized groups.
Activity Description	This activity will develop climate-resilient, gender-responsive adaptation plans for Thimphu and Paro by engaging a broad cross-section of local stakeholders in participatory planning workshops and consultations. The process will use the findings of the preceding RVA and gender assessment to identify and prioritize strategic adaptation interventions that target the diverse needs and strengths of all community groups. The output will be actionable adaptation plans, aligned with national climate strategies, that foster community ownership, strengthen governance, and enable access to climate finance and technical support for inclusive urban development.
Objectives	1. Translate RVA and gender assessment findings into effective adaptation strategies 2. Facilitate inclusive, participatory planning processes involving all relevant community members 3. Produce actionable, nationally aligned adaptation plans that support sustainable, equitable urban resilience
Scope	Inclusion: • Stakeholder meetings and participatory planning workshops in Thimphu and Paro • Prioritization of adaptation interventions based on completed RVA • Drafting and revision of adaptation plan documents • Validation workshops and broad-based consultations (including gender and social inclusion focus) • Plan submission to DECC and PSC Exclusion: • Implementation or construction of adaptation measures • Additional RVA or gender analysis

Key requirements	• Completion and full integration of previous RVA findings • Expertise in gender-mainstreamed adaptation planning • Logistical support for workshops and consultations • Leadership from DECC; inclusive involvement of government, civil society, and community representatives
Expected benefits	• Roadmap for climate-resilient, inclusive urban adaptation in Thimphu, Paro. • Increased ownership by women, girls, vulnerable groups in planning. • Mainstream gender and social equity in local adaptation governance • Beneficiaries: urban residents, women, youth, disabled, seniors, local bodies
Key milestones	• 1 November 2025: Consultant continues or commences adaptation planning • 15 December 2025: Zero draft adaptation plans completed • 30 December 2025: Validation workshop for adaptation plans • 15 January 2026: Stakeholder consultations completed • 28 February 2026: DECC approval and submission to PSC
Activity Risks	Risk 1: Delays due to extensive consensus-building required Mitigation: Early stakeholder mapping, clear communication of timeline Risk 2: Low community participation Mitigation: Pursue partnerships with local organizations and community leaders
Activity EXIT criteria	1. Climate-resilient and gender-responsive adaptation plans for Thimphu and Paro completed, validated, and submitted to DECC and PSC 2. All stakeholder feedback addressed and documented
Prepared by	Pem Dorji Tamang, Env. Officer, Submitted on June 15, 2025

4.3.1 Budget breakdown for 1.3.1.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$54,000
	Description Output 1.3, Activity 1.3.1: Development of RVA and gender assessment as a basis for plans Item: Hiring a national consultant to carry out vulnerability assessment/analysis. Calculation: unit cost \$ 450 x 120 = \$ 54,000	
2	Training, Workshops, Meetings	\$26,000
	Description Output 1.3, Activity 1.3.1: Development of RVA and gender assessment as a basis for plans. Item: Consultation meetings/ workshop: 4 workshops, approximate costs: 35 people, 3 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 6,500 x 4 = \$ 26,000	
3	Travel	\$14,000
	Description Output 1.3, Activity 1.3.1: Development of RVA and gender assessment as a basis for plans. Item: Travel: Approx. costs - 30 people x \$39 x 3 days. Calculation: unit cost \$ 3,500 x 4 = \$ 14,000	
Total		\$94,000

4.3.2 Budget breakdown for 1.3.1.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$14,400
	Description Output 1.3, Activity 1.3.1: Development of gender-responsive adaptation plans for Thimphu and Paro, in participatory manner. Item: Tuition fee. Calculation: unit cost \$ 14,400 x 1 = \$ 14,400	
2	Local Consultants	\$80,000
	Description Output 1.3, Activity 1.3.1: Development of gender-responsive adaptation plans for Thimphu and Paro, in participatory manner. Item: Hiring a national consultant to carry out gender assessment/analysis. Calculation: unit cost \$ 450 x 178 = \$ 80,000	
3	Training, Workshops, Meetings	\$65,000
	Description Output 1.3, Activity 1.3.1: Development of gender-responsive adaptation plans for Thimphu and Paro, in participatory manner. Item: Consultation meetings/ workshop: 4 workshops, approximate costs: 50 people, 3 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 10,833 x 6 = \$ 65,000	

4	Travel	\$76,600
	Description Output 1.3, Activity 1.3.1: Development of gender-responsive adaptation plans for Thimphu and Paro, in participatory manner. Item: Travel: Approx. costs - 50 people x \$39 x 3 days. Calculation: unit cost \$ 5,833 x 6 = \$ 35,000. Output 1.3, Activity 1.3.1: Development of gender-responsive adaptation plans for Thimphu and Paro, in participatory manner. Item: Training of Environment officers on gender responsive adaptation planning and implementation - ex country travel; Approx. costs - 10 days x 220 (DSA) x 8 participants + Air Fare (\$ 3000 per head). Calculation: unit cost \$ 41,600 x 1 = \$ 41,600	
Total		\$236,000

5. PMU, DHS-MoIT

5.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																									
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4		
1	1.3.2.1	Design inclusive NbS community plans	\$90,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr											
Total			\$90,000																										

5.2.1 Activity Brief for 1.3.2.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.2.1
Activity Name (As stated in ProDoc)	1.3.2.1 Gender Responsive and Inclusive Community Development Plans for Nature-based
Location	Paro and Thimphu
Expected start date	February 2026
Completion date	April 2026
Approved budget	USD 90,000 Nu. 7,479,900
Responsible Parties	PMU-ECRUL in collaboration with NCWC, DECC, relevant NGOs, local communities
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	This activity is initiated to promote equitable participation and leadership of women and marginalized groups in NbS-related community development. Despite increasing recognition of NbS as a strategy for climate resilience, gender gaps persist in decision-making processes due to structural and social barriers. Building on the participatory outcomes of Activity 1.3.1.2, which developed gender-responsive adaptation plans for Thimphu and Paro, this activity aims to advance inclusive community planning to ensure NbS initiatives are effectively designed and implemented with gender equity at their core.
Activity Description	The activity focuses on the development of gender-responsive and inclusive community development plans that integrate NbS to address climate resilience and sustainability. It seeks to identify and remove barriers that limit full and meaningful participation of women and marginalized groups in NbS planning and decision-making processes. National consultants will facilitate participatory workshops and consultations with diverse stakeholders, ensuring perspectives from all genders and social groups are incorporated. The activity will result in comprehensive gender-sensitive NbS community plans, along with printed communication materials designed to enhance awareness and engagement. This approach promotes community ownership and sustainability of NbS interventions, fostering an enabling environment for equitable decision-making across targeted communities.
Objectives	1. Raise awareness on gender and climate-related laws of Bhutan. 2. Develop gender-responsive NbS community development plans that enhance inclusive decision-making and leadership. 3. Identify and address systemic and social barriers limiting women’s and marginalized groups’ participation in NbS initiatives. 4. Produce and disseminate gender-sensitive printed materials to support community understanding, dialogue, and engagement in NbS planning

Scope	Inclusion: • Participatory consultations with women, men, and marginalized groups at community levels. • Development of comprehensive gender-responsive NbS community development plans. • Addressing a broad set of social, cultural, and institutional barriers to inclusive participation. • Preparation and printing of gender-responsive plans and supporting communication materials. • Engagement of national consultants (30 days) for plan development and facilitation. Exclusion: • Implementation of physical NbS infrastructure (covered under separate infrastructure activities). • Direct funding or provision of social services.
Key requirements	• Expertise in gender-responsive planning and community engagement for NbS. • Close coordination with DECC, NCWC, NGOs and local communities. • Inclusive consultation mechanisms accommodating diverse community members. • Resources for printing and distribution of gender-sensitive materials. • Access to research and findings from Activity 1.3.1.2 to maintain continuity.
Expected benefits	• Increased and sustained participation of women and marginalized groups in NbS decision-making. • Enhanced community ownership and legitimacy of NbS initiatives through inclusive planning. • Strengthened capacity to address gender inequalities within climate adaptation frameworks. • Contributions to ECRUL Project goals on gender equality, social inclusion, and climate resilience. • Beneficiaries: Women, men, and marginalized groups within NbS-targeted communities, aligned with mandatory ECRUL Project gender and participation indicators.
Key milestones	• January 2026: Drafting of TOR for consultant • February 2026: Mobilization of national consultants and initiation of stakeholder engagement. • March 2026: Completion of draft gender-responsive NbS community development plans. • April 2026: Final printing, dissemination, and validation of plans.
Activity Risks	Risk 1: Persistent social norms limiting women's participation Mitigation: Employ targeted outreach, sensitization campaigns, and inclusive facilitation techniques. Risk 2: Delays in production of gender-responsive climate adaptation plans by DECC. Mitigation: Continuous monitoring to ensure timely production of final plan by DECC. Risk 3: Limited stakeholder buy-in or engagement Mitigation: Ensure continuous communication, transparency, and participatory processes.

Activity EXIT criteria	1. Completion and community validation of gender-responsive NbS community development plans 2. Successful printing and distribution of gender-inclusive materials to targeted communities 3. Documented evidence of enhanced engagement and participation of women and marginalized groups in NbS planning 4. Full alignment with the outcomes and lessons from Activity 1.3.1.2 led by DECC-MoENR
Prepared by	Tashi Dorji P, Project Manager, Submitted on August 8, 2025

5.3.1 Budget breakdown for 1.3.2.1

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$40,000
	Description Output 1.3, Activity 1.3.2: Interventions to address barriers to women's participation in Nbs and decision making Item: Gender responsive and inclusive action plans to address barriers to women's participation in Nbs and decision making: print materials and supplies for the gender responsive plans. Calculation: unit cost \$ 40,000 x 1 = \$ 40,000	
2	Local Consultants	\$13,500
	Description Output 1.3, Activity 1.3.2: Gender inclusive community development plans for NbS to address gender barriers in decision-making through addressing child care burden. Item: National consultant (individual). Calculation: unit cost \$ 450 x 30 = \$ 13,500	
3	Training, Workshops, Meetings	\$24,000
	Description Output 1.3, Activity 1.3.2: Interventions to address barriers to women's participation in Nbs and decision making Item: Workshops and community engagement: 4 workshops, approximate costs: 32 people, 2 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 6,000 x 4 = \$ 24,000	
4	Travel	\$12,500
	Description Output 1.3, Activity 1.3.2: Interventions to address barriers to women's participation in Nbs and decision making Item: Travel: Approx. costs - 32 people x \$39 x 2 days. Calculation: unit cost \$ 3,125 x 4 = \$ 12,500 Output 1.3, Activity 1.3.2: Capacity building of relevant officers on climate change risk impacts on all vulnerable communities with inclusion of gender in NbS Item: Travel: Approx. costs - 45 people x \$39 x 4 days. Calculation: unit cost \$ 7,000 x 1 = \$ 7,000	
Total		\$90,000

6. NCWC-MoESD

6.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.3.2.2	Train officers on climate risk	\$20,000			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr											
Total			\$20,000																								



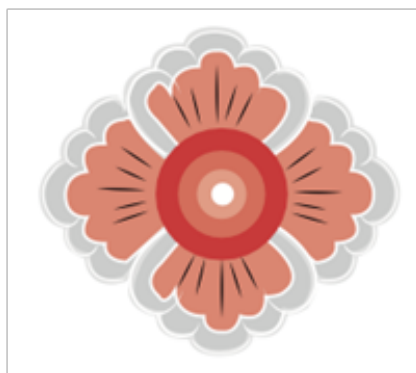
6.2 Activity Brief for 1.3.2.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.2.2
Activity Name (As stated in ProDoc)	1.3.2.2. Capacity building of relevant officers on climate change risk impacts on all vulnerable communities with inclusion of gender in NbS
Location	Paro and Thimphu
Expected start date	March to June 2026
Completion date	December 2026
Approved budget	USD 20,000 Nu. 1,662,200
Responsible Parties	WCD, NCWC-MoESD
Focal Person	Sonam Darjay, Program Assistant, sdarjay@ncwc.gov.bt, 77853641
ACTIVITY DETAILS	
Activity Background	This activity aims to enhance the capacity of officials in Paro and Thimphu, along with relevant partners (LGs, businesses, CSOs, etc.), on climate change impacts on vulnerable communities. It will integrate gender-inclusive NbS based on developed Gender Responsive and Inclusive Community Development Plans and GAP, addressing identified gaps and barriers in gender equality and women's empowerment.
Activity Description	This activity aims to enhance the capacity of officials in Paro and Thimphu, along with relevant partners (LGs, businesses, CSOs, etc.), on climate change impacts on vulnerable communities. It will integrate gender-inclusive NbS based on developed Gender Responsive and Inclusive Community Development Plans and GAP, addressing identified gaps and barriers in gender equality and women's empowerment.
Objectives	1. Equip participants with knowledge and skills related to climate resilience, NbS with gender-inclusive plans. 2. Enhance understanding of climate resilience and the adverse impact of climate change on vulnerable communities. 3. Impart knowledge on NbS and gender inclusivity in community development plans. 4. Create a platform for awareness and knowledge sharing on climate-resilient solutions for community development. 5. Raise awareness on gender and climate-related laws of Bhutan.
Scope	Inclusion: • Capacity development of relevant officials on climate change risk impact on vulnerable communities of Paro and Thimphu. • Engagement of officials from relevant agencies to discuss on the developed NbS plans Exclusion: • Direct infrastructure development projects • Capacity development beyond the communities of Paro and Thimphu.
Key requirements	• Climate and NbS Expert (local consultant ECRUL) • Gender Expert

Expected benefits	• Beneficiaries: 30-40 officials (gender-disaggregated data to be collected) from central, Dzongkhag, Thromde, LGs, and CSOs. • Enhanced understanding of Climate Change, NbS plans, and sustainable green solutions. • Enhanced understanding of gender inclusivity in Community development planning and budgeting. • Increased capacity of implementing partners on gender-responsive planning. • Meaningful participation of women in project activities.
Key milestones	March to December 2026: Capacity building workshops conducted on climate change impact on vulnerable communities.
Activity Risks	Risk 1: Difficulty in securing experts on environment law and legislation. Mitigation: Engagement with DECC or faculty of JSW School of Law for participation and facilitation of the session on environment laws in Bhutan. Risk 2: Onboarding of officials from relevant identified offices. Mitigation: Prior engagement with Paro and Thimphu Dzongkhag administration for collaboration.
Activity EXIT criteria	Success criteria: • Programme report completed. • Capacity building of 30 - 40 officials on climate change risk impact on vulnerable communities developed or engaged. • Workshop conducted in the communities of Thimphu and Paro.
Prepared by	Sonam Darjay, Program Assistant, Submitted on July 22, 2025

6.3 Budget breakdown for 1.3.2.2

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$13,000
	Description Output 1.3, Activity 1.3.2: Capacity building of relevant officers on climate change risk impacts on all vulnerable communities with inclusion of gender in NbS Item: Training and workshop-In-country and shareholder consultation. Calculation: unit cost \$ 13,000 x 1 = \$ 13,000	
2	Travel	\$7,000
	Description Output 1.3, Activity 1.3.2: Capacity building of relevant officers on climate change risk impacts on all vulnerable communities with inclusion of gender in NbS Item: Travel: Approx. costs - 45 people x \$39 x 4 days. Calculation: unit cost \$ 7,000 x 1 = \$ 7,000	
Total		\$20,000



Chapter VI

Greening the Economy

7. DMDF-MoF

7.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.5.1.1	Develop private sector engagement strategy	\$20,000			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr												
2	1.5.1.2	Integrate climate data into planning	\$40,000			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr												
3	1.5.1.3	Develop climate prosperity plan	\$40,000			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr												
4	1.5.3.2	Implement NbS with PPP model	\$100,000					3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr							
Total			\$200,000																								

7.2.1 Activity Brief for 1.5.1.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.1.1
Activity Name (As stated in ProDoc)	1.5.1.1 Assessment and demonstration of mechanisms to strengthen private sector engagement for NbS and urban resilience projects through the formulation of private sector engagement strategy
Location	National
Expected start date	1 March 2025
Completion date	31 December 2025
Approved budget	USD 20,000 Nu. 1,662,000
Responsible Parties	DCDMD, DMDF, MOF
Focal Person	Sangay Chojay, Program Officer, schojay@mof.gov.bt, 17555544
ACTIVITY DETAILS	
Activity Background	This sub-activity is initiated to address the limited involvement of the private sector in financing and implementing NbS and urban resilience initiatives, despite growing climate risks. Investment in these areas continues to be largely driven by the public sector. To bridge this gap, the activity will assess key barriers and opportunities for private sector engagement and develop a strategy to integrate private investment and partnerships into climate resilience efforts. By mobilizing private capital, fostering innovation, and promoting collaborative action, the initiative seeks to accelerate sustainable, climate-resilient urban development and strengthen the overall response to climate change.
Activity Description	This sub-activity focuses on assessing existing mechanisms and identifying practical pathways to strengthen private sector engagement in NbS and urban resilience projects. It includes stakeholder consultations to understand challenges and opportunities, and the development of a Private Sector Engagement Strategy that aligns business interests with climate resilience goals. The strategy will demonstrate mechanisms to mobilize private capital and foster partnerships critical for sustainable urban development.
Objectives	1. Identify barriers and opportunities for private sector participation in NbS and urban resilience initiatives. 2. Develop a Private Sector Engagement Strategy tailored to mobilize private investment and partnerships. 3. Facilitate stakeholder consultations to ensure inclusive strategy formulation.
Scope	Inclusion: • Assessment of private sector roles and challenges in NbS and urban resilience • Stakeholder consultations and engagement • Development of private sector engagement mechanisms • Capacity building session on private sector engagement strategy Exclusion: • Development of financing instruments beyond strategy formulation • Capacity building on financing mechanisms (covered under 1.5.1.3)

Key requirements	• Expertise in private sector engagement and climate finance • Consultant to conduct assessments and develop strategy • Coordination with stakeholders across government and private sectors • Access to relevant data and reports
Expected benefits	• Women, youth, persons with disabilities, and senior citizens benefit indirectly through enhanced urban resilience • Private sector representatives gain clear engagement pathways and incentives • LG officials receive strategic guidance for private sector collaboration
Key milestones	• September, 2025: Hiring of consultant • October 2025: Completion of stakeholder consultations and initial assessment report • November 2025: Draft Private Sector Engagement Strategy developed • December 2025: Final strategy endorsed • August 2026: dissemination of the strategy
Activity Risks	Risk 1: Low private sector interest. Mitigation: Designing clear incentives and demonstrating business benefits Risk 2: Limited stakeholder coordination Mitigation: Establishing communication platforms and regular engagement Risk 3: Data gaps Mitigation: Leveraging multiple data sources and expert inputs
Activity EXIT criteria	1. Private Sector Engagement Strategy finalized and endorsed 2. Stakeholder feedback incorporated and documented
Prepared by	Sangay Chojay, Program Officer, Submitted on June 5, 2025

7.2.2 Activity Brief for 1.5.1.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.1.2
Activity Name (As stated in ProDoc)	Climate and early warning information with macro-economic projections to inform climate adaptation efforts within fiscal planning
Location	National
Expected start date	1 May 2025
Completion date	12 December 2027
Approved budget	USD 40,000 Nu. 3,324,400
Responsible Parties	MFPD, DMDF- MoF
Focal Person	Chimi Dema, Program Officer, chimid@mof.gov.bt, 17435843
ACTIVITY DETAILS	
Activity Background	Currently, macroeconomic projections do not account climate change impacts, resulting in fiscal plans that overlook climate-related risks and costs. This activity is initiated to integrate climate and early warning information into macroeconomic projections/simulations, ensuring that climate adaptation efforts are reflected in fiscal planning. This approach will enhance the resilience of medium- and long-term economic plans by accounting for climate change impacts on public finance and GDP projections.
Activity Description	This activity aims to revise the existing macroeconomic projection framework used by DMDF to embed climate change data and impacts. The updated framework will be applied to to enable scenario-based simulations to assess the macroeconomic impacts of climate change. To ensure sustainability, an international expert will be recruited to develop the framework and conduct workshops to build capacity for integrating climate data into the macroeconomic framework. Additionally, necessary equipment will be procured to support advanced macroeconomic analysis, simulations and projections incorporating climate data.
Objectives	1. Develop a model that enables scenario based simulations to assess the macroeconomic impacts of climates change 2. Build the capacity of DMDF officials to to conduct scenario based analysis to assess macroeconomic impacts
Scope	Inclusion: • Recruitment of an international expert to lead framework development. • Conduct workshops to build capacity and train DMDF officials on climate-informed macroeconomic analysis • Procurement of analytical equipment to support the scenario analysis Exclusion: • Implementation of climate adaptation measures beyond fiscal planning. • Data collection for climate variables (assumed to be provided by other agencies).
Key Requirements	• Timely recruitment of qualified international experts within the approved budget. • Availability of necessary climate data and collaboration with relevant agencies.

Expected benefits	• Capacity building for seven DMDF officials, enhancing national expertise in climate-informed fiscal planning. • Integration of climate data into national macroeconomic projections/analysis, benefiting all sectors through improved fiscal resilience.
Key milestones	• June 2025: Procurement of first batch of equipment • December 2026: Completion of framework development and expert-led incorporation of climate data into macroeconomic projections
Activity Risks	Risk 1: Unavailability of suitable experts within the allocated budget. Mitigation: Early recruitment process and potential budget reallocation or supplementary funding.
Activity EXIT criteria	1. Climate data are introduced into macroeconomic framework 2. The framework is used to support fiscal, trade, and environmental policy analysis through scenario-based simulations.
Prepared by	Chimi Dema, Program Officer, Submitted on May 28, 2025

7.2.3 Activity Brief for 1.5.1.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.1.3
Activity Name (As stated in ProDoc)	1.5.1.3 Development of and capacitation on Climate Prosperity Plan (CPP) to strategize climate change related (NbS and Urban Resilience) innovative financing mechanisms
Location	National
Expected start date	1 March 2025
Completion date	31 December 2025
Approved budget	USD 40,000 Nu. 3,324,000
Responsible Parties	DCDMD, DMDF, MOF
Focal Person	Sangay Chojay, Program Officer, schojay@mof.gov.bt, 17555544
ACTIVITY DETAILS	
Activity Background	To attract climate-related investments and promote green growth, there is a need for a strategic framework that integrates innovative financing mechanisms for NbS and urban resilience. This sub-activity supports the development and capacity building around the CPP, which will facilitate sustainable financing approaches aligned with climate adaptation and mitigation goals.
Activity Description	This sub-activity entails developing the CPP as a strategic framework to mobilize innovative financing tools such as blended finance, green bonds, and public-private partnerships for climate-resilient development. It includes capacity-building sessions to equip government and private sector stakeholders with the knowledge and skills to implement the CPP effectively. The CPP aims to catalyze private sector investment and promote sustainable urban resilience through NbS.
Objectives	1. Develop a CPP incorporating innovative climate financing mechanisms. 2. Build capacity among key stakeholders to implement the CPP and related financing strategies. 3. Promote green growth and climate resilience through strategic investment frameworks.
Scope	Inclusion: • Development of the CPP document and strategic framework • Capacity-building workshops and training sessions on innovative financing • Integration of private sector engagement strategy within CPP Exclusion: • Direct financing or investment disbursement • Assessment of private sector engagement barriers (covered under 1.5.1.1)
Key requirements	• Experts in climate finance and innovative financing mechanisms • Facilitators for capacity-building sessions • Coordination with government and private sector stakeholders • Access to relevant data and institutional support

Expected benefits	• Women, youth, persons with disabilities, and senior citizens benefit from improved climate resilience and green growth opportunities • Private sector representatives gain knowledge and tools for climate-related investment • LG officials enhance their capacity to implement climate financing strategies
Key milestones	• June 2025: Capacity-building training on CPP conducted • October 2025: Draft CPP updated based on training feedback • November 2025: Final CPP document completed and endorsed
Activity Risks	Risk 1: Limited stakeholder engagement Mitigation: Inclusive training and communication Risk 2: Insufficient expertise in innovative financing Mitigation: Engaging technical experts and consultants Risk 3: Data and resource constraints Mitigation: Leveraging multiple sources and institutional support
Activity EXIT criteria	1. CPP finalized, endorsed, and disseminated 2. Capacity-building activities completed with active stakeholder participation 3. Implementation roadmap for CPP established
Prepared by	Sangay Chojay, Program Officer, Submitted on June 05, 2025

7.2.4 Activity Brief for 1.5.3.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.3.2
Activity Name (As stated in ProDoc)	1.5.3.2 Support assessment and implementation of NbS interventions for urban resilience under Green Taxonomy and Sustainable Financing Framework exploring the PPP model.
Location	National (with specific focus on Thimphu city for water source management)
Expected start date	January 2026
Completion date	December 2026
Approved budget	USD 100,000 Nu. 8,311,000
Responsible Parties	DCDMD, DMDF-MoF and RMA
Focal Person	Yeshi Lhendup, Sr. Program Officer, yeshilhendup@mof.gov.bt, 17918921
ACTIVITY DETAILS	
Activity Background	This activity addresses challenges in urban climate resilience by promoting NbS within the Green Taxonomy and Sustainable Financing Framework. Urban resilience planning is currently limited by low integration of NbS, minimal engagement with private and financial sectors, and reliance on traditional grey infrastructure. Leveraging NbS can enhance urban climate adaptation, promote sustainable urban development, and mobilize innovative financing mechanisms such as PPP.
Activity Description	The activity focuses on supporting conservation efforts in catchment areas of urban water sources and fostering collaboration with communities managing these resources. It includes advocacy and public engagement in urban areas, consultation with private sector entities, and capacity building for stakeholders to align objectives around NbS initiatives. A key focus is exploring Payment for Ecosystem Services (PES) under the Green Financing Taxonomy as a sustainable financial mechanism, particularly through PPP or private initiatives motivated by community interest in consistent water services. This aligns with NbS goals of preserving pristine environments while enhancing government resource mobilization.
Objectives	1. Assess the potential for implementing PES mechanisms in urban settings 2. Conduct comparative analysis between current billing systems and proposed PES mechanisms 3. Develop strategic recommendations for implementing PES and NbS under the Green Taxonomy framework
Scope	Inclusion: • Assessment and support of NbS interventions including PES within Thimphu city, focusing on water sources managed by communities and municipal authorities (Thromde) Exclusion: • Interventions outside urban settings and outside the scope of water resource management

Key requirements	• Strong collaboration and advocacy with communities and private sector stakeholders • Technical capacity building for relevant government and community actors • Development of actionable recommendations for MoF and Thromde on PES initiatives
Expected benefits	• Enhanced urban resilience benefiting all citizens regardless of gender, age, or occupation • Improved sustainability of water resource management through NbS • Mobilization of innovative financing streams supporting green infrastructure and conservation efforts
Key milestones	• Mid-2026: Completion of PES potentiality assessment and comparative analysis • End-2026: Submission of strategic recommendations to MoF and Thromde
Activity Risks	Risk 1: Limited community understanding of PES concepts Mitigation: Focused advocacy and capacity building programs to increase awareness and engagement
Activity EXIT criteria	1. PES mechanism assessed, endorsed, and approved by MoF, Thromde, and communities. 2. Stakeholder capacity built; community and private sector show strong commitment to PES initiatives. 3. Clear implementation plans and agreements established for PES under Green Taxonomy framework.
Prepared by	Yeshe Lhendup, Sr. Program Officer, Submitted on August 11, 2025

7.3.1 Budget breakdown for 1.5.1.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$10,000
	Description Output 1.5, Activity 1.5.1: Assessment and demonstration of mechanisms to strengthen Private Sector engagement for NbS and Urban Resilience projects Item: Local Consultant. Calculation: unit cost \$ 450 x 22 = \$ 10,000	
2	Training, Workshops, Meetings	\$10,000
	Description Output 1.5, Activity 1.5.1: Assessment and demonstration of mechanisms to strengthen Private Sector engagement for NbS and Urban Resilience projects Item: Training/Workshop: 1 workshop x 3 days x 110 (DSA, food and lodging) x 30 participants + (hall charge 125x 3 days). Calculation: unit cost \$ 10,000 x 1 = \$ 10,000	
Total		\$20,000

7.3.2 Budget breakdown for 1.5.1.2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$15,000
	Description Output 1.5, Activity 1.5.1: Weather Forecast into Macro-economic and other projections for Climate Adaptation in the fiscal projection Item: Procurement of materials and goods for data processing and analysis, software and licenses. Calculation: unit cost \$ 15,000 x 1 = \$ 15,000	
2	International Consultants	\$20,000
	Description Output 1.5, Activity 1.5.1: Weather Forecast into Macro-economic and other projections for Climate Adaptation in the fiscal projection Item: International Consultant. Calculation: unit cost \$ 450 x 44.44 = \$ 20,000	
3	Travel	\$5,000
	Description Output 1.5, Activity 1.5.1: Weather Forecast into Macro-economic and other projections for Climate Adaptation in the fiscal projection Item: Training/workshop: 1 workshop x 3 days x 110 (DSA, food and lodging) x 15 participants + (hall charge 125x 3 days). Calculation: unit cost \$ 5,000 x 1 = \$ 5,000	
Total		\$40,000

7.3.3 Budget breakdown for 1.5.1.3

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$15,000
	Description Output 1.5, Activity 1.5.1: Development of and capacitation on Climate Prosperity Plan (CPP) to strategize climate change-related (NbS and Urban Resilience) innovative financing mechanisms Item: Procurement/ Equipment: training materials, software and license for macro-economic modelling (MATLAB, Mathematica). Calculation: unit cost \$ 15,000 x 1 = \$ 15,000	
2	Local Consultants	\$10,000
	Description Output 1.5, Activity 1.5.1: Development of and capacitation on Climate Prosperity Plan (CPP) to strategize climate change-related (NbS and Urban Resilience) innovative financing mechanisms Item: Local Consultant. Calculation: unit cost \$ 450 x 22 = \$ 10,000	
3	Training, Workshops, Meetings	\$15,000
	Description Output 1.5, Activity 1.5.1: Development of and capacitation on Climate Prosperity Plan (CPP) to strategize climate change-related (NbS and Urban Resilience) innovative financing mechanisms Item: Training/workshop: 1 workshop x 3 days x 110 (DSA, food and lodging) x 45 participants + (hall charge 125x 3 days). Calculation: unit cost \$ 15,000 x 1 = \$ 15,000	
Total		\$40,000

7.3.4 Budget breakdown for 1.5.3.2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$10,000
	Description Output 1.5, Activity 1.5.3: Support assessment and implementation of NbS interventions for urban resilience under Green Taxonomy and Sustainable Financing Framework exploring the PPP model. Item: Procurement/ Equipment. Calculation: unit cost \$ 10,000 x 1 = \$ 10,000	
2	Local Consultants	\$18,000
	Description Output 1.5, Activity 1.5.3: Support assessment and implementation of NbS interventions for urban resilience under Green Taxonomy and Sustainable Financing Framework exploring the PPP model Item: Local Consultant. Calculation: unit cost \$ 450 x 40 = \$ 18,000	

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3	Training, Workshops, Meetings	\$50,000
	Description Output 1.5, Activity 1.5.3: Support assessment and implementation of NbS interventions for urban resilience under Green Taxonomy and Sustainable Financing Framework exploring the PPP model. Item: Training/workshop: 3 workshop x 3 days x 110 (DSA, food and lodging) x 50 participants + hall charge 125x 3 days. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
4	Travel	\$22,000
	Description Output 1.5, Activity 1.5.3: Support assessment and implementation of NbS interventions for urban resilience under Green Taxonomy and Sustainable Financing Framework exploring the PPP model Item: Study tour travel. Calculation: unit cost \$ 22,000 x 1 = \$ 22,000	
Total		\$100,000

8. RMA

8.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.5.2.1	Assess and develop green finance policy	\$50,000					2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr												
2	1.5.2.2	Train financial institutions on green financing	\$50,000													2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr				
Total			\$100,000																								

8.2.1 Activity Brief for 1.5.2.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.2.1
Activity Name (As stated in ProDoc)	1.5.2.1 Assessment and development of policy supporting regulatory incentives for green financing for financial institutions.
Location	National
Expected start date	Q3, 2026
Completion date	Q4, 2027
Approved budget	USD 50,000 Nu. 4,155,500
Responsible Parties	RMA
Focal Person	Sam Tshewang, Sr. Analyst, stshewang@rma.org.bt, 17846266
ACTIVITY DETAILS	
Activity Background	An enabling policy framework incentivizing green finance within financial institutions is vital to mobilize green and sustainable investments. This sub-activity focuses on assessing the requirement of green finance policies and developing a regulatory framework adapted to the national context. It aligns with the Green Finance Roadmap and ESRM initiated by the RMA.
Activity Description	The sub-activity includes a review of existing policies and regulatory incentives, identification of gaps, and development of a strengthened policy framework for green finance targeted at financial institutions. Key outputs include green finance framework, Risk management and stress testing on climate change.
Objectives	1. Conduct/identify the need (regulatory framework for green finance) 2. Develop an actionable guideline/policy framework to financial institutions to participate in green finance.
Scope	Inclusion: • Comprehensive desk review of relevant policy and regulatory documents related to Green Finance. • Stakeholder engagement including MoF and financial institutions. • Development of a draft Green Finance guideline for supporting green finance. • Implementation or enforcement of the developed policy framework. Exclusion: • Capacity building or training of financial institutions (covered under separate sub-activity).
Key requirements	• Access to relevant policy documents. • Green taxonomy. • Expertise in green finance and regulatory framework design.
Expected benefits	• Established a Green Finance guideline/ framework for FIs to participate in green finance. • Increased engagement by financial institutions in green finance products.
Key milestones	• Q4, 2026: Preliminary planning and scoping • Q3, 2027: Draft guideline / framework prepared • Q4, 2027: Final submission

Activity Risks	Risk 1: Lack expertise in Green subject. Mitigation: Build the expert in the green subject within the department. Risk 2: No baseline green finance framework Mitigation: Refer to international and regional best practices. Risk 3: In absence of green products Mitigation: Develop the green products in collaboration with FIs. Risk 4: Insufficient data access for climate risk stress testing Mitigation: Engage with relevant agencies for data access and support.
Activity EXIT criteria	1. Approved Green Finance guideline/policy framework for implementation. 2. Ensure the framework is implemented and adhered to by the regulated entity.
Prepared by	Sam Tshewang, Sr. Analyst, Submitted on August 01, 2025

8.2.2 Activity Brief for 1.5.2.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.2.2
Activity Name (As stated in ProDoc)	1.5.2.2 Development and implementation of training package on Climate Stress Testing, NbS financing, Environmental and Social Risk Management (ESRM) for financial institutions
Location	National
Expected start date	1 January, 2027
Completion date	31 December, 2028
Approved budget	USD 50,000 Nu. 4,155,500
Responsible Parties	RMA in partnership with FIs
Focal Person	Sam Tshewang, Sr. Analyst, stshewang@rma.org.bt, 17846266
ACTIVITY DETAILS	
Activity Background	Financial institutions need enhanced capacities to incorporate climate-related risks and sustainable finance opportunities effectively. Training on climate stress testing, financing NbS, and ESRM is crucial for informed decision-making and risk mitigation aligning with global green finance standards.
Activity Description	This sub-activity entails developing a tailored training curriculum and materials, followed by delivering targeted workshops to financial sector professionals. The training will cover methodologies for climate stress testing, financing NbS projects, and integrating ESRM into financial decision processes. Post-training evaluation will assess knowledge gains and training effectiveness.
Objectives	1. Design and develop a comprehensive training package on green finance topics. 2. Build capacities of financial institution staff in implementing climate risk and environmental-social risk management tools.
Scope	Inclusion: • Training needs assessment targeting financial institution staff. • Development of curricula and training materials covering climate stress testing, NbS financing, and ESRM. • Organization and delivery of workshops from relevant financial institutions. • Provision of training equipment and logistical support. • Conduct of post-training evaluation to assess knowledge transfer and participant feedback. Exclusion: • Long-term capacity development beyond initial workshops. • Direct financing or grant disbursement to participating institutions. • Regulatory reforms or policy advocacy outside the training scope. • Technical assistance for implementation of training learnings within institutions.
Key requirements	• Subject matter experts in green finance and climate risk stress testing. • Identification and participation of appropriate participants. • Training venue and logistics arrangements.
Expected benefits	• Improved competencies in climate stress testing and ESRM. • Higher readiness of financial institutions to support green financing.

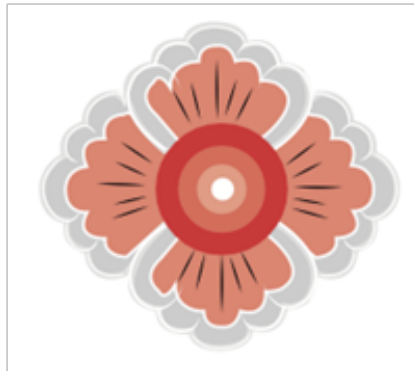
Key milestones	• Q3, 2027: Needs assessment completed • Q4, 2027: Training package finalized • Q2, 2028: Workshops delivered • Q3, 2028: Evaluation report submitted
Activity Risks	Risk 1: Trainer/participant availability issues. Mitigation: Identify and contract recognized subject matter experts early; consider hybrid or virtual training options to broaden expert participation Risk 2: Logistical challenges in workshop delivery. Mitigation: Engage institutional leadership to secure commitment; schedule training sessions at convenient times; highlight benefits and relevance of training content
Activity EXIT criteria	1. Training materials finalized and approved. 2. Successful completion of training workshops with positive participant outcomes.
Prepared by	Sam Tshewang, Sr. Analyst, Submitted on August 01, 2025

8.3.1 Budget breakdown for 1.5.2.1

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$10,000
	Description Output 1.5, Activity 1.5.2: Assessment and development of policy supporting incentive system for green financing for financial institutions. Item: Local Consultant. Calculation: unit cost \$ 450 x 22 = \$ 10,000	
2	Training, Workshops, Meetings	\$40,000
	Description Output 1.5, Activity 1.5.2: Assessment and development of policy supporting incentive system for green financing for financial institutions. Item: Meetings/Workshops: 2 workshops x 3 days x 110 (DSA, food and lodging) x 60 participants + (hall charge 125x 3 days). Calculation: unit cost \$ 40,000 x 1 = \$ 40,000	
Total		\$50,000

8.3.2 Budget breakdown for 1.5.2.2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$16,250
	Description Output 1.5, Activity 1.5.2: Development and implementation of training package on Climate Stress Testing, NbS financing, Environmental and Social Risk Management (ESRM) for financial institutions Item: Goods / equipment for training. Calculation: unit cost \$ 16,250 x 1 = \$ 16,250	
2	Training, Workshops, Meetings	\$33,750
	Description Output 1.5, Activity 1.5.2: Development and implementation of training package on Climate Stress Testing, NbS financing, Environmental and Social Risk Management (ESRM) for financial institutions Item: Meetings/workshops: 2 workshop x 3 days x 110 (DSA, food and lodging) x 50 participants + (hall charge 125x 3 days). Calculation: unit cost \$ 33,750 x 1 = \$ 33,750	
Total		\$50,000



Chapter VII

Championing Market-Driven NbS

9. DoEE-MoICE

9.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.3.3.1	Develop private sector engagement strategy	\$30,000			0.5 yr	0.5 yr																				
2	1.3.3.2	Enhance NbS entrepreneurial skills	\$150,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr								
3	1.3.3.3	Expand NbS accelerator program inclusivity	\$270,000			4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr				
4	1.3.3.4	Strengthen local NbS support mechanisms	\$550,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr							
Total			\$1,000,000																								

9.2.1 Activity Brief for 1.3.3.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.3.1
Activity Name (As stated in ProDoc)	Development of localized strategy for involvement of private sector (investment and entrepreneurs) in implementation of NbS and other adaptation actions.
Location	National
Expected start date	25 May 2025
Completion date	10 October 2025
Approved budget	USD 30,000 Nu. 2,493,000
Responsible Parties	Entrepreneurship Promotion Division, DoEE-MoICE
Focal Person	Chumo Wangmo, Chief Program Officer, chumowangmo@moice.gov.bt, 17297184
ACTIVITY DETAILS	
Activity Background	This activity is designed to develop a National Entrepreneurship Strategy (NES) that will strategically guide the involvement of the private sector—including investors and entrepreneurs—in implementing NbS and other climate adaptation actions. The NES will address existing gaps in private sector engagement, identify challenges and opportunities, and provide a coordinated framework for government agencies, entrepreneurship support organizations (ESOs), and stakeholders to promote green entrepreneurship as a driver for sustainable development.
Activity Description	The activity involves hiring a National Consultant to lead the development of the NES. The process will include a series of consultation workshops with diverse stakeholders at national, dzongkhag, and regional levels to ensure broad input and ownership. The consultant will draft the strategy, incorporating feedback from these workshops, and finalize the document for dissemination. The NES will outline policies, programs, and initiatives to promote private sector participation in adaptation actions, address barriers, and provide actionable recommendations for government and partners. The activity will culminate in the official release and dissemination of the strategy to all relevant stakeholders.
Objectives	1. Develop a comprehensive NES 2. Provide a framework for private sector engagement in NbS and adaptation actions

Scope	Inclusion: • Development of ToR for hiring a National Consultant • Tendering, evaluation, and awarding of consultancy contract • Organization and facilitation of consultation workshops with stakeholders at various administrative levels • Drafting, review, and finalization of the NES • Dissemination of the final strategy document Exclusion: • Direct implementation of NbS or adaptation projects • International consultancy or activities outside Bhutan
Key requirements	• Recruitment of a qualified National Consultant • Effective coordination and facilitation of stakeholder workshops • Timely drafting and finalization of the NES document
Expected benefits	• Enhanced capacity and strategic direction for private sector engagement in climate adaptation • Beneficiaries include government agencies, entrepreneurship support organizations, private sector actors, and all citizens of Bhutan, with attention to gender and inclusivity as per ECRUL Project objectives.
Key milestones	• 25 May 2025: Drafting of ToR • 10 June 2025: Hiring of Consultant • 20 June 2025: Work Plan and Workshop Schedule • Before 31 June 2025: First Draft of NES • 10 October 2025: Final Strategy Document
Activity Risks	No risk foreseen
Activity EXIT criteria	1. Submission and acceptance of the final NES by the DoEE-MoICE 2. Successful dissemination of the strategy to all key stakeholders
Prepared by	Chumo Wangmo, Chief Program Officer, Submitted on May 20, 2025

9.2.2 Activity Brief for 1.3.3.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.3.2
Activity Name	Upskilling of NbS entrepreneurship competencies for relevant officials
Location	Training will be conducted in Europe (Italy and Austria), countries recognized for their best practices in urban NbS entrepreneurship and sustainable urban development.
Expected start date	27 June 2025 (First cohort) Second cohort planned for Q1 2026
Completion date	10 July 2025 (First cohort)
Approved budget	USD 150,000 Nu. 12,466,500
Responsible Parties	Entrepreneurship Promotion Division, DoEE, MoICE
Focal Person	Chumo Wangmo, Chief Program Officer, chumowangmo@moice.gov.bt, 17297184
ACTIVITY DETAILS	
Activity Background	This activity is initiated to build the capacity of officials directly responsible for implementing ECRUL entrepreneurship initiatives. Early training is essential to equip them with a thorough understanding of NbS enterprise models, private sector engagement, and urban resilience strategies. Exposure to international best practices in Italy and Austria—leaders in NbS entrepreneurship, green infrastructure, and circular economy—will enable officials to adapt and apply successful approaches in Bhutan, strengthening institutional knowledge and supporting future NbS projects beyond the ECRUL timeline.
Activity Description	The activity involves a comprehensive training and exposure visit for relevant officials to enhance their competencies in NbS entrepreneurship. The program aims to: Provide foundational knowledge of NbS enterprises and their business models; Explore market opportunities and strategies for scaling green entrepreneurship; Facilitate field visits to successful NbS enterprises in Europe for practical insights; and Equip officials with tools to integrate NbS into urban resilience and climate adaptation policies. This hands-on experience will empower officials to foster innovation, develop supportive policies, and promote sustainable economic growth through NbS-driven entrepreneurship in Bhutan.
Objectives	1. Build capacity of relevant officials to effectively initiate and implement NbS entrepreneurship activities. 2. Enhance understanding of NbS business models and market dynamics. 3. Strengthen institutional frameworks to support green entrepreneurship and urban resilience.
Scope	Inclusion: • Training fees covering resource persons, venue, and materials. • Travel expenses and allowances for participating officials. • Study visits to NbS enterprises in Italy and Austria. Exclusion: • Follow-up activities post-training not covered under this activity. • Infrastructure or direct investment in NbS enterprises.

Key requirements	• Identification and engagement of expert trainers and suitable training venues. • Nomination and preparation of officials to attend the training. • Coordination of travel logistics and timely participation.
Expected benefits	• Upon completion, DoEE Officers will: • Gain expertise in fostering NbS entrepreneurship and innovation. • Understand NbS's role in sustainable economic growth and urban resilience. • Develop strategies to integrate NbS into policy and business ecosystems. • Identify opportunities for public-private partnerships in NbS-driven entrepreneurship. • Apply international best practices to Bhutan's contexts. • Strengthen local support mechanisms for scaling up NbS initiatives. • Beneficiaries: Relevant officials (gender inclusive) responsible for ECRUL entrepreneurship activities, contributing to project outcomes on capacity building and sustainable urban development.
Key milestones	• 8 July 2025: Completion of first cohort training • Q1 2026: Planning and execution of second cohort
Activity Risks	No risk foreseen
Activity EXIT criteria	1. Successful completion of the training program by nominated officials. 2. Demonstrated improved competencies in NbS entrepreneurship as evidenced by post-training assessments or reports.
Prepared by	Chumo Wangmo, Chief Program Officer, Submitted on May 20, 2025

9.2.3 Activity Brief for 1.3.3.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.3.3
Activity Name (As stated in ProDoc)	Enhancing NbS accelerator programme targeting community initiatives, youth, women, vulnerable populations, etc (including decision making opportunities)
Location	Bhutan
Expected start date	1 June 2025
Completion date	31 December 2030
Approved budget	USD 270,000 Nu. 22,439,700
Responsible Parties	Entrepreneurship Promotion Division, DoEE-MoICE
Focal Person	Chumo Wangmo, Chief Program Officer, chumowangmo@moice.gov.bt, 17297184
ACTIVITY DETAILS	
Activity Background	The NbS accelerator programme is initiated to address the challenges faced by early-stage entrepreneurs, particularly those from youth, women, and vulnerable groups. By providing targeted training, mentorship, and networking, the programme leverages opportunities to enhance startups' operational capacity and investment readiness, thereby accelerating their growth and sustainability.
Activity Description	This activity focuses on enhancing the capacity of entrepreneurs through a cohort-based accelerator programme. It will deliver structured knowledge-building sessions, critical skills training, one-on-one mentoring, and networking opportunities. The programme aims to support early-stage startups by addressing their operational and management challenges, improving investment readiness, and facilitating access to funding. Tailored interventions will be designed to empower aspiring entrepreneurs, especially from marginalized groups, to successfully launch and scale their ventures.
Objectives	1. Accelerate the growth and development of existing NbS entrepreneurs. 2. Develop entrepreneurial knowledge, skills, and capacity among aspiring NbS entrepreneurs 3. Promote inclusive participation of youth, women, and vulnerable populations in entrepreneurial activities.
Scope	Inclusion: • Training fees covering resource materials, venue charges, and related expenses. • Mentorship and networking sessions. • Outreach and awareness campaigns targeting marginalized groups. Exclusion: • Direct funding or seed capital for startups. • Infrastructure development or physical asset procurement.
Key requirements	• Identification and selection of participants, prioritizing youth, women, and vulnerable populations. • Development of training resources and methodology. • Securing qualified trainers, mentors, and suitable venues. • Implementation of training sessions and follow-up support.

Expected benefits	• Enhanced entrepreneurial skills and capacity among participants. • Increased participation and empowerment of women, youth, and PWDs in NbS entrepreneurship. • Accelerating of early-stage startups contributing to sustainable development.
Key milestones	• 30 June 2025: Participant identification and outreach completed • 31 July 2025: Training resources and methodology finalized • 30 September 2025: First cohort training delivered • 31 December 2025: Monitoring and evaluation of initial cohort outcomes
Activity Risks	Risk 1: Low participation due to limited awareness, especially among women and vulnerable groups. Mitigation: Targeted outreach campaigns and incentives such as financial support for caregiving (e.g., babysitting). Risk 2: Reluctance of entrepreneurs to engage fully in training. Mitigation: Continuous engagement and follow-up mentoring to sustain motivation.
Activity EXIT criteria	1. Completion of all planned training and mentoring sessions. 2. Demonstrated capacity development of participants through measurable outcomes (e.g., business setup, scaling). 3. Successful transition of entrepreneurs to independent business operations post-training.
Prepared by	Chumo Wangmo, Chief Program Officer, Submitted on May 20, 2025

9.2.4 Activity Brief for 1.3.3.4

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.3.3.4
Activity Name (As stated in ProDoc)	Strengthening localized support mechanisms for scaling-up entrepreneurship in NbS and adaptation practices for Thimphu and Paro
Location	Bhutan
Expected start date	1 June 2025
Completion date	31 December 2029
Approved budget	USD 550,000 Nu. 45,710,500
Responsible Parties	Entrepreneurship Promotion Division, DoEE, MoICE
Focal Person	Chumo Wangmo, Chief Program Officer, chumowangmo@moice.gov.bt, 17297184
ACTIVITY DETAILS	
Activity Background	Entrepreneurs in Bhutan, especially those engaged in NbS, often face significant barriers in accessing finance needed to purchase essential equipment. This limits their ability to operate efficiently and scale their businesses. This activity was initiated to address this challenge by providing targeted financial and technical support to entrepreneurs, thereby fostering innovation and sustainable economic growth in Thimphu, Paro and other districts.
Activity Description	This activity aims to strengthen localized support mechanisms by providing cost-shared equipment assistance and tailored Business Development Services (BDS) to NbS entrepreneurs at various stages—ideation, scale-up, and growth. The Department will cover 70% of the equipment and machinery costs, with entrepreneurs contributing the remaining 30%, however, the final cost sharing ratio will be guided by the finalized ToR and Guideline. A comprehensive ToR and guidelines will be developed to ensure transparent and effective implementation. Alongside equipment support, entrepreneurs will receive BDS interventions designed to enhance their business capabilities and market readiness, ultimately promoting sustainable entrepreneurship and adaptation practices in the targeted regions.
Objectives	1. Facilitating access to modern and efficient equipment for NbS entrepreneurs to enhance productivity and innovation. 2. Provide targeted BDS to support enterprise growth and sustainability. 3. Promote inclusive entrepreneurship by supporting women, youth, and PWDs in Thimphu and Paro.
Scope	Inclusion: • Provision of equipment support on a cost-sharing basis. • Delivery of Business Development Services tailored to entrepreneurs' needs. • NbS Entrepreneurs outside of Thimphu & Paro while major support will be given to entrepreneurs based in Thimphu & Paro • Identification and screening of eligible entrepreneurs. • Development of operational guidelines and ToR. Exclusion: • Full funding of equipment without entrepreneur contribution. • Support for businesses outside NbS

Key requirements	• Development of detailed guidelines and ToR for equipment support. • Identification and selection of eligible NbS entrepreneurs. • Assessment of specific equipment needs for each entrepreneur. • Procurement and distribution of equipment and machinery. • Delivery of tailored Business Development Services. • Collaboration with relevant agencies (e.g., SRBD, NHDC, SSPD-MoIT) for expert input on equipment needs.
Expected benefits	• Increased access to equipment improves NbS entrepreneurs' operations. • Enhanced capacity and growth for women, youth, and PWD entrepreneurs. • Strengthened local entrepreneurship ecosystems in Thimphu and Paro. • Promote sustainable, climate-adaptive business practices.
Key milestones	• 20 June 2025: Guidelines and ToR finalized • 30 June 2025: Entrepreneurs identified and screened • 30 August 2025: Procurement of equipment completed • Ongoing post-equipment distribution: Business Development Services rollout
Activity Risks	Risk 1: Limited ownership by entrepreneurs due to cost-sharing model may reduce commitment and scalability. Mitigation: Implement a rigorous screening process, continuous monitoring and evaluation, and provide comprehensive BDS to reinforce business growth and accountability.
Activity EXIT criteria	1. Successful provision of equipment and Business Development Services to targeted entrepreneurs. 2. Entrepreneurs have established or scaled their businesses using the support provided. 3. Ongoing M&E mechanisms are in place post-activity to track sustained impact.
Prepared by	Chumo Wangmo, Chief Program Officer, Submitted on May 20, 2025

9.3.1 Budget breakdown for 1.3.3.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$20,000
	Description Output 1.3, Activity 1.3.3: Development of localised strategy for involvement of private sector (investment and entrepreneurs) in implementation of NbS and other adaptation actions. Item: Local consultant for the development of strategy for involvement of the private sector. Calculation: unit cost \$ 450 x 44 = \$ 20,000	
2	Training, Workshops, Meetings	\$10,000
	Description Output 1.3, Activity 1.3.3: Development of localised strategy for involvement of private sector (investment and entrepreneurs) in implementation of NbS and other adaptation actions. Item: Workshops/meetings: 3 meetings, approximate costs: 15 people, 2 days @ \$110 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 10,000 x 1 = \$ 10,000	
Total		\$30,000

9.3.2 Budget breakdown for 1.3.3.2

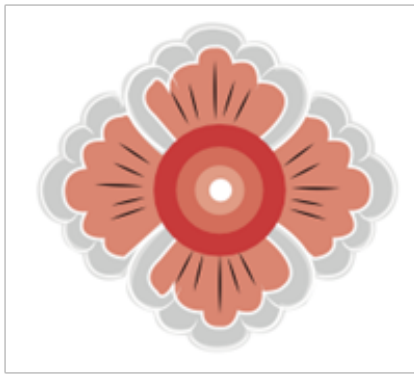
SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$75,000
	Description Output 1.3, Activity 1.3.3: Upskilling of NbS entrepreneurship competencies for relevant officials. Item: Training for upskilling of NbS entrepreneurship - tuition fees. Calculation: unit cost \$ 75,000 x 1 = \$ 75,000	
2	Travel	\$75,000
	Description Output 1.3, Activity 1.3.3: Upskilling of NbS entrepreneurship competencies for relevant officials. Item: Travel: 10 officials x 10 days x 200 (DSA)+2000 (airfare). Calculation: unit cost \$ 75,000 x 1 = \$ 75,000	
Total		\$150,000

9.3.3 Budget breakdown for 1.3.3.3

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$270,000
	Description Output 1.3, Activity 1.3.3: Enhancing NbS accelerator programme targeting community initiatives, youth, women, vulnerable populations, etc (including decision making opportunities). Item: Training on enhancing NbS for youth, women, vulnerable population: 100 participants x 300 (Y 1), 135 participants x 300 (Y 2), 165 participants x 300 (Y3), 100 participants x 300 (Y4). Calculation: unit cost \$ 300 x 500 = \$ 150,000 Output 1.3, Activity 1.3.3: Enhancing NbS accelerator programme targeting community initiatives, youth, women, vulnerable populations, etc (including decision making opportunities). Item: Workshops, awareness programs and promotional events: 500 people x 240. Calculation: unit cost \$ 240 x 500 = \$ 120,000	
Total		\$270,000

9.3.4 Budget breakdown for 1.3.3.4

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$550,000
	Description Output 1.3, Activity 1.3.3: Strengthening localised support mechanisms for scaling-up entrepreneurship in NbS and adaptation practices for Thimphu and Paro. Item: Equipment support and business development services: approx. 26,200 per entrepreneur, 21 entrepreneurs. Calculation: unit cost \$ 26,190 x 21 = \$ 550,000	
Total		\$550,000



Chapter VIII

Integrating Solutions for Water Security

10. DoW-MoENR

10.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.4.3.2	Train DoW officials on water resources management	\$120,000				3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr									
2	1.5.3.1	Implement NbS via PES scheme	\$120,000				4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr					
3	1.5.3.3	Assess water tariff system for sustainability	\$80,000											1 yr	1 yr	1 yr	1 yr										
4	2.2.2.2	Assess critical/degraded watersheds	\$22,875	1 yr	1 yr	1 yr	1 yr																				
5	2.2.2.3	Implement nature-based watershed/springshed revival interventions	\$445,250			5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr			
6	2.2.2.4	Develop Dzongkhag-level integrated water master plans	\$111,875											2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr					
Total			\$900,000																								

10.2.1 Activity Brief for 1.4.3.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.3.2
Activity Name (As stated in ProDoc)	Conduct training and capacity development of officials of DoW and stakeholders on climate-smart water resources management
Location	Ex-country and in-country
Expected start date	October, 2025
Completion date	December, 2028
Approved budget	USD 120,000 Nu. 9,973,200
Responsible Parties	DoW-MoENR
Focal Person	Kinzang Namgay, Dy. Chief Forestry Officer, kinzangn@moenr.gov.bt, 17505208
ACTIVITY DETAILS	
Activity Background	This activity is initiated under Output 1.4 of the ECRUL Project, which aims to introduce educational and training programmes for skilling, re-skilling, and upskilling planning professionals and the workforce. There is a recognized need to enhance the technical capacity of the DoW officials and stakeholders in climate-smart water resources management to address increasing climate variability and water-related challenges in Bhutan.
Activity Description	The activity will deliver targeted training and capacity development programmes for officials of the DoW and key stakeholders. The focus will be on climate-smart water resource management, emphasizing practical, context-specific skills and knowledge for planning, implementation, and adaptation. The training will leverage specialized institutions, both within and outside Bhutan, to ensure participants gain exposure to best practices and innovative approaches. The ultimate goal is to build a cadre of professionals equipped to mainstream climate resilience into water management policies and operations.
Objectives	1. Enhance technical capacity of the DoW officials and stakeholders on climate-smart water resources management and climate resilience. 2. Facilitate knowledge transfer of best practices and innovative approaches in water resource planning and management. 3. Foster inter-agency collaboration and networking among water sector professionals.
Scope	Inclusion: • Training needs assessment for the DoW and stakeholders • Design and delivery of tailored training programmes (in-country and ex-country) • Engagement of specialized and renowned training institutes • Post-training evaluation and reporting Exclusion: • Physical infrastructure development • Long-term academic degree programmes

Key requirements	• Comprehensive training needs assessment • Selection of suitable training institutes (regional and international) • Coordination with HR and project management units • Logistical arrangements for participants (travel, accommodation, materials) • Monitoring and evaluation tools for post-training assessment
Expected benefits	• Development of capacity for the officials of DoW and relevant stakeholders for water resource planning and management. • Improved knowledge and skills of DoW officials and stakeholders in climate-resilient water management • Enhanced capacity to integrate climate adaptation into water sector planning and operations • Progress towards ECRUL Project objectives on gender equity and inclusive participation (ensuring at least 30% female participation among trainees) • Strengthened institutional collaboration
Key milestones	• October 2025 (phase 1), October 2026 (phase 2), October 2028 (phase 3): Training needs assessment; finalize institutes and participants • November 2025 (phase 1), November 2026 (phase 2), November 2028 (phase 3): Training-related correspondences and logistical arrangements • December 2025 (phase 1), December 2026 (phase 2), December 2028 (phase 3): Completion of training and submission of training report
Activity Risks	Risk 1: Difficulty in identifying relevant training institutes with suitable courses Mitigation: Broaden search to regional and European institutes; engage with international partners for recommendations. Risk 2: Limited participation due to scheduling conflicts Mitigation: Early coordination with DoW and stakeholders to confirm availability.
Activity EXIT criteria	Success Criteria: 1. Training successfully completed as per schedule 2. Training report (including participant feedback, attendance, and outcomes) submitted to PMU and HR 3. At least 80% of participants demonstrate improved knowledge/skills (as measured by pre/post assessments) Completion Conditions: 1. All planned training sessions delivered 2. Required documentation and reports submitted and accepted
Prepared by	Norbu Wangmo, Hydrologist and Kinzang Namgay, Dy. Chief Forestry Officer, Submitted on June 19, 2025

10.2.2 Activity Brief for 1.5.3.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.3.1
Activity Name (As stated in ProDoc)	Support implementation of NbS interventions for urban resilience under the enhanced PES scheme
Location	Thimphu and Paro
Expected start date	January 2026
Completion date	June 2026
Approved budget	USD 120,000 Nu. 9,973,200
Responsible Parties	DoW-MoENR
Focal Person	Kinzang Namgay, Dy. Chief Forestry Officer, kinzangn@moenr.gov.bt, 17505208
ACTIVITY DETAILS	
Activity Background	This activity is initiated under Output 1.5 to introduce and demonstrate the application of Payment for Ecosystem Services (PES) mechanisms tailored to NbS within urban environments of Thimphu and Paro. It aims to address the increasing climate vulnerability of urban watersheds by exploring innovative financing tools for scaling up NbS interventions to enhance ecosystem services and community resilience. The initiative responds to the need for sustainable investment models that engage both public and private sectors in climate-resilient urban development.
Activity Description	The activity focuses on reviewing and updating the existing PES framework to better support the implementation of NbS interventions within the urban watersheds of Thimphu and Paro. It involves a comprehensive assessment to identify and map potential PES sites within these areas, followed by extensive community consultations to build awareness and encourage participation in the PES scheme. The activity will engage experts to scientifically validate and enhance the PES framework, deploy community engagement programs through workshops and training, and establish at least one functional PES in the project landscape to pilot innovative financing mechanisms. This groundwork lays the foundation for long-term sustainability and scalability of NbS interventions in urban settings.
Objectives	1. Identify and map potential PES sites in Thimphu and Paro. 2. Develop and implement community engagement mechanisms through workshops, training, and consultations to ensure sustainable PES participation post-project. 3. Review, update, and scientifically strengthen the PES framework to facilitate NbS financing and implementation. 4. Establish at least one operational PES scheme within the project landscape as a model for innovative financing and ecosystem stewardship

Scope	Inclusion: - Public and stakeholder consultations via workshops and training programs. - Identification, assessment, and mapping of potential PES sites in Thimphu and Paro watersheds. - Engagement of technical experts to provide scientific inputs for revising the PES framework. Exclusion: - PES site identification outside the defined urban landscapes of Thimphu and Paro. - Implementation activities beyond the piloting of one PES scheme during this phase.
Key requirements	- Identification and confirmation of potential PES sites within the project landscape. - Contractual services for expert review and framework revision. - Strong community engagement and coordination with local stakeholders.
Expected benefits	- Introduction and practical demonstration of the PES mechanism adapted to urban NbS. - Creation of an innovative and replicable financing instrument for urban ecosystem resilience. - Empowerment and incentivization of local communities for ecosystem conservation. - Improved watershed conditions leading to enhanced water quality and availability.
Key milestones	- May 2026: Completion of assessment and identification of potential PES sites. - June 2026: Completion of PES framework review and update. - June 2026: Delivery of stakeholder trainings and consultation workshops. - June 2027: Establishment and operationalization of at least one PES scheme within the project landscape
Activity Risks	Risk 1: Limited community cooperation may hinder PES establishment and sustainability. Mitigation: Conduct awareness campaigns, incentivize participation through training and engagement programs, and maintain continuous communication with communities to foster trust and ownership.
Activity EXIT criteria	Success criteria: - The updated and validated PES framework ready for implementation. - Comprehensive PES assessment report detailing identified sites. - At least one PES scheme successfully established and operational within the project landscape, demonstrating viability for scale-up.
Prepared by	Norbu Wangmo, Hydrologist, Kinzang Namgay, Dy. Chief Forestry Officer, Sonam Chophel, Forestry Officer. Submitted on June 19, 2025

10.2.3 Activity Brief for 1.5.3.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.5.3.3
Activity Name (As stated in ProDoc)	Assessment on water tariff system in Paro and Thimphu to ensure financial sustainability and allocating a portion of tariffs towards NbS investments for improved water management
Location	Thimphu and Paro
Expected start date	January 2028
Completion date	December 2028
Approved budget	USD 80,000 Nu. 6,648,800
Responsible Parties	DoW-MoENR
Focal Person	Kinzang Namgay, Dy. Chief Forestry Officer, kinzangn@moenr.gov.bt, 17505208
ACTIVITY DETAILS	
Activity Background	This activity is initiated to assess and enhance the current water tariff system in the urban centers of Paro and Thimphu with the aim of fostering financial sustainability for water management. Under Output 1.5, focused on innovative financing solutions, the activity seeks to design a tariff mechanism that not only ensures cost recovery but also dedicates funds toward NbS to improve integrated water resource management and climate resilience.
Activity Description	The activity involves conducting a comprehensive feasibility study on the existing water tariff system, including a community willingness-to-pay survey. It will engage local stakeholders through consultation workshops to gather qualitative and quantitative data. The study will identify appropriate tariff structures that ensure financial sustainability while promoting investments in NbS, thereby improving water resource management. Contractual services will be procured for executing the feasibility assessment, data collection, and analysis, culminating in actionable recommendations and capacity-building workshops for stakeholders.
Objectives	1. Conduct a feasibility study on the existing water tariff system in Thimphu and Paro. 2. Assess community willingness to pay for water tariffs through targeted surveys. 3. Explore mechanisms to allocate a portion of tariff revenues to support NbS investments.
Scope	Inclusion: • Public consultations and stakeholder engagements within the project landscapes of Thimphu and Paro. • Comprehensive feasibility study on the water tariff system specific to these locations. • Community surveys assessing willingness to pay tariffs. Exclusion: • Water tariffs applied to commercial or industrial users. • Energy cost components within water tariffs. • Other Dzongkhags outside Paro and Thimphu.

Key requirements	• Engagement of local consultants with expertise in water tariff assessment and financial modeling. • Capacity for community outreach, survey design, and stakeholder consultation. • Technical skills in environmental finance and integrated water resource management.
Expected benefits	• Enhanced financial sustainability of urban water management services. • Improved allocation of water and tariffs supporting NbS for climate resilience. • Empowered local communities and stakeholders with knowledge of tariff structures and willingness to support water resource management financially.
Key milestones	• June 2028: Develop ToR, initiate tendering, and award contracts for consultancy services. • September 2028: Complete feasibility study and community willingness-to-pay survey. • November 2028: Submit final comprehensive report. • December 2028: Conduct training workshop and stakeholder consultations.
Activity Risks	Risk 1: Low community willingness to pay water tariffs. Mitigation: Adopt a minimal cost-recovery tariff approach to minimize resistance. Increase awareness through consultations about the benefits of sustainable water management.
Activity EXIT criteria	Success criteria: 1. Successful completion of the feasibility study and willingness-to-pay surveys. 2. Submission and acceptance of a comprehensive water tariff assessment report with clear recommendations. 3. Conduct and documentation of stakeholder consultation and training workshops.
Prepared by	Kinzang Namgay, Dy. Chief Forestry Officer, Norbu Wangmo Hydrologist, Sonam Chopel, Forestry Officer. Submitted on June 20, 2025

10.2.4 Activity Brief for 2.2.2.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.2.2.2
Activity Name (As stated in ProDoc)	Assess degraded or critical watersheds/springshed in Thimphu and Paro
Location	Thimphu and Paro
Expected start date	March 2025
Completion date	June 2026
Approved budget	USD 22,875 Nu. 1,901,141.25
Responsible Parties	DoW-MoENR
Focal Person	Kinzang Namgay, Dy. Chief Forestry Officer, kinzangn@moenr.gov.bt, 17505208
ACTIVITY DETAILS	
Activity Background	This activity is initiated to restore degraded catchments, recharge zones, and water sources in Thimphu and Paro using NbS. It aligns with Output 2.2: NbS developed and implemented to support adaptation to floods, heat-island effect, and landslides, and to enrich water sources, natural streams, and catchments for improved infiltration, restoration, and recharge. The activity addresses the urgent need to identify and protect critical/degraded watershed areas that require targeted restoration to enhance water security and ecosystem resilience.
Activity Description	The activity entails a comprehensive assessment of watersheds to select three degraded sites for restoration using ICIMOD's Six Step Protocol. Through this activity the ultimate goal is to prioritize three critical/degraded watersheds for intervention and foster long-term watershed health. Pre-assessment of all the watersheds under Thimphu and Paro Dzongkhag has been carried out through the RGoB support in April 2025 employing 40 officials from DoFPS and DoW. This pre-assessment report will provide an idea about the degraded watersheds both in terms of conditions and functions. Out of the degraded watersheds, three most degraded watersheds will be selected for further detailed assessment. This requires public consultations to re-validate the conditions of the selected watersheds, which will be a crucial basis for future intervention works. The specific work under this activity includes identification of potential water recharge areas through detailed hydrogeological survey and public consultations.
Objectives	1. Re-validate the selected watersheds through public consultations and plan for further assessments 2. Conduct detailed assessment of the selected three degraded/critical watersheds/springsheds in Thimphu and Paro. 3. Identify and map potential recharge areas within the selected watersheds/springsheds.

Scope	Inclusion: • Classification of the watershed conditions using pre-assessment report • Fieldwork and hydrogeological surveys • Data collection and technical analysis • Public consultations and stakeholder engagement of the selected three critical/degraded watersheds • Preparation of technical watershed assessment reports • Coordination with DoFPS and LG (Thimphu and Paro) Exclusion: • The assessment will not include areas other than Thimphu and Paro • The public consultation will not cover watersheds other than degraded/critical
Key requirements	• Expertise in hydrogeological survey and watershed/springshed assessment • Collaboration and support from DoFPS, local communities, and leaders • Minimum 2-3 weeks of fieldwork per watershed for thorough assessment • Timely stakeholder consultations and coordination
Expected benefits	• The activity helps improve watershed health, enhance groundwater recharge and informed decision-making through NbS while also fostering community engagement and sustainable resource management. • Data-driven and community-informed watershed restoration information • Strengthened local awareness on sustainable watershed/springshed management • Alignment with ECRUL Project objectives on climate risk management and natural resource sustainability
Key milestones	• April 2025: Preliminary watershed assessment completed. • June-July 2025: Watershed condition classification finalized. • July 2025: Identification and selection of three degraded watersheds/springsheds in Paro and Thimphu. • September 2025: Hydrogeological survey of the three selected watersheds. • December 2025: Technical watershed assessment report of three watersheds. • June 2026: Consultation workshops with key stakeholders
Activity Risks	Risk 1: Lack of cooperation from local communities. Mitigation: Conduct awareness campaigns and community engagement sessions. Risk 2: Limited access to remote or sensitive sites. Mitigation: Adapt survey methods and seek local guidance for access. Risk 3: Coordination challenges among multiple stakeholders. Mitigation: Schedule regular coordination meetings and stakeholder consultations.
Activity EXIT criteria	Success criteria: 1. Completion and technical endorsement of the three identified watershed/springshed assessment report 2. Identified priority degraded watersheds/springsheds with mapped recharge zones
Prepared by	Kinzang Namgay, Dy. Chief Forestry Officer, Norbu Wangmo, Hydrologist, Sonam Chopel, Forestry Officer, Submitted on June 20, 2025

10.2.5 Activity Brief for 2.2.2.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.2.2.3
Activity Name (As stated in ProDoc)	Design and implementation of Nature-based watershed/springshed revival interventions, including potential natural gabion walls, in the above watersheds/springsheds
Location	Thimphu and Paro
Expected start date	August 2025
Completion date	December 2029
Approved budget	USD 445,250 Nu. 37,004,727.50
Responsible Parties	DoW-MoENR
Focal Person	Kinzang Namgay, Dy. Chief Forestry Officer, kinzangn@moenr.gov.bt, 17505208
ACTIVITY DETAILS	
Activity Background	This activity aims to restore degraded catchments, recharge zones, and water sources using NbS. It supports Outcome 2 on climate risk management by targeting vulnerable watershed areas in Thimphu and Paro, enhancing water availability and quality through sustainable interventions. The effort aligns with Output 2.2 to develop and implement NbS that aid adaptation to floods, heat island effects, and landslides while enriching water sources and natural streams.
Activity Description	The activity focuses on improving watershed health and groundwater recharge through NbS while fostering community participation and sustainable resource management. It involves designing and implementing restoration measures in the three most degraded watersheds/springsheds in Thimphu and Paro. Key components include conducting stakeholder consultations, procuring and installing three weather stations and flow monitoring equipment, and engaging contractors for equipment installation and implementation of NbS interventions following the six-step spring revival protocol. Interventions will exclude artificial or concrete structures, emphasizing natural methods to restore hydrological function over approximately 800 hectares. Community engagement will be strengthened through the formation of water user associations for long-term springshed management. A participatory approach comprising hydrological monitoring, social analysis, and ecological restoration ensures data-driven and context-specific outcomes aligned with climate resilience objectives.
Objectives	1. Develop a comprehensive intervention plan to revive degraded watersheds and springsheds. 2. Implement ICIMOD's six-step spring revival protocol and associated NbS interventions effectively in the selected areas. 3. Establish community engagement mechanisms to ensure sustainable springshed management post-project.

Scope	Inclusion: - Public consultations and stakeholder engagement - Implementation of NbS-based spring revival measures or interventions - Procurement and installation of weather stations and flow probes and related equipment. Exclusion: - Use of concrete and artificial structures in interventions.
Key requirements	- Development and documentation of an intervention plan based on consultations - Procurement of weather stations, flow probes, and related equipment - Contractual services for installation of weather stations and implementation of NbS activities
Expected benefits	- Enhanced micro-climatic and hydrological data collection at intervention sites - Improved watershed condition and enhanced groundwater recharge - Strengthened community capacity and ownership for sustainable springshed management - Contribution to climate risk management and water security in Thimphu and Paro
Key milestones	- May 2026: Procurement and delivery of weather stations and probes - June 2026: Installation of weather stations and related infrastructure - June 2026: Workshops and consultations with key stakeholders - June 2026: Completion of intervention plan development - December 2029: Implementation of spring revival measures - December 2029: Formation of water user groups and handover
Activity Risks	Risk 1: Limited impact due to dry valley climate conditions in Thimphu and Paro Mitigation: Apply adaptive management approaches and closely monitor intervention outcomes for timely adjustments Risk 2: Low community willingness to sustain springshed management post-project Mitigation: Engage communities early and continuously, provide capacity building, and formalize management handover to user groups
Activity EXIT criteria	- Successful implementation of intervention measures to revive watersheds/springsheds. - Formation and handover of springshed management responsibilities to local communities. - Integration of interventions with LG Plans for ecological restoration strategy.
Prepared by	Kinzang Namgay, Dy. Chief Forestry Officer, Norbu Wangmo, Hydrologist, Sonam Chopel, Forestry Officer, Submitted on June 20, 2025

10.2.6 Activity Brief for 2.2.2.4

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.2.2.4
Activity Name (As stated in ProDoc)	Develop Dzongkhag-level Integrated Water Resources Master Plan for Paro and Thimphu
Location	Thimphu and Paro
Expected start date	January 2028
Completion date	December 2029
Approved budget	USD 111,875 Nu. 9,297,931.25
Responsible Parties	DoW-MoENR
Focal Person	Kinzang Namgay, Dy. Chief Forestry Officer, kinzangn@moenr.gov.bt, 17505208
ACTIVITY DETAILS	
Activity Background	This activity is initiated to respond to the increasing challenges of water resource management in the rapidly urbanizing Dzongkhags of Paro and Thimphu. The lack of a coordinated, integrated water management framework at the Dzongkhag level hampers sustainable water use, resilience to climate change impacts such as floods and droughts, and effective watershed protection. Developing these Dzongkhag-level Integrated Water Resources Master Plans aligns with the national strategy to enhance water security and contributes directly to Output 2.2 on NbS supporting climate adaptation.
Activity Description	The activity involves contracting a qualified service provider to develop detailed and climate-resilient Integrated Water Resources Master Plans for Paro and Thimphu. The service provider will conduct comprehensive baseline assessments of water availability, infrastructure, demand, governance, and risk factors. The process will include community and stakeholder consultations, ensuring inclusivity and alignment with local priorities and policies. The plan will outline strategies for sustainable water resource management, protection of natural watersheds, and adaptation measures, contributing to the overarching National Integrated Water Resource Management Plan.
Objectives	1. Collect and analyze baseline data on water resources, infrastructure, demand, governance frameworks, and risks in Paro and Thimphu. 2. Develop integrated, climate-resilient water resource master plans tailored to the specific context of each Dzongkhag. 3. Facilitate participatory stakeholder engagement to ensure local ownership and policy alignment.
Scope	Inclusion: • Field surveys, technical assessments and data collection • Stakeholder consultation workshops and public engagement • Drafting, review, and finalization of detailed water resource master plans Exclusion: • Develop master plans for Dzongkhags excluding Paro, Thimphu • Implementation or construction beyond planning and advisory services

Key requirements	• Engagement of a competent consultancy team with expertise in integrated water resource management and climate resilience • Strong stakeholder engagement mechanisms including local communities, government agencies, and civil society • Alignment and compliance with national water policies, environmental regulations, and climate adaptation frameworks
Expected benefits	• Improved water security ensures sustainable resource use • Protect and restore watersheds, springs for water availability. • Strengthened institutional capacity and informed decision-making through a comprehensive planning approach • Beneficiaries include urban and rural populations in Paro and Thimphu Dzongkhags, with attention to vulnerable groups and gender considerations
Key milestones	• June 2028: ToR development, tendering, and contract award • October 2028: Completion of baseline assessment and data collection • December 2028: Stakeholder consultation workshop #1 • February 2029: Preparation of draft water master plans • June 2029: Stakeholder consultation workshop #2 • August 2029: Finalization of master plans • November 2029: Presentation and dissemination of final master plans
Activity Risks	Risk 1: Insufficient technical capacity within local team Mitigation: Hire experienced international consultants to complement local expertise Risk 2: Coordination challenges among multiple stakeholders causing delays Mitigation: Establish regular coordination meetings, clear communication protocols, and stakeholder engagement schedule
Activity EXIT criteria	Success criteria: 1. Delivery of a comprehensive, stakeholder-endorsed Dzongkhag Integrated Water Resource Master Plan for Paro and Thimphu 2. Documentation demonstrating alignment with national policies and readiness for implementation 3. Formal acceptance and sign-off from DoW and key stakeholders
Prepared by	Kinzang Namgay, Dy. Chief Forestry Officer, Submitted on June 19, 2025

10.3.1 Budget breakdown for 1.4.3.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$26,600
	Description Output 1.4, Activity 1.4.3: Conduct training and capacity development of relevant officials and stakeholders on climate smart water resources management. Item: Contractual services (tuition fee). Calculation: unit cost \$ 13,300 x 2 = \$ 26,600	
2	Training, Workshops, Meetings	\$20,000
	Description Output 1.4, Activity 1.4.3: Conduct training and capacity development of relevant officials and stakeholders on climate smart water resources management Item: Training and workshop - In-country: 3 workshop x (3 days x 110 (DSA, food and lodging) x 20 participants + hall charge 125x 3 days) Calculation: unit cost \$ 20,000 x 1 = \$ 20,000	
3	Travel	\$73,400
	Description Output 1.4, Activity 1.4.3: Conduct training and capacity development of relevant officials and stakeholders on climate smart water resources management. Item: Training and workshop - Ex-country: 2 groups (14 days x 220 (DSA) x 6 participants + Air Fare (3000 per head). Calculation: unit cost \$ 36,700 x 2 = \$ 73,400	
Total		\$120,000

10.3.2 Budget breakdown for 1.5.3.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$20,000
	Description Output 1.5, Activity 1.5.3: Implement NbS interventions for urban resilience under the enhanced PES scheme. Item: Local consultant for review and update PES Framework. Calculation: unit cost \$ 450 x 44 = \$ 20,000	
2	Training, Workshops, Meetings	\$50,000
	Description Output 1.5, Activity 1.5.3: Implement NbS interventions for urban resilience under the enhanced PES scheme. Item: Training and workshops - Consultation meetings and training of stakeholders: 3 workshop x 3 days x 110 (DSA, food and lodging) x 50 participants + hall charge 125x 3 days. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
3	Travel	\$50,000
	Description Output 1.5, Activity 1.5.3: Implement NbS interventions for urban resilience under the enhanced PES scheme. Item: Travel for Assessment of potential PES sites. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
Total		\$120,000

10.3.3 Budget breakdown for 1.5.3.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$30,000
	Description Output 1.5, Activity 1.5.3: Assessment on water tariff system in Paro and Thimphu. Item: Local consultant - Feasibility study on water tariff. Calculation: unit cost \$ 450 x 67 = \$ 30,000	
2	Training, Workshops, Meetings	\$50,000
	Description Output 1.5, Activity 1.5.3: Assessment on water tariff system in Paro and Thimphu. Item: Training and workshops - consultations and assessment: 3 workshop x 3 days x 110 (DSA, food and lodging) x 50 participants + hall charge 125x 3 days. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
Total		\$80,000

10.3.4 Budget breakdown for 2.2.2.2

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$18,375
	Description Output 2.2, Activity 2.2.2: Assess degraded or critical watersheds/springshed in Thimphu and Paro Item: 2: Consultation workshops with LGs and water users: 3 x (5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 3 = \$ 18,375	
2	Travel	\$4,500
	Description Output 2.2, Activity 2.2.2: Assess degraded or critical watersheds/springshed in Thimphu and Paro Item: 1: Travel for three watershed assessment. Calculation: unit cost \$ 1,500 x 3 = \$ 4,500	
Total		\$22,875

10.3.5 Budget breakdown for 2.2.2.3

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$43,000
	Description Output 2.2, Activity 2.2.2: Design and implement of nature-based watershed/springshed revival interventions in the above watersheds/springsheds Item: 2: Procurement of weather stations and flow probes. Calculation: unit cost \$ 5,375 x 8 = \$ 43,000	
2	Contractual services-Company	\$390,000
	Description Output 2.2, Activity 2.2.2: Design and implement of nature-based watershed/springshed revival interventions in the above watersheds/springsheds Item: 3: Contractual services-companies, for establishment of weather stations. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000 Output 2.2, Activity 2.2.2: Design and implement of nature-based watershed/springshed revival interventions in the above watersheds/springsheds Item: 4: Contractual Services (for implementation of NbS in watersheds/springsheds). Calculation: unit cost \$ 340,000 x 1 = \$ 340,000	
3	Training, Workshops, Meetings	\$12,250
	Description Output 2.2, Activity 2.2.2: Design and implement of nature-based watershed/springshed revival interventions in the above watersheds/springsheds Item: 1: Training and Workshops: 2 x (5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 2 = \$ 12,250	
Total		\$445,250

10.3.6 Budget breakdown for 2.2.2.4

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$93,500
	Description Output 2.2, Activity 2.2.2: Develop Dzongkhag Integrated Water Resources Master Plan for Paro and Thimphu. Item: 3: Local consulting firm- Dzongkhag integrated water master plan development. Calculation: unit cost \$ 93,500 x 1 = \$ 93,500	
2	Workshops, Meetings	\$18,375
	Description Output 2.2, Activity 2.2.2: Develop Dzongkhag Integrated Water Resources Master Plan for Paro and Thimphu. Item: 1: Workshops/Meetings - Consultations with stakeholders: 3 x (5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 3 = \$ 18,375	
Total		\$111,875

11. WSD, DoID-MoIT

11.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																												
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y1 Yr	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y2 Yr	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y3 Yr	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y4 Yr	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y5 Yr	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.2.3.3	Train officials for water GIS	\$30,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	1 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	1 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr										
2	1.4.3.4	Train officials on resilient water infrastructure	\$60,000						1 yr	1 yr	1 yr	1 yr	1 yr																			
3	1.4.3.5	Train technicians on water system maintenance	\$60,000						1 yr	1 yr	1 yr	1 yr	1 yr																			
4	2.1.3.1	Digitize water supply systems	\$23,750			1 yr	1 yr										1 yr	1 yr														
5	2.1.3.2	Install sensors and SCADA systems	\$148,750											2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr										
6	2.1.3.3	Assess and improve water treatment	\$54,000						1 yr	1 yr	1 yr	1 yr	1 yr																			
7	2.1.3.4	Secure climate-resilient water supply	\$1,030,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr										
Total			\$1,406,500																													

11.2.1 Activity Brief for 1.2.3.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.2.3.3
Activity Name (As stated in ProDoc)	Capacity building of the relevant officials on the application of GIS for water supply systems in Thimphu and Paro
Location	In-country (for 3 trainings)
Expected start date	1 July 2025
Completion date	31 December 2028
Approved budget	USD 30,000 Nu. 2,493,300
Responsible Parties	DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag and Paro Dzongkhag
Focal Person	Tshering Chhoden, Exe. Engineer, tsheringchoden@moit.gov.bt, 17274444
ACTIVITY DETAILS	
Activity Background	Water supply pipelines in Bhutan are usually laid underground to protect them from damage and freezing in cold climates. However, most municipalities lack accurate as-built drawings in digital or paper formats, causing delays in leak detection and pipe damage management. This leads to inefficiencies and resource wastage. To address this, the ECRUL project proposes digitizing water pipelines using GIS technology, necessitating capacity building of relevant officials to effectively manage and utilize GIS for improved water supply system management.
Activity Description	This activity focuses on building the capacity of officials from Thimphu Dzongkhag, Thimphu Thromde, Paro Dzongkhag, ROID, and DoID in the application of GIS for water supply system management. The training will equip participants with skills to map and analyze water-related data and apply GIS tools in planning and managing water infrastructure. Three training sessions will be conducted by CST to ensure officials gain practical knowledge and technical expertise to enhance water management efficiency and responsiveness.
Objectives	1. Equip officials with skills to use GIS for water infrastructure planning and management. 2. Enhance capacity to map and analyze water supply data digitally. 3. Improve planning and decision-making capacity for water supply systems through GIS applications.
Scope	Inclusion: • Three GIS training sessions focused on water supply systems. • Capacity building for officials from Thimphu Dzongkhag, Thimphu Thromde, Paro Dzongkhag, ROID, and DoID. • Training delivery by CST with practical GIS applications. Exclusion: • Development or procurement of GIS software and hardware. • Direct implementation of GIS mapping or data digitization outside training.
Key requirements	• Competent resource persons/facilitators from CST. • Coordination and logistical support from ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag. • Support from the PMU for smooth execution.

Expected benefits	• Enhanced GIS skills among water management officials, improving planning and operational efficiency. • Better water supply infrastructure management capabilities. • Engineers from Thimphu Dzongkhag & Thromde, Paro Dzongkhag, ROID, and DoID, contributing to ECRUL project outcomes related to sustainable water infrastructure management.
Key milestones	• Q4 2025: Completion of first training • Q3 2026: Completion of second training • Q2 2027: Completion of third training
Activity Risks	Risk 1: Insufficient budget to complete all training. Mitigation: Request reappropriation of savings within the project budget or seek additional funding if necessary.
Activity EXIT criteria	1. Submission and approval of comprehensive training reports for all three sessions. 2. Demonstrated improvement in GIS application skills among trained officials. 3. Confirmation from RPs that training objectives have been met and officials are equipped to apply GIS in water supply management.
Prepared by	Tshering Chhoden, Executive Engineer, Submitted on May 21, 2025

11.2.2 Activity Brief for 1.4.3.4

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.3.4
Activity Name (As stated in ProDoc)	Capacity building of the relevant officials on the planning, design and construction of climate resilient water and wastewater infrastructures.
Location	Ex-country
Expected start date	1 July 2026
Completion date	31 December 2026
Approved budget	USD 80,000 Nu. 6,648,800
Responsible Parties	DoID, ROID, Thimphu Thromde, Thimphu and Paro Dzongkhag
Focal Person	Tshering Choden, Exe. Engineer, tsheringchoden@moit.gov.bt, 17274444
ACTIVITY DETAILS	
Activity Background	Bhutan is increasingly affected by climate change, with notable impacts on its water sector, including drying water sources and damage to infrastructure from floods and landslides. These challenges threaten water security and infrastructure sustainability. To address these issues, it is critical to build the capacity of engineers to incorporate climate resilience into water and wastewater infrastructure planning, design, construction, thereby enhancing the sector's adaptability and reducing vulnerability to climate risks
Activity Description	This activity aims to build the capacity of engineers from DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag on planning, designing, and constructing climate-resilient water and wastewater infrastructure. Through a comprehensive training program, participants will gain knowledge and practical skills to integrate climate adaptation and mitigation measures into their work. The training will cover climate-resilient design alternatives, risk assessment, and innovative construction techniques that enhance infrastructure durability under changing climatic conditions. This initiative will empower engineers to apply climate-smart approaches, ultimately contributing to sustainable water management and infrastructure resilience in Bhutan.
Objectives	1. Enhance engineers' technical knowledge on climate-resilient water and wastewater infrastructure design and construction. 2. Equip engineers with practical skills to integrate climate adaptation and mitigation measures in water and wastewater infrastructure projects. 3. Strengthen institutional capacity for climate-resilient water and wastewater infrastructure planning and implementation
Scope	Inclusion: • One comprehensive training workshop for engineers from DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag. • Training content covering climate resilience concepts, design alternatives, and construction methodologies. • Development and dissemination of training materials and guidelines. Exclusion: • Implementation of infrastructure and physical construction projects. • Follow-up or refresher training sessions beyond the initial workshop.

Key requirements	• Engagement of a credible institute, university, or qualified organization to lead the capacity development initiative. • Effective coordination and collaboration among DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag. • Adequate support from the PMU. • Appropriate training facilities, materials, technology support available • Gender-balanced participation adhering to capacity and climate mandates.
Expected benefits	• Enhanced capacity of engineers from Thimphu Thromde, Thimphu, Paro Dzongkhag, and DoID to design climate-resilient water infrastructure. • Strengthened institutional knowledge and professional development aligned with gender-inclusive participation and capacity mandates. • Improved integration of climate adaptation and mitigation measures in water and wastewater infrastructure projects, contributing to the ECRUL Project objectives of resilience and sustainability.
Key milestones	• 30 September 2026: Completion of training • 3 October 2026: Submission of training report • 30 November 2026: Dissemination of training materials and guidelines
Activity Risks	Risk 1: Insufficient budget allocation may delay or limit the training's scope. Mitigation: Request reappropriation of funds from project savings and seek additional support from stakeholders.
Activity EXIT criteria	Success Criteria: 1. Training session completed with full participation of targeted engineers. 2. Submission and approval of a comprehensive training report documenting content, attendance, and feedback. 3. Distribution of training materials and guidelines to all relevant agencies. 4. Conditions to declare activity completed: 5. All key milestones achieved within the timeline. 6. Positive evaluation feedback indicating enhanced capacity of participants. 7. Confirmation from stakeholders that training objectives have been met.
Prepared by	Tshering Chhoden, Executive Engineer, Submitted on May 21, 2025

11.2.3 Activity Brief for 1.4.3.5

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.3.5
Activity Name (As stated in ProDoc)	Capacity building of the technicians and site engineers on the operation and maintenance of water and wastewater system
Location	Ex-country
Expected start date	1 January 2026
Completion date	30 June 2026
Approved budget	USD 60,000 Nu. 4,986,600
Responsible Parties	DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag and Paro Dzongkhag
Focal Person	Tshering Chhoden, Exe. Engineer, tsheringchoden@moit.gov.bt, 17274444
ACTIVITY DETAILS	
Activity Background	Effective operation and maintenance (O&M) of water supply and wastewater systems is vital to ensure consistent water and wastewater service delivery, operational efficiency, and long-term sustainability. In Bhutan, inadequate O&M has frequently led to premature deterioration and underutilization of water and wastewater infrastructure despite significant investments. This has resulted in water and wastewater assets failing to deliver intended services to communities. Strengthening the technical and operational skills of technicians and site engineers is therefore essential to improve system reliability and sustainability.
Activity Description	This activity aims to build the capacity of technicians and site engineers from DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag in the operation and maintenance of water supply and wastewater systems. The training will provide practical knowledge and skills on various treatment components, chemical dosing, safety protocols, and routine maintenance practices. By enhancing their technical competencies, the activity seeks to ensure efficient system management, reduce downtime, and extend the lifespan of water supply and wastewater infrastructure. Ultimately, this will improve the quality and reliability of water and wastewater services delivered to communities.
Objectives	1. Enhance the technical skills of technicians and site engineers in operating water supply and wastewater systems effectively. 2. Strengthen capacity to perform routine and preventive maintenance to ensure system sustainability. 3. Promote safety awareness and best practices in chemical handling and treatment operations.
Scope	Inclusion: • One comprehensive training covering operation, maintenance, chemical dosing, and safety. • Participation of technicians and engineers from DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag. • Development and dissemination of training materials and manuals. Exclusion: • Procurement of equipment or infrastructure upgrades. • Post-training monitoring and evaluation beyond initial training report.

Key requirements	• Engagement of a credible institute, university, or qualified organization to lead the capacity development initiative. • Effective coordination and collaboration among DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag. • Adequate support from the PMU. • Availability of appropriate training facilities, materials, and technological support to facilitate effective learning.
Expected benefits	• Improved operational efficiency and sustainability of water supply and wastewater systems in targeted Dzongkhags and Thromde. • Enhanced professional capacity of technicians and engineers, contributing to safer and more reliable water services. • Beneficiaries include technicians and engineers, aligned with ECRUL Project objectives of equitable capacity development and improved water service outcomes.
Key milestones	• 31 March 2026: Completion of training • 30 April 2026: Submission of training report
Activity Risks	Risk 1: Insufficient budget allocation may delay or limit the training's scope. Mitigation: Request reappropriation of funds from project savings and seek additional support from stakeholders.
Activity EXIT criteria	1. Completion and delivery of the training session to all targeted participants. 2. Submission and approval of a comprehensive training report documenting attendance, content delivered, and feedback. 3. Confirmation from RPs that participants have acquired the intended skills.
Prepared by	Tshering Chhoden, Executive Engineer, Submitted on May 21, 2025

11.2.4 Activity Brief for 2.1.3.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.3.1
Activity Name (As stated in ProDoc)	Digitization of water supply system in Thimphu and Paro municipality
Location	Debsi (Thimphu Dzongkhag) and Paro Throm (Tshongdue-Maintown)
Expected start date	1 July 2025
Completion date	31 December 2025
Approved budget	USD 23,750 Nu. 1,973,862.50
Responsible Parties	DoID, ROID, Thimphu Dzongkhag and Paro Dzongkhag
Focal Person	Tshering Chhoden, Exe. Engineer, tsheringchoden@moit.gov.bt, 17274444
ACTIVITY DETAILS	
Activity Background	Water supply pipelines in Bhutan are predominantly underground to prevent damage and freezing in cold climates. However, most municipalities lack accurate as-built drawings—both digital and paper formats—resulting in delayed leak detection and pipe damage management. This inefficiency leads to resource wastage and hampers effective water supply management. This activity is initiated to address these challenges by creating a comprehensive digital record of the water supply infrastructure.
Activity Description	This activity involves the digital mapping of water supply infrastructure in Debsi and Paro Throm using GIS technology. It will cover transmission mains, storage reservoirs, distribution networks, and pipe accessories such as valves and fire hydrants. The digital maps will include critical data such as pipe material, size, age, and other relevant attributes. The purpose is to establish a centralized, accessible database that supports timely maintenance, leak detection, and system optimization. Ultimately, this will enhance the efficiency and reliability of the water supply systems in the target areas.
Objectives	1. Develop comprehensive digital maps of water supply pipelines through GIS for Debsi and Paro Tshongdue. 2. Integrate detailed attribute data (pipe size, material, age) into the digital mapping system. 3. Facilitate improved maintenance and management of water supply infrastructure through accessible digital records.
Scope	Inclusion: • Digital mapping of transmission mains, storage reservoirs, and distribution networks. • Inclusion of pipe accessories such as valves and fire hydrants. • Documentation of pipe characteristics including size, material, and age. Exclusion: • Physical repair or replacement of water supply infrastructure. • Mapping outside the geographical boundaries of Debsi and Paro Tshongdue • Development of new water supply infrastructure.

Key requirements	• Development of ToR for consultancy firm recruitment. • Engagement of qualified consultancy firm services for GIS mapping. • Coordination and support from ROID, Thimphu Dzongkhag, and Paro Dzongkhag authorities. • Support from PMU
Expected benefits	• Enhanced water supply management and maintenance for residents of Debsi and Paro Tshongdue. • Reduced response time to leaks and pipe damages, minimizing water loss. • Improved resource efficiency and sustainability of water supply systems. • Beneficiaries include all genders, communities within project areas, aligning with ECRUL sustainable water infrastructure objectives.
Key milestones	• 30 June 2025: Formulation of ToR • End of July 2025: Notice Inviting Tender • End of September 2025: Award of Consultancy Service • 30 October 2025: Approval of Inception Report • 30 November 2025: Approval of Draft Report and Digital Maps • 30 December 2025: Approval of Final Report and Digital Maps Note: Two digitalisation activities will be merged. Backloading of one activity and frontloading of another activity.
Activity Risks	Risk 1: Delay in procurement process Mitigation: Implement thorough procurement planning and monitoring. Risk 2: Recruitment of incompetent consultants Mitigation: Develop comprehensive ToR with clear requirements and evaluation criteria. Risk 3: Insufficient budget allocation Mitigation: Seek budget reappropriation from project savings if needed.
Activity EXIT criteria	1. Formal approval of final report and digital maps by ROID, DoID, and LGs. 2. Successful handover of all reports and digital mapping data to LGs. 3. Confirmation that digital mapping outputs are fully operational and accessible for water supply management.
Prepared by	Tshering Chhoden, Executive Engineer, Submitted on May 21, 2025

11.2.5 Activity Brief for 2.1.3.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.3.2
Activity Name (As stated in ProDoc)	Installation of sensors and SCADA system for water supply system
Location	Thimphu Thromde and Paro Throm
Expected start date	1 January 2027
Completion date	31 December 2027
Approved budget	USD 148,750 Nu. 12,362,612.50
Responsible Parties	DoID, ROID, Thimphu Thromde and Paro Dzongkhag
Focal Person	Tshering Chhoden, Exe. Engineer, tsheringchoden@moit.gov.bt, 17274444
ACTIVITY DETAILS	
Activity Background	Most water supply systems in Bhutan currently rely on manual monitoring and control, resulting in inefficiencies, delays, and labor-intensive operations. Manual processes are also prone to human errors such as miscalculations, missed warnings, and incorrect adjustments, which affect water supply reliability and safety. To address these challenges and leverage advancements in technology, this activity aims to install sensors and a Supervisory Control and Data Acquisition (SCADA) system for real-time remote monitoring and control of water supply systems in Thimphu Thromde and Paro Dzongkhag.
Activity Description	This activity involves installation of sensors and a SCADA system to modernize water supply management in Thimphu Thromde and Paro Dzongkhag. It includes setting up control units with monitors, ensuring internet connectivity, and deploying sensors to measure water flow and quality parameters such as turbidity, pH, and residual chlorine in pipes and reservoirs. The purpose is to enable real-time data acquisition and remote control, which will optimize water supply operations, enhance safety, reduce labor costs, and minimize water wastage. Additionally, relevant staff will be trained to operate and maintain the system, ensuring sustainability and improved service delivery.
Objectives	1. Enhance the management and operational efficiency of water supply systems through real-time monitoring and control. 2. Improve water quality and safety by continuous monitoring of key parameters. 3. Build capacity of local staff through training on SCADA system operation and maintenance.
Scope	Inclusion: • Installation of SCADA control units, monitors, and internet connectivity. • Deployment of water flow and quality sensors (turbidity, pH, chlorine). • Training programs for relevant staff in Thimphu and Paro Dzongkhag. Exclusion: • Upgrading or expansion of water supply infrastructure beyond sensor and SCADA installation. • Long-term maintenance beyond initial training and handover phase.

Key requirements	• Detailed technical specifications for SCADA and sensors. • Selection and contracting of qualified contractors. • Coordination among DoID, RoID, and LGs of Thimphu and Paro. • Support from PMU
Expected benefits	• Improved water supply management and operational efficiency for residents of Thimphu Thromde and Paro Dzongkhag. • Enhanced water quality monitoring to ensure safer drinking water. • Reduced labor costs and minimized water wastage through automation. • Capacity building of LG staff to sustain system operations.
Key milestones	• 20 June 2026: Development of technical specifications • 30 June 2027: Procurement of contractors and equipment • 30 August 2027: Installation and commissioning of SCADA system • 2027 (Q4): Training of staff and system handover
Activity Risks	Risk 1: Incorrect or irrelevant technical specifications. Mitigation: Engage technical experts from PTS, PMU during specification. Risk 2: Delays in procurement process. Mitigation: Implement thorough procurement planning and monitoring. Risk 3: Recruitment of incompetent contractors. Mitigation: Develop ToR covering technical and operational requirements. Risk 4: Insufficient budget allocation. Mitigation: Seek reappropriation of funds from project savings if necessary.
Activity EXIT criteria	1. Successful installation and commissioning of SCADA and sensor systems. 2. Completion of staff training programs. 3. Formal handover and acceptance of the SCADA system by Thimphu Thromde and Paro Dzongkhag. 4. Confirmation that the system is operational and staff are capable of managing it independently.
Prepared by	Tshering Chhoden, Executive Engineer, Submitted on May 21, 2025

11.2.6 Activity Brief for 2.1.3.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.3.3
Activity Name (As stated in ProDoc)	Promote climate risk informed planning of water supply through the assessment of existing treatment plants and implementation of remedial measure for Paro and Thimphu municipalities
Location	Water Treatment plants in Thimphu Thromde (One WTP) and Paro Throm (Gepjana WTP and Jangsa Infiltration)
Expected start date	1 January 2026
Completion date	31 December 2026
Approved budget	USD 54,000 Nu. 4,487,940
Responsible Parties	DoID, ROID, Thimphu Thromde and Paro Dzongkhag
Focal Person	Tshering Chhoden, Exe. Engineer, tsheringchoden@moit.gov.bt, 17274444
ACTIVITY DETAILS	
Activity Background	Urban towns across Bhutan, including Thimphu and Paro, have basic water supply systems comprising intakes, transmission mains, treatment plants, and distribution networks. However, water quality often fails to meet standards due to malfunctioning treatment plants, which are frequently bypassed because of inadequate operation and maintenance. Even where treatment plants are operational, they do not consistently produce the desired water flow and quality. This activity is initiated to address these issues by assessing existing treatment plants and implementing necessary remedial measures to ensure climate risk-informed, reliable potable water supply.
Activity Description	This activity involves a comprehensive assessment of the performance and efficiency of the water treatment plants in Thimphu Thromde and Paro Throm. The assessment will cover physical condition, operational efficiency, equipment functionality, and water quality monitoring at each stage of the treatment process. Based on the findings, prioritized remedial measures will be designed and implemented to restore or enhance the plants' capacity to treat raw water into potable water that meets national standards. The purpose is to improve water quality, ensure compliance with standards, and support climate-resilient water supply planning in these municipalities. Key goals include restoring full functionality of treatment plants, optimizing treatment processes, and safeguarding public health through safe drinking water.
Objectives	1. Enhance water quality to consistently meet national drinking water standards. 2. Assess and improve operational efficiency of water treatment plants in Thimphu and Paro. 3. Implement prioritized remedial measures to restore and upgrade treatment plant infrastructure.

Scope	Inclusion: • Comprehensive assessment of existing water treatment plants in Thimphu Thromde and Paro Throm. • Design and implementation of prioritised remedial measures based on assessment outcomes. • Monitoring and evaluation of water quality improvements post-implementation. Exclusion: • Upgrades beyond the scope of remedial actions identified in the assessment. • Water distribution network improvements outside treatment plant boundaries.
Key requirements	• Development of ToR for plant assessment. • Engagement of qualified consultants firm and contractors for assessment and remedial works. • Detailed designs for remedial measures. • Coordination and support from DoID, ROID, Thimphu Thromde, and Paro Dzongkhag. • Support from communities of Paro and Thimphu • Support from PMU
Expected benefits	• Improved potable water quality for residents of Thimphu Thromde and Paro Throm, benefiting all genders and vulnerable groups. • Enhanced public health outcomes through compliance with water quality standards. • Strengthened climate resilience of urban water supply systems aligned with ECRUL Project objectives and outcomes.
Key milestones	• Q1 2026: Development of ToR • Q1 2026: Procurement of services • Q3 2026: Approval of final assessment report • Q4 2026: Implementation of remedial measures
Activity Risks	Risk 1: Delay in procurement process Mitigation: Implement detailed procurement planning and early initiation of procurement activities. Risk 2: Recruitment of incompetent contractors/consultants Mitigation: Develop comprehensive ToR with clear technical and qualification requirements. Risk 3: Insufficient budget allocation Mitigation: Seek reappropriation of funds from project savings and ensure budget monitoring. Risk 4: Inadequate support from communities Mitigation: Consultation meeting with the stakeholders and ensure social and environment safeguards.
Activity EXIT criteria	1. Formal approval of three water treatment plant assessment reports. 2. Successful handover and commissioning of implemented remedial works. 3. Demonstrated full functionality of water treatment plants with water quality meeting national standards (subject to availability of funds, if remedial measures require substantial budget).
Prepared by	Tshering Chhoden, Executive Engineer, Submitted on May 21, 2025

11.2.7 Activity Brief for 2.1.3.4

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.3.4
Activity Name (As stated in ProDoc)	Ensuring uninterrupted safe water supply through appropriate interventions to combat climate change in Thimphu and Paro municipalities Component A: Assessment of Non Revenue Water (NRW) Component B: Construction of Water Treatment Plant for Debsi
Location	Component A: Thimphu Thromde and Paro Throm Component B: Debsi, Thimphu Dzongkhag
Expected start date	1 July 2025
Completion date	31 December 2028
Approved budget	USD 1,030,000 Nu. 85,603,300
Responsible Parties	DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag and Paro Dzongkhag
Focal Person	Tshering Chhoden, Exe. Engineer, tsheringchoden@moit.gov.bt, 17274444
ACTIVITY DETAILS	
Activity Background	Component A: Assessment of NRW Despite existing water infrastructure, urban areas including Thimphu face intermittent water supply and shortages. Although Thimphu's water production capacity (28.4 MLD) exceeds demand (23.4 MLD), residents experience shortages primarily due to high NRW from leakages, losses, and illegal connections. Managing NRW is critical to improving water service reliability and municipal financial health. Component B: Construction of water treatment plant for Debsi Debsi, under Chang Gewog in Thimphu Dzongkhag, is rapidly growing, with 334 plots facing frequent water shortages. Raw water distribution from Ngabi Rongchu was established recently but lacks treatment. To ensure safe and uninterrupted water supply, constructing a water treatment plant for Debsi has been approved under this project.
Activity Description	Component A: This activity involves assessing NRW by demarcating District Metered Areas (DMAs), installing flow meters, and monitoring flow over time. Based on the assessment, prioritized remedial measures to reduce NRW will be proposed and implemented, improving water supply reliability and financial performance. The activity will be executed through consultancy services. Component B: This activity entails constructing a water treatment plant in Debsi using a Design-Build-Operate-Transfer (DBOT) approach. This modality encourages innovative treatment technologies and capacity building for plant operators. The goal is to provide safe drinking water to Debsi residents and ensure continuous supply.
Objectives	1. Reduce NRW in Thimphu and Paro to improve water supply reliability. 2. Construct and operationalize a water treatment plant in Debsi to ensure safe drinking water. 3. Build capacity for sustainable operation and maintenance of water supply infrastructure (Debsi).

Scope	Inclusion: • Component A: NRW assessment, DMA demarcation, flowmeter installation, NRW monitoring, and implementation of remedial measures. • Component B: Design, construction, and operation & maintenance (O&M) of the Debsi water treatment plant for a specified period. Exclusion: • Expansion of water supply networks beyond the treatment plant Long-term O&M beyond the contractually specified period. • Addressing water supply issues outside Thimphu and Paro municipalities.
Key requirements	• ToR for NRW assessment consultancy. • Detailed designs and BoQ for NRW remedial measures and WTP construction. • Coordination among DoID, ROID, Thimphu Thromde, Thimphu Dzongkhag, and Paro Dzongkhag. • Support from PMU
Expected benefits	• Reliable and uninterrupted safe water supply for residents of Thimphu and Paro municipalities and Debsi community. • Reduced water losses and improved financial sustainability for municipal water utilities. • Enhanced public health outcomes through access to treated drinking water. • Capacity building for local operators and stakeholders (Debsi)
Key milestones	Component A • Q1 2026: Development of ToR for NRW assessment • Q3 2026: Procurement of consultancy services • Q3 2027: Approval of final NRW assessment report • Q4 2028: Completion of NRW remedial measures Component B • Q2 2025: Preparation of specifications and bidding documents • Q3 2025: Procurement of construction works • Q4 2026: Completion of WTP construction • Q4 2028: Completion of O&M period
Activity Risks	Risk 1: Delay in procurement process Mitigation: Implement thorough procurement planning and monitoring. Risk 2: Recruitment of incompetent contractors/consultants Mitigation: Develop comprehensive ToR including all technical requirements. Risk 3: Insufficient budget (if remedial measures are beyond the allocated budget) Mitigation: Request reappropriations from project savings as needed. Risk 4: Environmental/social grievances during WTP construction Mitigation: Prepare and implement Environmental and Social Safeguards Management Plan.
Activity EXIT criteria	1. Approval of the final NRW assessment report by relevant authorities. 2. Successful handover and operationalization of NRW remedial works. 3. Fully functional and operational water treatment plant in Debsi with O&M arrangements in place.
Prepared by	Tshering Chhoden, Executive Engineer, Submitted on May 21, 2025

11.3.1 Budget breakdown for 1.2.3.3

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$20,000
	Description Output 1.2, Activity 1.2.3: Capacity building of the relevant officials on the application of GIS for water supply systems in Thimphu and Paro. Item: Workshops and training: 3 workshops, approximate costs: 17 people, 5 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 6,667 x 3 = \$ 20,000	
2	Travel	\$10,000
	Description Output 1.2, Activity 1.2.3: Capacity building of the relevant officials on the application of GIS for water supply systems in Thimphu and Paro. Item: Travel: Approx. costs - 17 people x \$39 x 5 days. Calculation: unit cost \$ 3,333 x 3 = \$ 10,000	
Total		\$30,000

11.3.2 Budget breakdown for 1.4.3.4

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$80,000
	Description Output 1.4, Activity 1.4.3: Capacity building of the relevant officials on the planning, design and construction climate resilient water and wastewater infrastructures. Item: Training and Workshops - Ex- Country: 11 days x 220 (DSA) x 9 participants + Air Fare (3000 per head). Calculation: unit cost \$ 49,000 x 1 = \$ 49,000 Output 1.4, Activity 1.4.3: Capacity building for relevant officials in the planning and designing of nature-based stormwater and flood risk management Item: Contractual services (tuition fee). Calculation: unit cost \$ 1,000 x 11 = \$ 11,000 Output 1.4, Activity 1.4.3: Training/ workshop (NRW) + SCADA Training Item: Training and workshop - In-country: \$ 110 x 30 person x 2 days x 10 times + 500. Calculation: unit cost \$ 2,000 x 10 = \$ 20,000	
Total		\$80,000

11.3.3 Budget breakdown for 1.4.3.5

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$60,000
	Description Output 1.4, Activity 1.4.3: Capacity building of the technicians and site engineers on the Operation & Maintenance of Water and waste water system Item: Training and Workshops - Ex- Country: 11 days x 220 (DSA) x 9 participants + Air Fare (3000 per head) Calculation: unit cost \$ 49,000 x 1 = \$ 49,000 Output 1.4, Activity 1.4.3: Capacity building for relevant officials in the planning and designing of nature-based stormwater and flood risk management Item: Contractual services (tuition fee). Calculation: unit cost \$ 1,000 x 11 = \$ 11,000	
Total		\$60,000

11.3.4 Budget breakdown for 2.1.3.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$10,000
	Description Output 2.1, Activity 2.1.3: Digitization of water supply system in Thimphu and Paro municipality. Item: 1: Local consultant (build data for the water distribution network for proper O&M). Calculation: unit cost \$ 450 x 22 = \$ 10,000	
2	Training, Workshops, Meetings	\$12,250
	Description Output 2.1, Activity 2.1.3: Digitization of water supply system in Thimphu and Paro municipality. Item: 3: Training/ Workshop (In country): 2 workshops x(5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 2 = \$ 12,250	
3	Travel	\$1,500
	Description Output 2.1, Activity 2.1.3: Digitization of water supply system in Thimphu and Paro municipality. Item: 2: Travel. Calculation: unit cost \$ 1,500 x 1 = \$ 1,500	
Total		\$23,750

11.3.5 Budget breakdown for 2.1.3.2

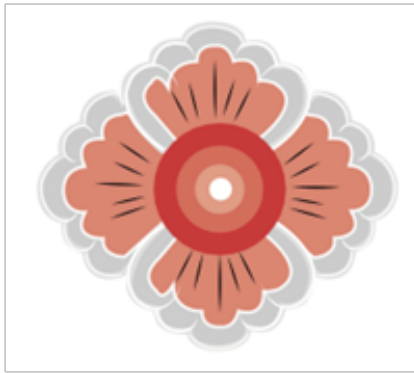
SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$136,500
	Description Output 2.1, Activity 2.1.3: Installation of sensors and SCADA system for water supply system. Item: 1: Contractual services - companies, for Installation of sensors and SCADA system. Calculation: unit cost \$ 136,500 x 1 = \$ 136,500	
2	Training, Workshops, Meetings	\$12,250
	Description Output 2.1, Activity 2.1.3: Installation of sensors and SCADA system for water supply system. Item: 2: Training/ Workshop (In country): 2 workshops x(5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 2 = \$ 12,250	
Total		\$148,750

11.3.6 Budget breakdown for 2.1.3.3

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$28,500
	Description Output 2.1, Activity 2.1.3: Promote climate risk informed planning of water supply through the assessment of existing treatment plants and implementation of remedial measures for Paro and Thimphu Thromde. Item: 4: Procurement of Equipment. Calculation: unit cost \$ 28,500 x 1 = \$ 28,500	
2	Local Consultants	\$18,500
	Description Output 2.1, Activity 2.1.3: Promote climate risk informed planning of water supply through the assessment of existing treatment plants and implementation of remedial measures for Paro and Thimphu Thromde. Item: 1: Local consultant, for assessment of existing water supply networks and plants). Calculation: unit cost \$ 450 x 41 = \$ 18,500	
3	Training, Workshops, Meetings	\$6,125
	Description Output 2.1, Activity 2.1.3: Promote climate risk informed planning of water supply through the assessment of existing treatment plants and implementation of remedial measures for Paro and Thimphu Thromde. Item: 3: Training/ Workshop (In country): 1 workshop x(5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 1 = \$ 6,125	
4	Travel	\$875
	Description Output 2.1, Activity 2.1.3: Promote climate risk informed planning of water supply through the assessment of existing treatment plants and implementation of remedial measures for Paro and Thimphu Thromde. Item: 2: Travel. Calculation: unit cost \$ 875 x 1 = \$ 875	
Total		\$54,000

11.3.7 Budget breakdown for 2.1.3.4

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$20,000
	Description Output 2.1, Activity 2.1.3: Ensure uninterrupted safe water supply through appropriate interventions to combat climate change in Thimphu and Paro municipalities. Item: 4: Procurement of Equipment: equipment to implement the Non Revenue Water remedial measures. Calculation: unit cost \$ 20,000 x 1 = \$ 20,000	
2	Contractual services-Company	\$970,000
	Description Output 2.1, Activity 2.1.3: Installation of sensors and SCADA system for water supply system. Item: 1: Contractual services - companies, for Installation of sensors and SCADA system. Calculation: unit cost \$ 136,500 x 1 = \$ 136,500 Output 2.1, Activity 2.1.3: Ensure uninterrupted safe water supply through appropriate interventions to combat climate change in Thimphu and Paro municipalities. Item: 1: Contractual services - companies, to construct climate resilient water supply infrastructure and NRW). Calculation: unit cost \$ 970,000 x 1 = \$ 970,000	
3	Local Consultants	\$40,000
	Description Output 2.1, Activity 2.1.3: Ensure uninterrupted safe water supply through appropriate interventions to combat climate change in Thimphu and Paro municipalities. Item: 2: Local consultant. Calculation: unit cost \$ 450 x 89 = \$ 40,000	
Total		\$1,030,000



Chapter IX

Watching the Skies and Tributaries

12. NCHM

12.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.4.3.7	Train forecast-based EWS modelling	\$25,000			1 yr	1 yr	1 yr	1 yr																		
2	1.4.3.8	Train on weather data downscaling	\$15,000			0.5 yr	0.5 yr																				
3	2.4.1.1	Create Paro, Thimphu flood forecasting model	\$40,000									2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2							
4	2.4.1.2	Integrate weather data into model	\$1,000									1 yr	1 yr	1 yr	1 yr												
5	2.4.1.3	Build web-based flood warning platform	\$120,000									2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2							
6	2.4.2.1	Install stream gauges and sensors	\$220,000			1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr																
7	2.4.2.2	Setup water monitoring stations	\$260,000			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr												
8	2.4.2.3	Rehabilitate critical hydromet stations	\$40,000							2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr								
9	2.4.3.1	Create EWS SOPs and protocols	\$1,000																	0.75 yr	0.75 yr	0.75 yr					
10	2.4.3.2	Raise flood risk awareness	\$8,000																					1 yr	1 yr	1 yr	
Total			\$730,000																								

12.2.1 Activity Brief for 1.4.3.7 & 8

GENERAL ACTIVITY INFORMATION	Activity No.: 1.4.3 Sub Activity No.: 1.4.3.7 & 1.4.3.8
Activity Name (As stated in ProDoc)	1.4.3 Implementation of training programs for professionals and workers. 1.4.3.7 Training on the Forecast-based EWS modeling and its integration into the existing flood forecasting system. 1.4.3.8 Training on weather (wrf) data downscaling and assimilation into flood forecasting system (EWS)
Location	International
Expected start date	1 July 2025
Completion date	31 December 2025
Approved budget	USD 40,000 (1.4.3.7 - \$ 25,000 and 1.4.3.8 - \$ 15,000) Nu. 3,324,400
Responsible Parties	NCHM
Focal Person	Tandin Wangchuk, Dy. Chief Hydromet Officer, tandinw@nchm.gov.bt, 77888545
ACTIVITY DETAILS	
Activity Background	Capacity building enhances officials' skills and competence, addressing sustainability by targeting relevant agencies and developing succession plans. Customized technical training for NCHM and related agencies in flood forecasting and warning are proposed. This investment in human capital is crucial for individual and organizational success
Activity Description	The development and integration of a flood forecasting model into the existing system requires advanced technical skills and hydrological expertise. Training will be provided to hydrology and ICT officers at NCHM to enhance their capabilities in modeling, data assimilation, and operationalizing the Flood Early Warning System (FEWS). This initiative aims to build a competent team capable of replicating FEWS in other river basins. The training will precede hydrological model development. Currently, NCHM operates two versions of the wrf model—15 km and 3 km resolutions—but these overlook finer-scale topographic and meteorological details. Dynamic downscaling to a 1 km resolution will improve weather and flood forecasting accuracy, enhancing the EWS
Objectives	1. To train NCHM officials and build capacity in hydrological modelling and weather data downscaling. 2. Enhance the capacity for data integration into existing flood forecasting systems
Scope	Inclusion: • Training on hydrological modelling for EWS • Training on wrf data downscaling • Training on the integration of wrf data with the EWS system Exclusion: • Capacity building unrelated to EWS modelling
Key requirements	• Technical capacity of NCHM to develop models and operate • Identification of relevant institutes and courses for the training

Expected benefits	• Improved flood forecasting and early warning capabilities benefit populations in Paro and Thimphu Dzongkhags, including vulnerable groups. • Strengthened the institutional capacity of NCHM
Key milestones	• December 2025: All the training and capacity building will be completed
Activity Risks	No major risks.
Activity EXIT criteria	1. Relevant officials trained and capacity enhanced to perform EWS modelling
Prepared by	Tandin Wangchuk, Dy. Chief Hydromet Officer, Submitted on May 20, 2025

12.2.2 Activity Brief for 2.4.1

GENERAL ACTIVITY INFORMATION	Activity No.: 2.4.1 Sub-Activity No.: 2.4.1.1, 2.4.1.2 & 2.4.1.3
Activity Name (As stated in ProDoc)	2.4.1: Develop a forecast-based flood EWS in flood-prone areas in the tributaries of the Thimchhu and Pachhu river basins. 2.4.1.1: Develop a flood forecasting model for the Paro and Thimphu River basins, including tributaries 2.4.1.2: Integration of downscaled wrf to the flood forecasting model of EWS 2.4.1.3: Development of Flood Warning dissemination platform (web-based) for EWS
Location	Thimchhu and Pacchu basin
Expected start date	1 July 2027
Completion date	31 December 2028
Approved budget	USD 161,000 (2.4.1.1 - \$ 40,000 2.4.1.2 \$ 1,000 & 2.4.1.3 \$ 120,000) Nu. 13,380,710
Responsible Parties	NCHM
Focal Person	Tandin Wangchuk, Dy. Chief Hydromet Officer, tandinw@nchm.gov.bt, 77888545
ACTIVITY DETAILS	
Activity Background	Flood-prone tributaries in the Thimchhu and Pachhu basins experience rapid-onset floods with very short lead times, rendering traditional detection-based EWS insufficient. Previous projects have focused on main river channels, leaving critical tributaries vulnerable. This activity directly addresses this gap by developing a forecast-based EWS, leveraging NCHM's existing infrastructure and aligning with the 13 FYP's goal to strengthen hydrological and GLOF early warning services.
Activity Description	The NCHM will develop a fully distributed flood forecasting model for the Thimchhu and Pachhu basins, including their tributaries, using the Hydrologic Modeling System (HEC-HMS) to improve prediction accuracy. This model will be enhanced by integrating downscaled Numerical Weather Prediction (NWP) data from the wrf system, enabling better prediction of extreme rainfall events that trigger flash floods. To support this, the NCHM will procure advanced computing infrastructure for real-time data assimilation, model calibration, and visualization. Additionally, a user-friendly, web-based platform will be developed to facilitate real-time monitoring and dissemination of flood warnings to stakeholders. Technical assistance from international experts will be engaged to ensure seamless system integration and capacity building within the NCHM. This initiative aims to establish a threshold-based EWS that significantly enhances flood forecasting and emergency preparedness in the targeted basins.
Objectives	1. Establish rainfall threshold-based EWS in the Pachhu and Thimchhu basins 2. Enhance flood forecasting accuracy through advanced hydrologic modeling and weather data integration 3. Build technical capacity within NCHM for sustainable EWS operation

Scope	Inclusion: • Development and operationalization of a flood forecasting model for the Thimchhu and Pachhu basins • Creation of a platform for real-time data visualization and flood monitoring • Procurement of necessary hardware and software for system implementation Exclusion: • Flood forecasting systems outside the specified basins • Infrastructure development unrelated to flood forecasting and EWS
Key requirements	• Technical capacity building within NCHM for hydrologic modeling and data integration • Engagement of an international consulting firm for system development and technical assistance • Procurement of high-end computing equipment and servers
Expected benefits	• Improved flood preparedness and risk reduction for communities in flood-prone tributaries of the Thimchhu and Pachhu basins • Enhanced early warning capabilities contributing to disaster resilience and safety
Key milestones	• End of 2027: Flood forecasting model operational. • 2028: Forecast-based EWS fully established.
Activity Risks	No major risk identified at this stage
Activity EXIT criteria	1. Forecast-based EWS operational with a fully developed user interface for data visualization and warning dissemination.
Prepared by	Tandin Wangchuk, Dy. Chief Hydromet Officer, Submitted on May 20, 2025

12.2.3 Activity Brief for 2.4.2

GENERAL ACTIVITY INFORMATION	Activity No.: 2.4.2 Sub-Activity No.: 2.4.2.1, 2.4.2.2 & 2.4.2.3
Activity Name (As stated in ProDoc)	2.4.2 Enhance hydrometeorological monitoring stations in Pachhu and Thimchhu basin. 2.4.2.1: Establishment of short-term and long-term stream gauging stations with ambient water quality monitoring sensors 2.4.2.2: Establishment of Weather and climate monitoring station in high altitude and Urban areas 2.4.2.3: Rehabilitation of critical hydromet stations in Paro and Thimphu
Location	Paro Dzongkhag, Thim Throm, Thimphu Dzongkhag
Expected start date	1 July 2025
Completion date	31 December 2027
Approved budget	USD 520,000 (2.4.2.1- \$ 220,000, 2.4.2.2- \$ 260,000 & 2.4.2.3 \$ 40,000) Nu. 43,217,200
Responsible Parties	NCHM (RP), Paro and Thimphu Dzongkhag (CP)
Focal Person	Tandin Wangchuk, Dy. Chief Hydromet Officer, tandinw@nchm.gov.bt, 77888545
ACTIVITY DETAILS	
Activity Background	Effective flood forecasting and EWS depend on robust hydrometeorological data. Existing stations are concentrated along main river channels, leaving tributaries and high-altitude areas inadequately monitored. This activity modernizes and expands the hydromet network, addressing these gaps and supporting climate adaptation and risk management.
Activity Description	This activity focuses on strengthening the hydrometeorological monitoring network within the Pachhu and Thimchhu river basins to support improved flood forecasting and climate data collection. It involves installing four new stream gauging stations equipped with ambient water quality sensors on critical tributaries prone to flash floods, as well as establishing five new weather and climate monitoring stations strategically located in high-altitude and urban areas to capture diverse meteorological conditions. Additionally, two existing critical hydromet stations in Paro and Thimphu will be rehabilitated and upgraded with modern sensors and technologies. All newly installed and rehabilitated stations will be integrated into NCHM's central database for real-time data reporting. This activity will engage local or international firms for installation, testing, and commissioning to ensure sustainability. By expanding and modernizing the hydromet network, this initiative will fill existing monitoring gaps, improve flood prediction accuracy, and strengthen institutional capacity for disaster risk management.
Objectives	1. Enhance hydromet monitoring through a well-distributed, resilient network for effective EWS. 2. Improve the flood forecasting system with integrated high-altitude stations 3. Upgrade existing stations to increase data quality and system resilience.

Scope	Inclusion: • Installation of automatic water level and weather monitoring stations. • Rehabilitation and modernization of existing hydromet stations. • Data integration and reporting to NCHM's central database. Exclusion: • Installation of warning siren stations.
Key requirements	• Technical capacity of NCHM to operate and maintain the monitoring stations. • Engagement of local companies for delivery of products and services. • Timely procurement and installation processes.
Expected benefits	• Improved flood forecasting and early warning capabilities benefiting populations in Paro and Thimphu Dzongkhags, including vulnerable groups. • Enhanced climate data for adaptation planning and water resource management. • Strengthened the institutional capacity of NCHM and LGs.
Key milestones	• 30 December 2026: Establishment of automatic water level stations. • 30 December 2027: Completion of automatic weather station installations. • 30 December 2027: Rehabilitation of critical hydromet stations completed.
Activity Risks	Risk 1: Potential delays in equipment procurement Mitigation: Initiating early tendering processes.
Activity EXIT criteria	1. Full operation of hydromet stations with continuous data reporting to NCHM's central database. 2. Completion of all installation and rehabilitation milestones as scheduled.
Prepared by	Tandin Wangchuk, Dy. Chief Hydromet Officer, Submitted on May 20, 2025

12.2.4 Activity Brief for 2.4.3

GENERAL ACTIVITY INFORMATION	Activity No.: 2.4.3 Sub-Activity No.: 2.4.3.1 & 2.4.3.2
Activity Name (As stated in ProDoc)	2.4.3: Develop a Standard Operations and Maintenance manual of EWS, and train staff and relevant community members. 2.4.3.1: Develop Standard Operating Procedure (SOP) for operation, maintenance, and information dissemination protocol for the EWS 2.4.3.2: Sensitization on the flood risk and management to relevant stakeholders through a participatory approach to enhance resilience against flood risk
Location	NCHM and communities of Paro Dzongkhag, Thim Throm, Thimphu Dzongkhag
Expected start date	1 April 2029
Completion date	31 June 2030
Approved budget	USD 9,000 (2.4.3.1 - \$ 1,000 & 2.4.3.2 - \$ 8,000) Nu. 747,990
Responsible Parties	NCHM (RP), Paro and Thimphu Dzongkhag (CP)
Focal Person	Tandin Wangchuk, Dy. Chief Hydromet Officer, tandinw@nchm.gov.bt, 77888545
ACTIVITY DETAILS	
Activity Background	With the expansion of EWS infrastructure, there is a critical need for standardized procedures and community awareness to ensure effective operation and maximize benefits. Existing SOPs do not address the specific needs of the Thimphu-Paro region's new EWS. This activity leverages the operational system to build local preparedness and institutional coordination.
Activity Description	To ensure the effective operation and sustainability of the flood early warning system in the Thimphu-Paro region, this activity will develop comprehensive SOPs tailored specifically for the operation, maintenance, and information dissemination protocols of the EWS. The SOP will clearly define roles and responsibilities for all stakeholders involved in flood monitoring, detection, and alert dissemination, fostering coordinated and timely responses during flood events. In parallel, a participatory approach will be employed to conduct awareness and sensitization programs targeting vulnerable communities, including women and marginalized groups, to increase their understanding of flood risks and the benefits of the EWS. The activity will also include training sessions for officials from NCHM, the Department of Hydromet Services, and LGs to build their capacity in flood forecasting, warning dissemination, and disaster management. By formalizing operational procedures and enhancing community and institutional preparedness, this activity aims to maximize the effectiveness of the EWS and improve flood resilience throughout the region.
Objectives	1. Develop and publish SOP for the operation and maintenance of the Thimphu-Paro Flood EWS 2. Enhance community awareness and preparedness regarding flood risks and EWS benefits 3. Build institutional capacity for effective flood response

Scope	Inclusion: • Development of SOP document. • Community awareness programs; • Training sessions for officials. Exclusion: • SOP development and awareness programs outside Thimphu and Paro; • EWS infrastructure upgrades
Key requirements	• Technical expertise within NCHM for SOP development • Active participation from LGs for community awareness and training • Coordination among NCHM, DLDGM, and local authorities
Expected benefits	• Enhanced flood preparedness and resilience among vulnerable populations in Paro and Thimphu Dzongkhags, including women and other marginalized groups as per ECRUL Project indicators • Improved institutional coordination and capacity for flood response • Increased community awareness for timely and effective EWS use
Key milestones	• 31 December 2029: SOP development completed • 30 June 2030: Community awareness programs conducted • 30 June 2030: Training sessions for officials completed
Activity Risks	Minimal risks identified.
Activity EXIT criteria	1. SOP for Thimphu-Paro Flood EWS is formally published and disseminated 2. Community members in the project area demonstrate awareness and understanding of the EWS 3. Relevant officials trained and capable of operating and maintaining the EWS
Prepared by	Tandin Wangchuk, Dy. Chief Hydromet Officer, Submitted on 20 May 2025

12.3.1 Budget breakdown for 1.4.3.7

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$9,400
	Description Output 1.4, Activity 1.4.3: Training on the Forecast based EWS modelling and its integration into the existing flood forecasting system. Item: Contractual services (tuition fee). Calculation: unit cost \$ 940 x 10 = \$ 9,400.	
2	Training, Workshops, Meetings	\$15,600
	Description Output 1.4, Activity 1.4.3: Training on weather (wrf) data downscaling and assimilation into flood forecasting system (EWS) Item: Ex-country- capacity building of relevant officials on weather data downscaling and integration into EWS 4 days x 220 (DSA) x 3 participants + Air Fare (3000 per head). Calculation: unit cost \$ 11,800 x 1 = \$ 11,800	
Total		\$25,000

12.3.2 Budget breakdown for 1.4.3.8

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$3,200
	Description Output 1.4, Activity 1.4.3: Training on weather (wrf) data downscaling and assimilation into flood forecasting system (EWS) Item: Contractual services (tuition fee). Calculation: unit cost \$ 800 x 4 = \$ 3,200	
2	Training, Workshops, Meetings	\$11,800
	Description Output 1.4, Activity 1.4.3: Training on weather (wrf) data downscaling and assimilation into flood forecasting system (EWS) Item: Ex-country- capacity building of relevant officials on weather data downscaling and integration into EWS 4 days x 220 (DSA) x 3 participants + Air Fare (3000 per head). Calculation: unit cost \$ 11,800 x 1 = \$ 11,800	
Total		\$15,000

12.3.3 Budget breakdown for 2.4.1

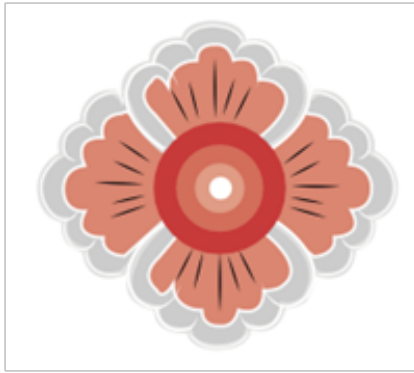
SN	Budget Items	ECRUL budget in USD
1	Equipment	\$60,000
	Description Output 2.4, Activity 2.4.1: Development of Flood Warning dissemination platform [web based] for EWS. Item: 2: Procurement of Materials and Goods for EWS modelling, system hosting and operation. Calculation: unit cost \$ 60,000 x 1 = \$ 60,000	
2	Contractual services-Company	\$80,000
	Description Output 2.4, Activity 2.4.1: Develop flood forecasting model for Paro and Thimphu river basin including tributaries Item: 1: International Consultant to develop flood forecasting model. Calculation: unit cost \$ 1,000 x 30 = \$ 30,000 Output 2.4, Activity 2.4.1: Development of Flood Warning dissemination platform [web based] for EWS Item: 1: International Consulting firm. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
3	Training, Workshops, Meetings	\$21,000
	Description Output 2.4, Activity 2.4.1: Develop flood forecasting model for Paro and Thimphu river basin including tributaries Item: 2: Training/Workshops: 2 workshop, 5 day each (8 participants x 110 (DSA+food+lodge) + hall charge (125 x 5). Calculation: unit cost \$ 5,000 x 2 = \$ 10,000 Output 2.4, Activity 2.4.1: Integration of down scaled weather forecasting data (Wrf) to the flood forecasting model of EWS Item: 1: Training/Workshops: 1 workshop, 2 day (4 participants x 110 (DSA+food+lodge) + hall charge (125 x 2). Calculation: unit cost \$ 1,000 x 1 = \$ 1,000 Output 2.4, Activity 2.4.1: Development of Flood Warning dissemination platform [web based] for EWS Item: 3: Training/Workshops: 2 workshops, 5 days each (8 participants x 110 (DSA+food+lodge) + hall charge (125 x 5). Calculation: unit cost \$ 5,000 x 2 = \$ 10,000	
Total		\$161,000

12.3.4 Budget breakdown for 2.4.2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$345,000
	Description Output 2.4, Activity 2.4.2: Establishment of short-long term stream gauging stations with ambient water quality monitoring sensors Item: 3: Procurement of Equipment: water level stations (sensors, data logger, communication modem) for setting up automatic river gauging stations. These stations will be established in streams where the current NCHM network is unavailable. Calculation: unit cost \$ 155,000 x 1 = \$ 155,000 Output 2.4, Activity 2.4.2: Establishment of Weather and climate monitoring stations in high altitude and Urban areas Item: 3: Procurement of Equipment: weather monitoring equipment (sensors, data logger, communication modem) for setting up automatic weather stations. These stations will be established in high altitude regions where the current NCHM network is unavailable. Calculation: unit cost \$ 170,000 x 1 = \$ 170,000 Output 2.4, Activity 2.4.2: Rehabilitation of critical hydro met stations in Paro and Thimphu Item: 2: Procurement of Equipment: rehabilitation of two existing stations (1 Paro, 1 Thimphu). The worn-out sensors will be replaced and new sensors (radar sensor) will be installed for data accuracy and efficiency. Calculation: unit cost \$ 20,000 x 1 = \$ 20,000	
2	Contractual services-Company	\$169,000
	Description Output 2.4, Activity 2.4.2: Establishment of short-long term stream gauging stations with ambient water quality monitoring sensors Item: 2: Contractual services-Companies to establish short-long term stream gauging stations with ambient water quality monitoring sensors. Calculation: unit cost \$ 64,000 x 1 = \$ 64,000 Output 2.4, Activity 2.4.2: Establishment of Weather and climate monitoring station in high altitude and Urban areas Item: 2: Contractual services-Companies for establishment of Weather and climate monitoring station. Calculation: unit cost \$ 85,000 x 1 = \$ 85,000 Output 2.4, Activity 2.4.2: Rehabilitation of critical hydro met stations in Paro and Thimphu Item: 1: Contractual services-Companies to rehabilitate critical hydromet stations. Calculation: unit cost \$ 20,000 x 1 = \$ 20,000	
3	Training, Workshops, Meetings	\$6,000
	Description Output 2.4, Activity 2.4.2: Establishment of short-long term stream gauging stations with ambient water quality monitoring sensors Item: 1: Travel. Calculation: unit cost \$ 1,000 x 1 = \$ 1,000 Output 2.4, Activity 2.4.2: Establishment of Weather and climate monitoring station in high altitude and Urban areas Item: 1: Travel. Calculation: unit cost \$ 5,000 x 1 = \$ 5,000	
Total		\$520,000

12.3.5 Budget breakdown for 2.4.3

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$9,000
	Description Output 2.4, Activity 2.4.3: Develop Standard Operating Procedure (SOP) for operation, maintenance and information dissemination protocol for the EWSItem: 1: Training /Workshops - SOP Development: 1 workshop, 1 day (8 participants x 110 (DSA+food+lodge) + hall charge (125 x 1). Calculation: unit cost \$ 1,000 x 1 = \$ 1,000 Output 2.4, Activity 2.4.3: Sensitization on the flood risk and management to relevant stakeholders through participatory approach to enhance resiliency against flood riskItem: 1: Training/Workshops - Public Consultation: 2 workshops x 1 day each (35 participants @ 110 (DSA, Food, Lodge) + hall charge (125 x 1). Calculation: unit cost \$ 8,000 x 1 = \$ 8,000	
Total		\$9,000



Chapter X

Defending the Green Barriers

13. DoFPS-MoENR

13.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	2.2.1.2	Create firelines along urban borders	\$84,450			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr								
Total			\$84,450																								



13.2.1 Activity Brief for 2.2.1.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.2.1.2
Activity Name (As stated in ProDoc)	Creation of fire line to control forest fire along Thimphu and Paro Municipal Boundary
Location	Thimphu and Paro
Expected start date	July 2025
Completion date	June 2026
Approved budget	USD 84,450 Nu. 7,018,639.50
Responsible Parties	DoFPS-MoENR
Focal Person	Ram Bahadur Mongar, Dy. Chief Forestry Officer, rbmongaar@moenr.gov.bt, 77310882; Karma Chorten Dendup, Sr. Forestry Officer, kcdendup@moenr.gov.bt, 17779619
ACTIVITY DETAILS	
Activity Background	Frequent forest fires in the urban periphery of Thimphu and Paro have posed significant threats to life, property, and biodiversity. These areas are home to important monasteries, dzongs, and heritage sites, making fire incidents particularly alarming. Despite ongoing mitigation efforts, existing measures have proven insufficient. There is a clear need for reinforced preventive strategies. The creation of fire lines is therefore essential to minimize future risks and protect both people and critical assets in these regions.
Activity Description	This activity involves the construction of a strategic fire line along the municipal boundaries of Thimphu and Paro to protect critical structures, landscapes, and communities from recurring forest fire threats. In Thimphu, the fire line will be established around Samtenling, Sangaygang, Buddha Point (Kuenselphodrang), and Depsi, while in Paro, it will cover Sangchorkhor, Bondey, and Shaba. The initiative focuses on fire prevention, infrastructure resilience, protection of cultural heritage, urban spaces, and biodiversity. The project will be executed collaboratively with LGs, the Department of Culture and Dzongkha Development, and disaster management authorities. The fire line will span a total of 8 km (4 km each in Thimphu and Paro) serving as a robust barrier to limit fire spread and enhance community safety. To address water shortages during fire suppression, strategically placed nature-based solution pond/tank reservoirs will be built at key hotspot locations in Thimphu and Paro, ensuring sustainable water storage solutions.
Objectives	1. Limit the spread of forest fires and protect vulnerable areas from potential fire hazards through the creation of strategic fire lines. 2. Safeguard cultural and historical sites from fire damage. 3. Enhance resilience of urban and peri-urban infrastructure against wildfire risks. 4. Ensure the safety of local communities and visitors by minimizing fire hazards. 5. Maintain ecological balance by preventing uncontrolled fires from spreading.

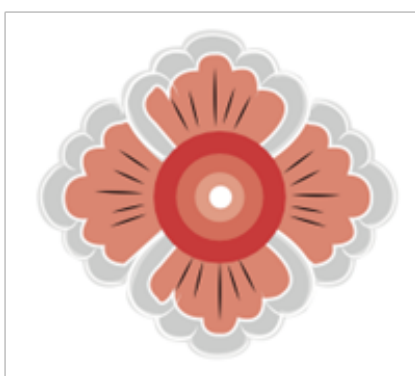
Scope	Inclusion: • Creation of an 8 km fire line of hybrid model Nbs and traditional methods (Green Firebreaks and mechanical fuel reduction). (4 km each in Thimphu and Paro). • Targeted protection of critical sites, including monasteries, dzongs, and heritage structures. • Collaboration with LGs and relevant departments for effective implementation. • NbS pond/tank reservoir construction. • Procurement of firefighting tools and equipment. • Community awareness and capacity-building workshops. Exclusion: • Fire line construction outside the identified areas. • Direct reforestation or restoration activities post-fire line creation. • Firefighting operations beyond the scope of this preventive measure.
Key requirements	• Technical expertise in fire line creation and fire management. • Coordination with local authorities and relevant stakeholders. • Procurement of necessary tools, equipment, and safety gears. • Environmental impact assessment and mitigation planning. • Community engagement and awareness programs.
Expected benefits	• 8 km of firebreak was created (4 km in Thimphu, 4 km in Paro). • Enhanced protection of over 10,000 residents (including women, men, children, and vulnerable groups) and critical heritage sites. • Reduced risk of fire-related damages to infrastructure (cultural sites and monuments) and biodiversity. • Firefighter equipped with basic tools and equipment to respond to fire effectively.
Key milestones	• By the end of July and first week of August 2025: Two workshops conducted. • September to November 2025: Contractual services for creation of fire line completed. • Q3 and Q4, 2025: Procurement of plants and equipment for fire suppression
Activity Risks	Risk 1: Soil erosion and landslides: Removing vegetation to create firebreaks can increase erosion, especially on steep slopes. Mitigation: Implement soil stabilization and erosion control measures. Risk 2: Reduced effectiveness in extreme conditions: Embers may jump firebreaks during severe fires. Mitigation: Integrate fire line with additional fire management strategies and rapid response teams.

Activity Briefs

Activity EXIT criteria	Success criteria: 1. 8 km fire line created to safeguard important infrastructure and heritage sites 2. NbS pond/tank reservoirs constructed at strategic locations 3. Tools procured for firefighting suppression 4. 8 km fire line created as per specification. 5. Firefighting tools and equipment procured and deployed. 6. All targeted infrastructure and heritage sites within the designated area are protected by the fire line. 7. Community and stakeholders trained and engaged in fire prevention.
Prepared by	Ram Bahadur Mongar, Dy. Chief Forestry Officer, Submitted on May 26, 2025

13.3.1 Budget breakdown for 2.2.1.2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$15,000
	Description Output 2.2, Activity 2.2.1: Creation of fireline to control forest fire along Thimphu and Paro Municipal Boundary. Item: 3: Procurement plants and equipment for fire suppression. Calculation: unit cost \$ 15,000 x 1 = \$ 15,000	
2	Contractual services-Company	\$57,000
	Description Output 2.2, Activity 2.2.1: Creation of fireline to control forest fire along Thimphu and Paro Municipal Boundary. Item: 2: Contractual services- (Companies for Creation and maintenance of fireline (6km) and development of NbS reservoirs/ponds in high fire prone and sensitive areas). Calculation: unit cost \$ 57,000 x 1 = \$ 57,000	
3	Workshop	\$12,450
	Description Output 2.2, Activity 2.2.1: Creation of fireline to control forest fire along Thimphu and Paro Municipal Boundary. Item: 1: Workshop (2 days- one in paro and one in Thimphu): 2 x (1 day x 10 people @ \$ 110), Hall- \$ 125. Calculation: unit cost \$ 1,225 x 2 = \$ 2,450. Output 1.4, Activity 1.4.3: Awareness and hands-on training on use of fire fighting equipment and fire suppression techniques Item: Training for 100 people. Calculation: unit cost \$ 10,000 x 1 = \$ 10,000	
Total		\$84,450



Chapter XI

Building Strong Foundations

14. GLD, DHS-MoIT

14.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																													
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y1 Yr	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y2 Yr	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y3 Yr	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y4 Yr	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y5 Yr	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	
1	1.2.1.1	Analyze GIS usage and gaps	\$17,500			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr																
2	1.2.1.2	Evaluate hardware and software, recommend necessary upgrades	\$17,500			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr																
3	1.2.2.1	Customize existing GIS hosting systems	\$80,000															4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	4 yr	
4	1.2.2.2	Procure and install climate GIS technology	\$80,000					2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr																
5	1.2.2.3	Produce maps via data analysis	\$130,000							3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr					
6	1.2.3.1	Create GIS operation manual	\$64,000																							2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr
7	1.2.3.2	Train GIS officials on climate	\$250,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr										
Total			\$639,000																														



14.2.1 Activity Brief for 1.2.1

GENERAL ACTIVITY INFORMATION	Activity No.: 1.2.1 Sub- Activity No.: 1.2.1.1 and 1.2.1.2
Activity Name (As stated in Pro Doc)	1.2.1: Assessment of existing GIS systems / identification of gaps in the current management of relevant data, especially relating to downscaled vulnerability data and climate impacts and hazard maps. 1.2.1.1: Analysis of existing GIS system (usage, datasets), including identification of climate and vulnerability related information gaps. 1.2.1.2: Assessment of current hardware and software functionalities with the identification of necessary upgrades.
Location	Soft Component
Expected start date	1 July 2025
Completion date	31 December 2027
Approved budget	USD 35,000 Nu. 2,908,850
Responsible Parties	GLD, DHS-MoIT
Focal Person	Yeshe Nidup, Sr. GIS Officer, ynidup@moit.gov.bt, 17549040
ACTIVITY DETAILS	
Activity Background	Agencies in Bhutan rely on GIS tools to support data-driven planning, but many institutions face limitations due to outdated hardware, insufficient storage, and basic software that cannot handle advanced spatial analysis. Additionally, access to high-quality, up-to-date spatial and climate-related data remains limited, further constraining effective analysis. As the demand for climate-informed planning grows, strengthening the technical capacity of GIS infrastructure is essential to support more complex and timely analysis.
Activity Description	This activity will assess the current hardware and software environment used for GIS operations, including computing power, server infrastructure, data storage systems, and the functionality of installed GIS applications. The assessment will also examine the availability, quality, and accessibility of spatial and climate-related datasets, identifying key data gaps that limit comprehensive analysis. These technical and data-related limitations hinder effective data processing and climate vulnerability mapping. Based on the findings, the activity will provide targeted recommendations for system and data upgrades, enabling professionals to use GIS more effectively in climate-resilient urban development.
Objectives	1. Assess the current usage of GIS systems and identify existing datasets relevant to urban planning and climate risk management. 2. Identify critical gaps in climate and vulnerability-related geospatial data that hinder risk-informed urban planning. 3. Evaluate the functionality and capacity of existing GIS hardware and software used by agencies. 4. Recommend data, hardware, and software upgrades required to establish a robust climate-sensitive GIS system that supports resilient urban development.

Scope	Inclusion: • Review and analyze the existing GIS systems used by agencies, including data types, sources, and current applications in planning processes. • Identify and document gaps in geospatial data related to climate hazards, exposure, vulnerability, and adaptive capacity. • Assess the current GIS hardware and software infrastructure, including computing power, storage capacity, software tools, and network systems. • Provide actionable recommendations for data enhancement, system upgrades, and capacity-building needs to support the integration of climate risk information into urban planning. Exclusion: • Implementation of hardware or software upgrades (recommendations only, not procurement/installation) • Development of new datasets (focus is on assessment and identification of gaps, not data collection) • Ongoing maintenance or support for GIS systems post-assessment
Key requirements	• Organization of three or more workshops, bringing together all GIS focal persons from relevant stakeholder agencies. • Access to existing GIS systems, datasets, and infrastructure for assessment. • Engagement and active participation from all relevant stakeholders.
Expected benefits	• Improved access to reliable and climate-relevant geospatial data for planners, enabling more informed and risk-sensitive urban development decisions. • Strengthened institutional capacity through targeted system upgrades and collaborative workshops involving GIS focal persons from key stakeholder agencies. • Enhanced coordination and data sharing among agencies, promoting the development of a standardized and interoperable GIS framework. • Increased resilience of urban areas through the integration of climate risk and vulnerability data into planning and policy formulation. • Beneficiaries: Planners and decision-makers in urban development, with positive impacts for both men and women in line with ECRUL Project objectives and outcomes
Key milestones	• By 30 June 2026: Review and validation of current GIS system usage and datasets, and identification of climate and vulnerability-related data gaps, hardware, and software completed. • By 31 March 2027: Presentation of climate datasets, hardware and software assessment results, and development of recommendations and action plan during the second workshop.
Activity Risks	Risk 1: Some agencies may have outdated, incompatible, or missing GIS and climate-related datasets, hindering accurate analysis and identification of information gaps. Mitigation: Early engagement with all stakeholders to ensure access to available data; use of standardized assessment tools; provision of clear guidance and support during workshops to facilitate information sharing.

Activity Briefs

Activity EXIT criteria	Success criteria: 1. Completion of GIS system usage and dataset analysis report and submission of hardware and software assessment report. 2. Successful conduct of two stakeholder workshops, with active participation from GIS focal persons representing all relevant agencies. Conditions for Completion: 1. All assessment reports are finalized and disseminated. 2. Recommendations and action plans are validated by stakeholders. 3. Workshop outcomes are documented and shared with responsible parties.
Prepared by	Yeshe Nidup, Sr. GIS Officer, Submitted on May 27, 2025

14.2.2 Activity Brief for 1.2.2.1

GENERAL ACTIVITY INFORMATION	Sub- Activity No.: 1.2.2.1
Activity Name (As stated in Pro Doc)	Customization or enhancement of the existing systems for hosting the products (maps, charts, information etc.) of this project.
Location	NA
Expected start date	1 January 2027
Completion date	31 December 2030
Approved budget	USD 80,000 Nu. 6,648,800
Responsible Parties	GLD, DHS-MoIT
Focal Person	Yeshi Nidup, Sr. GIS Officer, ynidup@moit.gov.bt, 17549040
ACTIVITY DETAILS	
Activity Background	Bhutan currently faces challenges in effectively sharing and visualizing geospatial and climate-related data due to limited functionality of existing departmental systems. These systems do not adequately support interactive products such as dynamic maps, charts, and spatial datasets. To improve accessibility, usability, and sustainability of project outputs, there is a critical need to customize and enhance these platforms leveraging both international and local expertise.
Activity Description	This activity involves the customization and enhancement of existing geospatial systems to efficiently host and display project outputs, including maps, charts, datasets, and other spatial information. An international consulting firm will be engaged to provide technical expertise aligned with global best practices, while a local consulting firm will ensure integration with national platforms and localization. Additionally, secure and scalable cloud hosting services will be procured to guarantee reliable access, data security, and long-term sustainability of the system. The enhanced platform will facilitate improved data sharing, visualization, and climate information analysis for stakeholders.
Objectives	1. Customize and enhance existing systems for effective hosting and visualization of climate-related geospatial products. 2. Procure and implement secure, scalable cloud infrastructure ensuring reliable and sustainable access. 3. Integrate international best practices and local requirements through expert consultancy support.
Scope	Inclusion: • Customization and enhancement of current geospatial platforms. • Integration of interactive tools for data sharing, visualization, and analysis. • Procurement and setup of cloud hosting services. • Engagement of international and local consulting firms for system development and integration. Exclusion: • Development of new geospatial data collection systems. • Infrastructure development outside the digital platform scope.
Key requirements	• Hire international firm for climate data and geo-platform expertise. • Contract local firm for system localization and integration support. • Procure secure, scalable cloud hosting infrastructure. • Conduct stakeholder consultations for requirements and system design.

Activity Briefs

Expected benefits	• Improved accessibility and usability of climate-related geospatial data for decision-makers and stakeholders. • Enhanced capacity for climate resilience planning and monitoring. • Beneficiaries include govt. agencies, climate planners, researchers, and local communities benefiting from improved climate information services.
Key milestones	• 31 Dec 2028 – Completion of system design and customization plan including stakeholder consultations • 31 Dec 2029 – Procurement and setup of cloud hosting infrastructure ensuring security and scalability • 31 Dec 2030 – Development and integration of data visualization tools (interactive maps, charts, dashboards) • 31 Dec 2030 – Official launch of the enhanced platform with live access to project outputs
Activity Risks	Risk 1: Potential delays in consultancy engagement or cloud infra procurement. Mitigation: Early procurement planning, clear ToR, and continuous stakeholder engagement. Assumption: Project implementers will adopt climate-resilient approaches and support system integration.
Activity EXIT criteria	1. The enhanced system is fully developed, rigorously tested, and deployed on a secure cloud platform. 2. All functional and technical requirements are met, ensuring reliable, scalable, and sustainable access to climate-related geospatial products.
Prepared by	Yeshe Nidup, GLD-DHS, Submitted on May 27, 2025

14.2.3 Activity Brief for 1.2.1.2

GENERAL ACTIVITY INFORMATION	
Sub- Activity No.: 1.2.2.2	
Activity Name (As stated in Pro Doc)	Procurement and installation of hardware, software and datasets for multi-dimensional climate GIS system
Location	Soft Component.
Expected start date	1 January 2026
Completion date	31 December 2027
Approved budget	USD 80,000 Nu. 6,648,800
Responsible Parties	GLD, DHS-MoIT
Focal Person	Yeshi Nidup, Sr. GIS Officer, ynidup@moit.gov.bt, 17549040
ACTIVITY DETAILS	
Activity Background	Bhutan's current GIS infrastructure lacks the capacity to effectively manage complex climate and spatial data due to outdated hardware, basic software, and limited access to climate datasets. To support climate-resilient urban planning, there is a critical need to strengthen the technical foundation by procuring and installing advanced GIS hardware, licensed software, and essential datasets. This will enable accurate spatial analysis, risk mapping, and informed decision-making for climate adaptation.
Activity Description	Bhutan's current GIS infrastructure lacks the capacity to effectively manage complex climate and spatial data due to outdated hardware, basic software, and limited access to climate datasets. To support climate-resilient urban planning, there is a critical need to strengthen the technical foundation by procuring and installing advanced GIS hardware, licensed software, and essential datasets. This will enable accurate spatial analysis, risk mapping, and informed decision-making for climate adaptation.
Objectives	1. Upgrade GIS infrastructure to support multi-dimensional climate data analysis. 2. Enhance capacity for spatial risk mapping and climate-resilient urban planning. 3. Facilitate data-driven decision-making through improved access to climate datasets and analytical tools.
Scope	Inclusion: • Procurement of GIS hardware including servers, workstations, and storage systems. • Acquisition and installation of licensed GIS software and spatial analysis tools. • Integration of essential climate-related datasets as identified in the technical assessment. Exclusion: • Development of new GIS software applications beyond licensed tools and recommendations from activity 1.2.1 • Training and capacity building activities (covered under separate interventions).

Activity Briefs

Key requirements	• Procurement and installation of GIS hardware and licensed software, including servers, workstations, storage systems, spatial analysis tools, and acquisition of essential datasets, based on technical specifications and data requirements identified in the assessment phase. • Procurement following technical specs from assessment report. • Install and configure for GIS platform interoperability. • Access updated, reliable climate data for GIS integration.
Expected benefits	• Improved system performance enabling faster processing of large spatial and climate datasets. • Enhanced accuracy in climate risk assessments and urban planning decisions. • Beneficiaries include GIS Officers, climate analysts, and decision-makers, with indirect benefits to communities vulnerable to climate risks.
Key milestones	• By Q4 2025: Completion of procurement process including vendor selection and contract signing. • By Q4 2026: Delivery of hardware and software. • By Q2 2027: Installation, configuration, and system testing ensuring full functionality.
Activity Risks	Risk 1: Delays in procurement or delivery of hardware/software. Mitigation: Early engagement with vendors and strict contract management. Assumption: Project implementers adopt climate-resilient approaches and cooperate fully.
Activity EXIT criteria	1. All GIS hardware, licensed software, and essential datasets are procured, installed, and fully operational. 2. The system meets all technical specifications and is integrated with existing platforms. 3. Demonstrated capability to process and analyze multi-dimensional climate data for urban planning purposes.
Prepared by	Yeshe Nidup, Sr. GIS Officer, Submitted on May 27, 2025

14.2.4 Activity Brief for 1.2.2.3

GENERAL ACTIVITY INFORMATION	Sub- Activity No.: 1.2.2.3
Activity Name (As stated in Pro Doc)	Data Analysis for producing maps and information: 1) through internal analysis in the Geomatics and Logistic Division of MoIT 2) through procurement (if needed)
Location	NA
Expected start date	1 July 2026
Completion date	31 December 2029
Approved budget	USD 130,000 Nu. 10,804,300
Responsible Parties	GLD, DHS
Focal Person	Yeshe Nidup, Sr. GIS Officer, ynidup@moit.gov.bt, 17549040
ACTIVITY DETAILS	
Activity Background	This activity is initiated to fill critical data gaps in Bhutan's climate risk and vulnerability assessments by generating accurate, high-resolution spatial data and analytical outputs. Many agencies currently lack integrated datasets necessary for climate-informed urban and regional planning. By leveraging internal data collection and GIS analysis, complemented by external procurement if required, the activity aims to provide foundational evidence for climate-resilient development decisions.
Activity Description	The activity involves collecting and analyzing spatial and climate-related data from internal government sources, field surveys, and potentially external vendors if essential datasets are unavailable. Using GIS tools, the data will be processed to produce maps, charts, and information products that identify climate risks and vulnerabilities. These outputs will support risk-informed urban and regional planning and integrate into the broader geospatial system under the project. Capacity building workshops will be conducted to enhance stakeholder skills in interpreting and utilizing these data products effectively.
Objectives	• Contribute to LDCF climate change strategy Priority Area 1 • Support GEF Focal Area Outcomes CCA 1.1, CCA 2.3, and CCA 3.1 • Enhance evidence-based decision-making for climate-resilient urban development
Scope	Inclusion: • Internal collection and analysis of spatial and climate data • Procurement of external datasets if necessary • Production of climate risk maps and information products • Capacity building workshops for stakeholders Exclusion: • Infrastructure development or direct implementation of climate adaptation measures
Key requirements	• Conduct targeted workshops and seminars for stakeholder capacity building on GIS and climate risk interpretation • Engage a qualified local consulting firm to support data analysis ensuring accuracy and relevance of outputs

Activity Briefs

Expected benefits	• Generation of accurate, user-friendly climate risk maps and information products • Support for evidence-based urban and regional planning
Key milestones	• By Q4 2027: First workshop completed • By Q4 2027: Local consultant hired • By Q4 2028: Second workshop completed
Activity Risks	Risks: None Assumption: Project Implementers adopt climate resilient approaches.
Activity EXIT criteria	1. High-quality climate risk maps and information products are produced, validated, and accessible 2. Stakeholders demonstrate improved understanding and application of data through workshops and planning processes
Prepared by	Yeshe Nidup, Sr. GIS Officer, Submitted on May 27, 2025

14.2.5 Activity Brief for 1.2.3.1

GENERAL ACTIVITY INFORMATION	Sub- Activity No.: 1.2.3.1
Activity Name (As stated in Pro Doc)	Development of operation and management manual for GIS system Soft components
Location	NA
Expected start date	1 January 2029
Completion date	31 December 2030
Approved budget	USD 64,000 Nu. 5,319,040
Responsible Parties	GLD, DHS
Focal Person	Yeshi Nidup, Sr. GIS Officer, ynidup@moit.gov.bt, 17549040
ACTIVITY DETAILS	
Activity Background	As Bhutan increasingly integrates GIS technology for climate-informed and data-driven planning, there is a critical need to standardize system management practices. Currently, the absence of consistent guidelines across agencies results in inefficiencies and data inconsistencies. This activity addresses these gaps by developing a comprehensive operation and management manual to ensure effective, sustainable GIS system use and maintenance.
Activity Description	This activity entails the creation of a detailed operation and management manual designed to guide the consistent use, maintenance, and long-term sustainability of the GIS system. The manual will include system workflows, user roles and responsibilities, data update protocols, quality control measures, backup and security procedures, and instructions for integrating new datasets. Development will be conducted through close consultation with relevant stakeholders to ensure alignment with institutional needs and climate resilience objectives. The finalized manual will be professionally printed and distributed to all relevant agencies to support standardized GIS operations nationwide.
Objectives	1. Contribute to LDCF climate change strategy Priority Area 1 by enhancing GIS system management for climate resilience. 2. Support GEF Focal Area Outcomes CCA 1.1, CCA 2.3, and CCA 3.1 through improved data management and system sustainability. 3. Facilitate consistent and efficient GIS operations across government agencies
Scope	Inclusion: • Drafting, stakeholder consultation, reviewing, finalizing, and printing the GIS operation and management manual • Defining procedures for system use, data updates, maintenance, and security. Exclusion: • Implementation of GIS infrastructure upgrades or software development beyond manual creation
Key requirements	• Conducting stakeholder workshops and meetings to gather inputs and validate manual content. • Procurement of professional printing services for high-quality manual distribution. • Engagement of technical experts for manual drafting and review

Activity Briefs

Expected benefits	• Clear, standardized guidelines to improve GIS system operation and maintenance efficiency. • Enhanced data quality and consistency across agencies. • Support for long-term sustainability of GIS operations, contributing to climate resilience efforts. • Beneficiaries include technical professionals managing climate related GIS systems, with indirect benefits to communities through improved climate-informed planning
Key milestones	• Q1 2029: First stakeholder workshop/meeting • Q4 2029: Second stakeholder workshop/meeting • Q1 2030: Printing and distribution of manuals
Activity Risks	Risk 1: Potential delays in stakeholder engagement or manual approval. Mitigation: Early scheduling of workshops and continuous communication with stakeholders to ensure timely feedback and buy-in. Assumption: Project implementers will adopt climate-resilient approaches as outlined in the manual.
Activity EXIT criteria	1. The GIS operation and management manual is completed, formally approved by all relevant stakeholders, and distributed to target users. 2. Staff demonstrate understanding and application of the manual through training sessions and operational use. 3. The manual is actively referenced and used to guide consistent GIS system operation and maintenance across agencies
Prepared by	Yeshe Nidup, Sr. GIS Officer, Submitted on May 27, 2025

14.2.6 Activity Brief for 1.2.3.2

GENERAL ACTIVITY INFORMATION	Sub- Activity No.: 1.2.3.2
Activity Name (As stated in Pro Doc)	Implementation of capacity building for GIS Officers and relevant professionals working in the application of GIS in Climate and Urban Resilience
Location	Ex-country and In-country Training
Expected start date	1 October 2025
Completion date	31 December 2028
Approved budget	USD 250,000 Nu. 20,777,500
Responsible Parties	GLD, DHS
Focal Person	Yeshe Nidup, Sr. GIS Officer, ynidup@moit.gov.bt, 17549040
ACTIVITY DETAILS	
Activity Background	The use of GIS technology is critical for effective climate risk assessment and urban resilience planning in Bhutan. However, current GIS officers and professionals lack advanced skills in applying GIS specifically for climate vulnerability mapping and resilient urban development. This activity is initiated to bridge these technical gaps by providing targeted capacity building, ensuring that GIS tools are effectively utilized to support climate-informed decision-making.
Activity Description	This activity aims to enhance the technical capacity of GIS officers and relevant professionals involved in climate and urban resilience planning. It will deliver a combination of in-country and ex-country training programs. In-country training will include hands-on workshops and seminars tailored to Bhutan's local data and planning contexts. Ex-country training will expose participants to international best practices and advanced GIS applications. Training topics will cover climate vulnerability mapping, spatial data analysis, and the integration of GIS into urban development planning. The overall goal is to equip professionals with the skills to apply GIS tools effectively for evidence-based, climate-resilient decision-making.
Objectives	1. Strengthen technical capacity of GIS officers and professionals in climate risk assessment and urban resilience using GIS 2. Facilitate knowledge transfer of international best practices through ex-country training 3. Support integration of GIS-based evidence into climate-resilient urban planning and policy

Scope	Inclusion: • Training needs assessment • Development of training materials • Coordination with training institutions (local and international) • Delivery of two ex-country training sessions • Delivery of two in-country training workshops focused on GIS applications in climate and urban resilience Exclusion: • Infrastructure development or procurement of GIS hardware/software • Direct implementation of GIS projects outside training and capacity building
Key requirements	• Partner with international institutions for ex-country training. • Customize in-country training to Bhutan's local context and data. • Coordinate GLD, DHS, MoIT for smooth implementation
Expected benefits	• Enhanced skills of GIS officers and professionals to apply advanced GIS tools for climate risk and urban resilience planning • Contribution to Mandatory Indicator 2: Area of land managed for climate resilience (ha) through improved planning • Strengthened institutional capacity for climate-informed decision-making benefiting vulnerable communities, including gender-inclusive participation
Key milestones	• Q4 2027: Completion of first ex-country training • Q4 2028: Completion of second ex-country training • Q4 2027: Completion of first in-country training • Q4 2028: Completion of second in-country training
Activity Risks	Risk 1: Potential delays in organizing ex-country training due to travel restrictions or institutional availability Mitigation: Early coordination and flexible scheduling with partner institutions Assumption: Project implementers actively adopt and promote climate-resilient approaches
Activity EXIT criteria	Success criteria: 1. All planned training programs (in-country and ex-country) conducted successfully with active participation 2. Participants demonstrate improved knowledge and practical GIS skills for climate and urban resilience applications 3. Positive post-training evaluations and evidence of participants integrating skills into their routine work
Prepared by	Yeshe Nidup, Sr. GIS Officer, Submitted on May 27, 2025

14.3.1 Budget breakdown for 1.2.1

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$23,300
	Description Output 1.2, Activity 1.2.1: Analysis of existing GIS system (usage, datasets), including identification of climate and vulnerability related information gaps. Item: Workshops including facilitators: 1 meeting, approximate costs: 30 people, 5 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 11,650 x 1 = \$ 11,650 Output 1.2, Activity 1.2.1: Assessment of current hardware and software functionalities with the identification of necessary upgrades. Item: Workshops including facilitators: 1 meeting, approximate costs: 30 people, 5 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 11,650 x 1 = \$ 11,650	
2	Travel	\$11,700
	Description Output 1.2, Activity 1.2.1: Validation of findings and Sensitisation workshops for officials working in urban planning and development, and related sectors. Item: Travel: 30 people x \$39 x 5 days. Calculation: unit cost \$ 5,850 x 1 = \$ 5,850 Output 1.2, Activity 1.2.1: Assessment of current hardware and software functionalities with the identification of necessary upgrades. Item: Travel: 30 people x \$39 x 5 days. Calculation: unit cost \$ 5,850 x 1 = \$ 5,850	
Total		\$35,000

14.3.2 Budget breakdown for 1.2.2.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$80,000
	Description Output 1.2, Activity 1.2.2: Customisation or enhancement of the existing systems for hosting the products (maps, charts, information etc) of the project. Item: Consulting company for development of systems. Calculation: unit cost \$ 40,000 x 1 = \$ 40,000 Output 1.2, Activity 1.2.2: Customisation or enhancement of the existing systems for hosting the products (maps, charts, information etc) of the project. Item: Consulting company for enhancement of system. Calculation: unit cost \$ 40,000 x 1 = \$ 40,000	
Total		\$80,000

14.3.3 Budget breakdown for 1.2.2.2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$80,000
	Description Output 1.2, Activity 1.2.2: Procurement and installation of hardware and software for multi-dimensional climate GIS system. Item: Equipment supply. Calculation: unit cost \$ 80,000 x 1 = \$ 80,000	
Total		\$80,000

14.3.4 Budget breakdown for 1.2.2.3

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$50,000
	Description Output 1.2, Activity 1.2.2: Data Analysis for producing maps and information: 1) through internal data collection and GIS assessments. 2) through procurement (if needed). Item: Consulting company for data analysis. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
2	Local Consultants	\$10,000
	Description Output 1.2, Activity 1.2.2: Data Analysis for producing maps and information: 1) through internal data collection and GIS assessments. 2) through procurement (if needed). Item: Short term local consultant for enhancement of system and data analysis. Calculation: unit cost \$ 2,000 x 5 = \$ 10,000	
3	Training, Workshops, Meetings	\$46,600
	Description Output 1.2, Activity 1.2.2: Data Analysis for producing maps and information: 1) through internal data collection and GIS assessments. 2) through procurement (if needed). Item: Workshops and seminars: 2 workshops, approximate costs: 30 people, 10 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 23,300 x 2 = \$ 46,600	
4	Travel	\$23,400
	Description Output 1.2, Activity 1.2.2: Data Analysis for producing maps and information: 1) through internal data collection and GIS assessments. 2) through procurement (if needed). Item: Travel: 30 people x \$39 x 10 days. Calculation: unit cost \$ 11,700 x 2 = \$ 23,400	
Total		\$130,000

14.3.5 Budget breakdown for 1.2.3.1

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$32,000
	Description Output 1.2, Activity 1.2.3: Development of operation and management manual for GIS system. Item: Workshops and seminars: 2 workshops, approximate costs: 30 people, 7 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 16,000 x 2 = \$ 32,000	
2	Travel	\$17,000
	Description Output 1.2, Activity 1.2.3: Development of operation and management manual for GIS system. Item: Travel: Approx. costs - 30 people x \$39 x 7 days. Calculation: unit cost \$ 8,500 x 2 = \$ 17,000	
3	Other Operating Costs	\$15,000
	Description Output 1.2, Activity 1.2.3: Development of operation and management manual for GIS system. Item: Procurement of services for Printing of manual. Calculation: unit cost \$ 15,000 x 1 = \$ 15,000	
Total		\$64,000

14.3.6 Budget breakdown for 1.2.3.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$52,000
	Description Output 1.2, Activity 1.2.3: Implementation of capacity building for GIS Officers and other professionals working in the application of GIS in Climate and Urban Resilience. Item: Tuition fee: 20 x 1,300. Calculation: unit cost \$ 26,000 x 2 = \$ 52,000	
2	Training, Workshops, Meetings	\$33,000
	Description Output 1.2, Activity 1.2.3: Implementation of capacity building for GIS Officers and other professionals working in the application of GIS in Climate and Urban Resilience. Item: Training - in country: 2 training, approximate costs: 40 people, 5 days @ \$71 per day, plus meeting room rental \$125 per day. Calculation: unit cost \$ 16,500 x 2 = \$ 33,000.	
3	Travel	\$165,000
	Description Output 1.2, Activity 1.2.3: Implementation of capacity building for GIS Officers and other professionals working in the application of GIS in Climate and Urban Resilience. Item: Training - ex country: 20 days x 220 (DSA) x 10 participants + Air Fare (3000 per head)- Travel. Calculation: unit cost \$ 74,000 x 2 = \$ 148,000 Output 1.2, Activity 1.2.3: Implementation of capacity building for GIS Officers and other professionals working in the application of GIS in Climate and Urban Resilience. Item: Travel: Approx. costs - 45 people x \$39 x 5 days. Calculation: unit cost \$ 8,500 x 2 = \$ 17,000	
Total		\$250,000

15. IPFAD, DHS-MoIT

15.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.4.3.1	Train officials on stormwater management	\$185,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr								
2	2.1.1.1	Inventory existing stormwater drainage	\$73,250	2.2 5y	2.2 5y	2.2 5y	2.2 5y	2.2 5y	2.2 5y	2.2 5y	2.2 5y																
3	2.1.1.2	Prepare Paro stormwater management plan	\$6,750		1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr																	
Total			\$265,000																								

15.2.1 Activity Brief for 1.4.3.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.3.1
Activity Name (As stated in ProDoc)	Capacity building for relevant officials in the planning and designing of nature-based stormwater and flood risk management
Location	Thimphu and Paro
Expected start date	1 July 2025
Completion date	31 July 2027
Approved budget	USD 185,000 Nu. 15,375,350
Responsible Parties	IPFAD, DHS, MoIT
Focal Person	Nobu Jamtsho, Engineer, njamtsho@moit.gov.bt, 17903970
ACTIVITY DETAILS	
Activity Background	Traditional “grey infrastructure” has played a crucial role in stormwater and flood management, but NbS presents a sustainable, multi-benefit alternative by harnessing natural processes. However, officials currently lack sufficient expertise in planning, designing, and implementing NbS. This activity is initiated to address this gap by building the capacity of relevant officials, enabling them to integrate NbS approaches for enhanced resilience and sustainability in Bhutan’s flood risk management
Activity Description	This activity aims to build the capacity of officials involved in stormwater and flood risk management to plan, design, and implement NbS. The purpose is to equip these professionals with the necessary knowledge and skills to adopt sustainable, nature-based approaches that complement or replace traditional grey infrastructure. Key goals include developing a tailored training model, identifying suitable training institutes, nominating officials for training with MHRC approval, and conducting training sessions across three phases (Y1Q3, Y2Q2, and Y3Q1). Ultimately, this will strengthen Bhutan’s climate resilience by embedding NbS expertise within relevant government bodies
Objectives	1. Build technical expertise of officials in planning and designing nature-based stormwater and flood risk management solutions. 2. Develop and implement a tailored training model specific to Bhutan’s context. 3. Facilitate certification and recognition of trained officials to institutionalize NbS knowledge.
Scope	Inclusion: • Capacity building for professionals involved in planning and designing nature-based stormwater and flood risk management; • development of training materials; • coordination with training institutes; • official nominations and approvals; • delivery of training sessions. Exclusion: • Implementation of NbS projects outside of training; • direct community engagement beyond officials; • infrastructure construction activities.

Activity Briefs

Key requirements	• Development of a tailored training model for NbS in stormwater and flood management. • Identification and collaboration with institutes offering relevant workshops/ training. • Nomination and approval process for officials to attend training. • Resources and logistics to conduct training sessions over the planned timeline.
Expected benefits	• Increased number of officials trained and certified in NbS approaches (Mandatory Indicator 4). • Enhanced capacity within government agencies to plan and implement sustainable flood risk management. • Contribution to LDCF climate change strategy objectives, Priority Area 3 and GEF Focal Area Outcomes CCA 2.1, CCA 2.2, CCA 2.3 & CCA 3.3. • Beneficiaries include male and female officials across relevant agencies, supporting gender inclusion and institutional strengthening
Key milestones	• 21 August 2025: Development of training model and identification of training institute • 31 August 2025: Nomination of officials and MHRC approval • 30 September 2025: Completion of training sessions • Capacity development phases: Y1Q3, Y2Q2, Y3Q1
Activity Risks	Risks: None Assumptions: Communities and stakeholders and beneficiaries are receptive to and understand the urgency and uptake of climate actions.
Activity EXIT criteria	Success criteria: 1. Completion of training sessions with the targeted number of officials trained and awarded certificates, 2. demonstrating enhanced capacity in NbS planning and design
Prepared by	Ugyen Phuntsho, Dy. Executive Engineer, Submitted on May 28, 2025

15.2.2 Activity Brief for 2.1.1.1 & 2

GENERAL ACTIVITY INFORMATION	Activity No.: 2.1.1 Sub Activity No.: 2.1.1.1. & 2.1.1.2
Activity Name (As stated in ProDoc)	2.1.1 Technical assessment and intervention of the existing stormwater management system and future needs for Paro Municipality. 2.1.1.1: Development of the inventory of the existing stormwater Drainage Network. 2.1.1.2: Preparation of Integrated Stormwater Management Plan (ISWMP) for Paro.
Location	Tshongdue and Bondey, Paro (4 new LAPs have been identified and developed since the project approval)
Expected start date	1 June 2025
Completion date	31 June 2026
Approved budget	USD 80,000 (2.1.1.1 \$ 73,250 and 2.1.1.2 \$ 6,750) Nu. 6,648,800
Responsible Parties	IPFAD, DHS-MoIT
Focal Person	Nobu Jamtsho, Engineer, njamtsho@moit.gov.bt, 17903970
ACTIVITY DETAILS	
Activity Background	Paro, situated close to Bhutan's capital Thimphu, is expected to experience significant population growth in the coming years. This urban expansion and associated land use changes are already resulting in increased impervious surfaces and altered natural drainage patterns, which exacerbate stormwater management challenges. Moreover, climate change is intensifying rainfall events, leading to higher runoff and greater flood risks. Addressing these challenges through a comprehensive technical assessment and the development of an ISWMP is essential for building a climate-resilient stormwater system for Paro Municipality
Activity Description	This activity involves a thorough technical assessment of Paro's existing stormwater drainage network to determine its adequacy under both business-as-usual and climate change scenarios. The assessment will evaluate the current infrastructure's capacity to accommodate future population and development pressures. It will also explore the application of Low Impact Development and NbS to enhance climate adaptation. A GIS-based inventory of the stormwater drainage network will be developed to support ongoing management and updates. Based on these findings, comprehensive stormwater design guidelines will be formulated to guide engineers in making informed decisions and implementing effective interventions. The ultimate goal is to establish a robust, climate-resilient stormwater management framework for Paro
Objectives	1. Assess and enhance the adequacy and capacity of Paro's existing and planned stormwater drainage networks. 2. Develop an ISWMP for Paro. 3. Establish a geodatabase and guidelines for long-term stormwater management in Paro

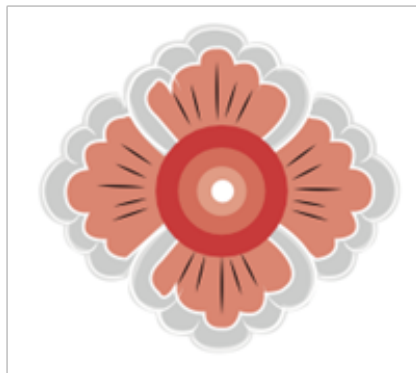
Scope	Inclusion: • Assessment of existing and planned drainage networks under both BAU and CC scenarios. • Analysis of infrastructure capacity for future demands. • Identification and recommendation of LID/NbS for climate adaptation. • Development of a GIS-based stormwater drainage network database. • Formulation of stormwater design guidelines. Exclusion: • Physical construction or rehabilitation of drainage infrastructure. • Stormwater management interventions outside existing and planned LAPs of Paro.
Key requirements	• Engagement of qualified consultants (national or national-led international experts). • Access to relevant data and cooperation from local authorities. • Stakeholder consultation workshops. • GIS and technical assessment tools.
Expected benefits	• Direct improvement of flood resilience and reduction of flood risks for the populations of Paro. • Increased opportunities for green infrastructure and LID implementation. • Enhanced technical capacity and knowledge for local engineers and planners, contributing to broader improvements in stormwater management practices across Bhutan. • Supports ECRUL Project objectives, including gender and social inclusion, by ensuring all community members benefit from improved stormwater management
Key milestones	• 15 June 2025: Consultation workshop and ToR formulation • 30 September 2025: Consultant hired • 30 June 2026: Completion of activity and ISWMP handover
Activity Risks	Risk 1: Contractual issues may delay deliverables. Mitigation: Define a clear scope of work, specific deliverables, precise milestones, and include a dispute resolution mechanism in contracts.
Activity EXIT criteria	Success criteria: 1. ISWMP is prepared and handed over to Paro Dzongkhag for implementation. Completion Condition: 1. All deliverables (inventory, database, guidelines, ISWMP) are finalized and accepted by stakeholders.
Prepared by	Ugyen Phuntsho, Dy. Executive Engineer, Submitted on May 28, 2025

15.3.1 Budget breakdown for 1.4.3.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$56,700
	Description Output 1.4, Activity 1.4.3: Capacity building for relevant officials in the planning and designing of nature-based stormwater and flood risk management. Item: Contractual services (tuition fee). Calculation: unit cost \$ 18,900 x 3 = \$ 56,700.	
2	Travel	\$128,300
	Description Output 1.4, Activity 1.4.3: Capacity building for relevant officials in the planning and designing of nature-based stormwater and flood risk management. Item: Training and workshop - Ex-country: 14 days x 220 (DSA) x 7 participants + Air Fare (3000 per head). Calculation: unit cost \$ 42,767 x 3 = \$ 128,300.	
Total		\$185,000

15.3.2 Budget breakdown for 2.1.1.1 & 2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$14,375
	Description Output 2.1, Activity 2.1.1: Development of the inventory of the existing stormwater Drainage Network. Item: 2: IT Equipment. Calculation: unit cost \$ 14,375 x 1 = \$ 14,375	
2	Contractual services-Company	\$58,875
	Description Output 2.1, Activity 2.1.1: Development of the inventory of the existing stormwater Drainage Network. Item: 1: Contractual Services- (Local consulting firm will lead the task with the condition to hire an International consultant). Calculation: unit cost \$ 58,875 x 1 = \$ 58,875	
3	Training, Workshops, Meetings	\$6,750
	Description Output 2.1, Activity 2.1.1: Preparation of Integrated Stormwater Management Plan (ISWMP). Item: 2: Workshop: 1x(5 days x 5 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 3,375 x 2 = \$ 6,750	
Total		\$80,000



Chapter XII

Creating Quintessential Buildings

16. SRBD, DHS-MoIT

16.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.4.3.6	Train professionals on green building practices	\$200,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr								
2	2.3.1.1	Develop and revise green standards	\$131,500			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr								
3	2.3.1.2	Create green buildings tools	\$83,500			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr								
4	2.3.2.1	Demonstrate resilient building technologies	\$516,116			5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr		
5	2.3.2.2	Retrofit public buildings with technology	\$319,625			5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr		
Total			\$1,250,741																								

16.2.1 Activity Brief for 1.4.3.6

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.3.6
Sub-Activity Name (As stated in ProDoc)	Capacity building on climate resilient green building technology for professionals (engineers and architects) and awareness for green building tool and standard
Location	Ex- country training and In-country workshops.
Expected start date	Q3Y1-Y6: In and Ex-country workshops and meetings, Y1 till Y6
Completion date	2030
Approved budget	USD 200,000 Nu 16,622,000
Responsible Parties	SRBD
Target Group	NHDCL, JNEC, CST, DoE, DHS and Relevant Agencies
Focal Person	Karma Phuntsho, Dy. Executive Engineer, karmap@moit.gov.bt, 17493909
ACTIVITY DETAILS	
Activity Background	Bhutan faces increasing climate risks, making it essential to embed resilience in urban development. However, technical professionals often lack exposure to climate-resilient and green building practices. Existing training programs and curricula reveal gaps in integrating sustainability concepts. This activity responds to the need for systematic capacity building of engineers and architects, aligning national efforts with global climate action while promoting long-term knowledge transfer and sustainability in Bhutan's built environment.
Activity Description	This activity aims to enhance Bhutanese engineers' and architects' capacity in climate-resilient green building technologies through specialized courses and practical simulations. It includes training on developing green building tools benchmarked against international best practices, customized to Bhutan's unique context. The content will be co-developed with international institutions and delivered primarily through in-person, ex-country training sessions. National workshops and coordination meetings will foster collaboration among relevant agencies. Trained professionals will contribute to curriculum development and knowledge dissemination, ensuring institutionalization of climate-resilient green building practices for sustained impact beyond the project period.
Objectives	1. Build capacity of Bhutanese technical professionals on principles and practices of climate-resilient and green building design. 2. Develop national expertise in creating, customizing, and implementing green building tools and standards tailored to Bhutan's context. 3. Conduct national workshops and coordination meetings with relevant agencies to support planning and implementation under Component 2.3.

Scope	Inclusion: • Training engineers and architects in climate-resilient green building technologies. • Development and customization of green building tools and standards. • Ex-country training and in-country workshops and coordination meetings. • Collaboration with international and national stakeholders, Comp. 2.3. Exclusion: • Construction or retrofitting of actual buildings. • Training professionals outside the engineering and architectural sectors. • Development of tools unrelated to green building or climate resilience.
Key requirements	• Engagement of qualified national and international experts in green building design, climate-resilient construction, and tool development. • Formal partnerships or MoUs with educational and research institutions for co-developing content and delivering training. • Development of context-specific training modules, manuals, and digital content on green building design and standards.
Expected benefits	• Enhanced technical capacity of Bhutanese engineers in green building • Strengthened national expertise in green building tool development • Improved coordination among relevant agencies supporting sustainable urban development.
Key milestones	• Q4. 2025: Ex-country training on green building design • Q1 2027: Ex-country training on development of green building tool • 2025-2030: Workshops and meetings conducted in country
Activity Risks	No significant risks identified at present. Continuous monitoring will ensure timely mitigation if any issues arise
Activity EXIT criteria	1. Completion of all planned training sessions and workshops. 2. Demonstrated capacity building evidenced by participant feedback and contribution to curriculum development. 3. Formal handover of developed tools and training materials to national institutions.
Prepared by	Phub Lham Tamang, Karma Phuntsho, and Karma Euthra, SRBD, Submitted on June 15, 2025

16.2.2 Activity Brief for 2.3.1.1 & 2

GENERAL ACTIVITY INFORMATION	Activity No.: 2.3.1 Sub-Activity: 2.3.1.1 & 2.3.1.2
Sub-Activity Name (As stated in ProDoc)	2.3.1: Measures to increase climate resilience of buildings and design of urban spaces introduced. 2.3.1.1: Develop Green Building standard and incorporation in the revised Bhutan Building Code 2.3.1.2: Develop green building tools
Location	NA
Expected start date	May 2025
Completion date	Y4 Q2
Approved budget	USD 215,000 (2.3.1.1 \$ 131,500 & 2.3.1.2 \$ 83,500) Nu. 17,868,650
Responsible Parties	SRBD and Technical Working Group (DoE, DoID, CST, JNEC, BSB)
Focal Person	Karma Phuntsho, Dy. Executive Engineer, karmap@moit.gov.bt, 17493909
ACTIVITY DETAILS	
Activity Background	Bhutan's existing Green Building Design Guidelines, last updated in 2013, no longer sufficiently address emerging climate challenges and sustainable development needs. Urban areas face increasing risks from climate impacts such as flooding, water scarcity, and heat stress. This activity is initiated to update and enhance green building standards and tools, ensuring climate-resilient, resource-efficient, and environmentally responsible construction practices nationwide.
Activity Description	This activity aims to develop and institutionalize an updated green building standard and a digital assessment tool tailored to Bhutan's unique context. Drawing on global best practices and lessons from pilot projects in Thimphu and Paro, the standard will incorporate climate-resilient and sustainable design criteria. The tool will enable architects, engineers, and builders to evaluate and verify compliance with these standards effectively. The activity includes comprehensive stakeholder consultations, integration of NbS, alignment with the Bhutan Building Code, and capacity building for relevant professionals. Ultimately, it will promote resilient and green urban development across Bhutan.
Objectives	1. Develop a comprehensive green building standard that integrates climate resilience and sustainability principles. 2. Design and implement a user-friendly digital green building assessment and verification tool. 3. Institutionalize the updated standard and tool within Bhutan's regulatory framework and build capacity among key stakeholders.

Scope	Inclusion: • Review and update the Bhutan Green Building Design Guidelines 2013. • Develop a green building standard aligned with climate-resilient and sustainable construction practices. • Create a software-based assessment tool for compliance verification. • Conduct stakeholder consultations and capacity-building workshops. • Align standards and tools with the Bhutan Building Code and relevant national policies. Exclusion: • Physical construction or retrofitting of buildings. • Development of standards for non-building infrastructure.
Key requirements	• Engage international firm with Bhutanese partner for development (JV) • Organize multi-sector stakeholder consultations with all sectors • Conduct technical review and data collection from existing projects • Development, pilot testing, and refinement of the digital assessment tool.
Expected benefits	• Adopt national green building standard for climate resilience • Digital tool facilitates compliance assessment and enforcement • Architects, engineers, regulators gain green building capacity
Key milestones	• 30 June 2028: Enhanced green building standards finalized • 30 June 2028: Online green building assessment tool developed • 30 June 2028: Institutional adoption and capacity building completed
Activity Risks	Risk 1: Potential minor delays in procurement via e-GP system; Mitigation: Proactive procurement planning and regular monitoring to minimize impact on the timeline.
Activity EXIT criteria	1. Delivery of the updated green building standard and digital assessment tool as per the consultancy TOR. 2. Formal institutional adoption of the standard and tool within Bhutan's regulatory framework. 3. Completion of stakeholder consultations and capacity-building activities. 4. Confirmation that the tools are operational and accepted by key users.
Prepared by	Phub Lham Tamang, Karma Phuntsho, and Karma Euthra, SRBD, Submitted on June 15, 2025

16.2.3 Activity Brief for 2.3.2.1 & 2

GENERAL ACTIVITY INFORMATION	Activity No.: 2.3.2 Sub-Activity No.: 2.3.2.1 & 2.3.2.2
Sub-Activity Name (As stated in ProDoc)	2.3.2: Introduction and promotion of climate resilient construction technology in buildings and urban space 2.3.2.1: Demonstrate inclusive and climate resilient building technology in Thimphu. 2.3.2.2: Retrofitting of an existing public building with inclusive and climate resilient technology in Paro.
Location	Thimphu: Dechencholing LAP Paro: Public Structure (site yet to be confirmed)
Expected start date	May 2025
Completion date	Y6 Q2
Approved budget	USD 835,741 (2.3.2.1 \$ 516,116 & 2.3.2.2 \$ 319,625) Nu. 69,458,434.51
Responsible Parties	SRBD, NHDCL, Paro Dzongkhag
Focal Person	Karma Phuntsho, Dy. Executive Engineer, karmap@moit.gov.bt, 17493909
ACTIVITY DETAILS	
Activity Background	Bhutan's urban areas face increasing climate-induced risks such as urban flooding, heat stress, and water scarcity. To address these challenges, this activity aims to demonstrate climate-resilient and inclusive building technologies through two pilot interventions: constructing a new climate-resilient public building in Thimphu and retrofitting an existing public building in Paro. These pilots will raise public awareness and promote adoption of sustainable, resilient urban infrastructure practices.
Activity Description	This activity involves constructing a new public building in Thimphu and retrofitting an existing public building in Paro, both incorporating inclusive and climate-resilient technologies. Key features include rainwater harvesting systems, semi-permeable paving, low-flow water fixtures, greening interventions, and improved thermal building envelopes. The purpose is to demonstrate practical applications of green and inclusive technologies that improve thermal performance, water efficiency, and accessibility. These demonstration sites will serve as scalable models to influence broader adoption of climate-smart urban design and inform future policies and standards.
Objectives	1. Demonstrate practical application of inclusive, green, and climate-resilient building technologies through new construction in Thimphu. 2. Retrofit an existing public building in Paro with climate-resilient and inclusive technologies to showcase improvements. 3. Promote scalable models for resilient urban infrastructure to influence future urban development and policy formulation.

Scope	Inclusion: • Site identification and approval in Thimphu (Dechencholing LAP) and Paro (school site to be confirmed). • Development of inclusive, climate-resilient architectural and engineering designs. • Integration of technologies such as rainwater harvesting, semi-permeable paving, greening, thermal-efficient building envelopes, and universal accessibility features. • Construction of a new building in Thimphu and retrofitting works in Paro. • Monitoring implementation and documenting lessons learned. Exclusion: • Private residential buildings or non-public infrastructure. • Activities beyond the construction and retrofitting scope, such as large-scale urban planning or community-wide infrastructure upgrades.
Key requirements	• Availability and administrative approval of government-allocated sites/buildings in Thimphu and Paro. • Engagement of qualified design consultants and multidisciplinary technical team (architects, engineers, environmental and accessibility experts) • Procurement of experienced local contractors for sustainable construction and retrofitting works. • Continuous monitoring and documentation mechanisms.
Expected benefits	• Two functional public buildings serving as national demonstration sites for inclusive and climate-resilient design. • Enhanced public awareness and capacity for climate-smart urban infrastructure. • Influencing updates to national building standards and policies. • Beneficiaries include urban residents of Thimphu and Paro, with inclusive design ensuring accessibility for all genders and persons with disabilities, aligning with ECRUL Project objectives.
Key milestones	• 30 December 2030: Integration of three green and climate resilient interventions incorporated in the demonstration buildings. • 30 June 2026: Finalization of site selection and detailed architectural and engineering designs. • 30 September 2026: Commencement of construction and retrofitting works.
Activity Risks	Risk 1: Construction delays due to unforeseen circumstances or natural disasters. Mitigation: Develop contingency plans, maintain buffer timelines, and ensure regular progress monitoring. Risk 2: Cost escalations impacting budget. Mitigation: Conduct thorough cost estimation and maintain financial oversight with contingency funds. Risk 3: Technical challenges in integrating new technologies. Mitigation: Engage multidisciplinary experts and conduct pilot testing of technologies.

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Activity EXIT criteria	1. Completion of construction and retrofitting works as per approved designs and standards. 2. Successful integration and operationalization of all planned climate-resilient and inclusive technologies. 3. Documentation of lessons learned and dissemination of best practices. 4. Formal handover of demonstration buildings to relevant authorities. 5. Achievement of key milestones within the scheduled timeline.
Prepared by	Phub Lham Tamang, Karma Phuntsho, and Karma Euthra, SRBD, Submitted on June 15, 2025

16.3.1 Budget breakdown for 1.4.3.6

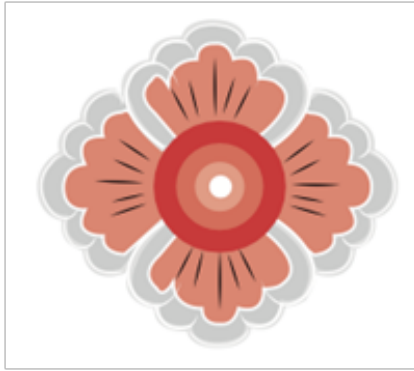
SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$22,320
	Description Output 1.4, Activity 1.4.3: Capacity building on climate resilient green building technology and awareness for green building tool and standard Item: Contractual services (tuition fee). Calculation: unit cost \$ 22,320 x 1 = \$ 22,320	
2	Training, Workshops, Meetings	\$160,005
	Description Output 1.4, Activity 1.4.3: Capacity building on climate resilient green building technology and awareness for green building tool and standard Item: Trainings/workshops and study visits - ex-country: 14 days x 220 (DSA) x 14 participants + Air Fare (3000 per head) 14 days x 220 (DSA) x 7 participants + Air Fare (3000 per head) Calculation: unit cost \$ 127,680 x 1 = \$ 127,680 Output 1.4, Activity 1.4.3: Capacity building on climate resilient green building technology and awareness for green building tool and standard Item: In-country Training/workshop: 3 workshops x 3 days x 71 (DSA, food and lodging) x 50 participants + hall charge 125x 3 days. Calculation: unit cost \$ 32,325 x 1 = \$ 32,325	
3	Travel	\$17,675
	Description Output 1.4, Activity 1.4.3: Capacity building on climate resilient green building technology and awareness for green building tool and standard Item: In-country Training/workshop: 3 workshops x 3 days x 39 (travel) x 50 participants. Calculation: unit cost \$ 17,675 x 1 = \$ 17,675	
Total		\$200,000

16.3.2 Budget breakdown for 2.3.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$195,375
	Description Output 2.3, Activity 2.3.1: Develop Green Building standard and incorporation in the revised Bhutan Building Code Item: 1: International consulting firm. Calculation: unit cost \$ 70,375 x 1 = \$ 70,375 Output 2.3, Activity 2.3.1: Develop Green Building standard and incorporation in the revised Bhutan Building Code Item: 2: International consulting firm for development of tool/system + Procurement of international tools and documents etc for review and study. Calculation: unit cost \$ 41,500 x 1 = \$ 41,500 Output 2.3, Activity 2.3.1: Develop Green Building standard and incorporation in the revised Bhutan Building Code Item: 4: Local consultant (Company) - may include JV of local and international. Calculation: unit cost \$ 83,500 x 1 = \$ 83,500	
2	Training, Workshops, Meetings	\$19,625
	Description Output 2.3, Activity 2.3.1: Develop Green Building standard and incorporation in the revised Bhutan Building Code Item: 3: Stakeholder consultations, workshops, meetings: 5 x 5 days x (6 people @71\$ + Hall @125\$). Calculation: unit cost \$ 3,925 x 5 = \$ 19,625	
Total		\$215,000

16.3.3 Budget breakdown for 2.3.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$835,741
	Description Output 2.3, Activity 2.3.2: Demonstrate inclusive and climate resilient building technology in Thimphu Item: 1: International consulting firm for design of climate resilient building. Calculation: unit cost \$ 80,955 x 1 = \$ 80,955 Output 2.3, Activity 2.3.2: Demonstrate inclusive and climate resilient building technology in Thimphu Item: 2: Contractual services-companies, to construct inclusive and climate resilient building for demonstration. Calculation: unit cost \$ 435,161 x 1 = \$ 435,161. Output 2.3, Activity 2.3.2: Retrofitting of an existing public building with inclusive and climate resilient technology in Paro Item: 1: International consulting firm for design. Calculation: unit cost \$ 30,000 x 1 = \$ 30,000 Output 2.3, Activity 2.3.2: Retrofitting of an existing public building with inclusive and climate resilient technology in Paro Item: 2: Contractual services-companies, to retrofit an existing public building with inclusive and climate resilient technology in Paro for demonstration. Calculation: unit cost \$ 289,625 x 1 = \$ 289,625	
Total		\$835,741



Chapter XIII

Greening Urban Heart

17. SSPD, DHS-MoIT

17.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	1.4.3.3	Train urban planners on NbS design	\$200,000			3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr	3.5 yr								
2	2.1.2.5	Demonstrate flood safety measures	\$300,000			2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr	2.5 yr												
3	2.2.1.1	Stabilize riverbank, develop forests	\$1,002,250			5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr		
4	2.2.3.2	Implement flood safety in Thimphu	\$1,310,000									3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr				
Total			\$2,812,250																								

17.2.1 Activity Brief for 1.4.3.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 1.4.3.3
Activity Name (As stated in ProDoc)	Conduct training and capacity building of urban planners, landscape architects and engineers on urban planning and development using NbS
Location	Ex-country
Expected start date	1 July 2025
Completion date	30 September 2028
Approved budget	USD 200,000 Nu. 16,622,000 (Nu. 4.15 M annually for 4 years)
Responsible Parties	SSPD-DHS
Focal Person	Sangay Wangdi, Urban Planner/Architect, sangayw@moit.gov.bt, 77801905 Nima Dorji, nimad@moit.gov.bt, 17960066
ACTIVITY DETAILS	
Activity Background	Bhutan's rapid urbanization requires innovative and sustainable planning approaches to address environmental, social, and economic challenges. This activity aims to strengthen the capacity of urban planners, landscape architects, and engineers in applying NbS—a holistic approach that integrates natural systems into urban environments. NbS enhances climate resilience, biodiversity, and urban livability, supporting Bhutan's commitment to GNH and sustainable development.
Activity Description	This initiative provides targeted training and capacity building for urban professionals involved in designing and implementing urban development projects, particularly in the Thimphu-Paro region where NbS is mandatory. The training will equip participants with practical skills to: i) Design climate-resilient urban spaces using green infrastructure and ecological principles; ii) Enhance urban biodiversity and livability through sustainable development practices; and iii) Foster collaboration and innovation by building a network of NbS champions within Bhutan's urban development sector. The training will be held annually over four years (2025–2028) during the third quarter. The SSPD under the DHS will lead the initiative, ensuring alignment with national urban development priorities and climate adaptation strategies.
Objectives	1. Strengthen institutional and human capacities to mainstream climate adaptation and resilience in urban planning (aligned with GEF CCA 2.1, 2.2, 2.3, and 3.3¹). 2. Foster partnerships and promote inclusion through capacity building (aligned with LDCF Priority Area 3). 3. Support Bhutan's environmental stewardship and GNH goals by advancing sustainable urban development with NbS. 4. Build a collaborative network of NbS champions in the urban development sector.

¹ CCA 2.1 Strengthened cross-sectoral mechanisms to mainstream climate adaptation and resilience.

CCA 2.2 Adaptation considerations mainstreamed into investments.

CCA 2.3. Institutional and human capacities strengthened to identify and implement adaptation measures.

CCA 3.3: Institutional and human capacities strengthened to identify and implement adaptation measures, as a support to NAP process and/or for enabling activities in response to COP guidance.

Scope	Inclusion: • Training for urban planners, landscape architects, and engineers involved in urban development, especially in open spaces and parks within the Thimphu-Paro region. • Development and delivery of training modules on NbS application in urban planning. • Collaboration with training institutes specializing in NbS. Exclusion: • Urban professionals not engaged in NbS-related urban development projects. • Activities outside the Thimphu-Paro region or unrelated to NbS application.
Key requirements	Partner with qualified training institutes with expertise in NbS. Develop comprehensive training modules tailored to Bhutan's urban context. Ensure compliance with RGoB procurement and logistics procedures. Secure engagement and commitment from targeted urban professionals.
Expected benefits	• At least 7 urban professionals (gender-inclusive) trained and certified in urban planning using NbS each year. • Enhanced capacity of Bhutan's urban development sector to implement climate-resilient, sustainable projects. • Contribution to Mandatory Indicator 4: Number of people trained or with awareness raised under the ECRUL Project. • Strengthened institutional frameworks supporting climate adaptation and sustainable urban development.
Key milestones	• First month of Q3 annually: Identification of training institutes and preparation of training modules • End of first month of Q3 annually: Completion of mandatory RGoB procedures (MHRC, procurement of air tickets) • Second month of Q3 annually: Delivery of training sessions
Activity Risks	Risk 1: Limited engagement from urban professionals and stakeholders. Mitigation: Early stakeholder engagement, awareness campaigns on climate action urgency, and continuous follow-up to ensure participation. Risk 2: Low participation from targeted engineers. Mitigation: Early coordination and communication with responsible agencies to ensure commitment and attendance. Risk 3: Difficulty identifying credible institutions or qualified resource persons. Mitigation: Early identification and contracting of reputable experts or institutions.
Activity EXIT criteria	1. Successful training and certification of a minimum of 7 urban professionals per year. 2. Submission and approval of a comprehensive training report documenting content, attendance, and feedback. 3. Demonstrated application of NbS principles in urban development projects by trained professionals. 4. Completion of all planned training sessions within the scheduled timeframe (2025–2028).
Prepared by	Sangay Wangdi, Sr. Urban Planner, Submitted on May 27, 2025

17.2.2 Activity Brief for 2.1.2.5

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.2.5
Activity Name (As stated in ProDoc)	Demonstrate flood safety measures along the primary stormwater drainage system and stream in Thimphu municipality
Location	Landscape along Chubachhu Streams in City Core, Thimphu.
Expected start date	1 May 2025
Completion date	31 December 2026. (However as per approved prodocs, Completion date is 31/12/2027)
Approved budget	USD 300,000 Nu. 24,933,000
Responsible Parties	SSPD-DHS
Focal Person	Sangay Wangdi, Sr. Urban Planner, sangayw@moit.gov.bt, 77801905 Nima Dorji Urban Planner, nimad@moit.gov.bt, 17960066
ACTIVITY DETAILS	
Activity Background	The Thimphu Structure Plan 2023-2047, approved by the Cabinet in August 2023, guides urban development in Thimphu. To support its implementation, priority projects including the Green Infrastructure Master Plan have been launched. One key challenge is enhancing urban resilience and ecological connectivity along the Chubachhu Stream in the city core. This activity addresses the need to restore and climate-proof the primary stormwater drainage system and adjacent streams to improve flood safety, protect riparian habitats, and create multifunctional public spaces, leveraging NbS for sustainable urban development.
Activity Description	This activity focuses on demonstrating and implementing flood safety measures along the primary stormwater drainage system and the Chubachhu Stream within Thimphu's city core. The purpose is to develop an interconnected network of green corridors and pedestrian pathways that enhance urban walkability, promote active lifestyles, and integrate ecological restoration with community amenities. Key goals include stream restoration and naturalization, construction of footpaths and green infrastructure components, planting design, and installation of public amenities and wayfinding signage. By incorporating NbS, the project aims to climate-proof water corridors, revitalize aquatic habitats, and create resilient, multifunctional public spaces that balance environmental integrity with urban livability.
Objectives	1. Pilot and deploy innovative technologies and NbS to reduce climate-related flood risks along Chubachhu Stream. 2. Enable climate-resilient urban planning through improved landscape design and infrastructure aligned with the Thimphu Structure Plan. 3. Enhance public access, safety, and ecological health by creating continuous pedestrian pathways and green corridors.

Scope	Inclusion: • Detailed landscape design and restoration of the Chubachhu Stream corridor. • Construction of footpaths, pedestrian walkways, and green infrastructure elements. • Implementation of planting plans using native species. • Development of public spaces, amenities, and interpretive signage. • Climate-proofing of approximately 2 km of water corridors through NbS. Exclusion: • Areas beyond Takin Reserve in the north and Dechen Zam in the south are outside the activity scope.
Key requirements	• Engagement of a qualified local consultant for detailed landscape study and design. • Selection and contracting of experienced local contractors for implementation. • Coordination with relevant government agencies (SSPD-DHS) and adherence to environmental and social safeguards. • Development and enforcement of a Code of Conduct addressing GBV/SEAH risks. • Compliance with national regulations and international best practices for construction, waste management, and worker health and safety
Expected benefits	• Climate-proofing of 2 km of urban water corridors, reducing flood risks and protecting people, assets, and businesses. • Improved urban walkability and community well-being through enhanced green spaces and pedestrian infrastructure. • Restoration and protection of riparian habitats, supporting biodiversity and ecological resilience. • Contribution to GEF Focal Area Outcomes on climate adaptation and resilient urban planning. • Inclusive benefits for all genders and community members, aligned with ECRUL Project objectives.
Key milestones	• 20 June 2025: Completion of desktop study, drafting of ToR, and awarding consultancy services contract. • 30 December 2025: Completion of detailed landscape design by the selected local consultant. • 31 December 2026: Completion of implementation of landscape design along Chubachhu Stream by local contractors.

Activity Risks	Risk 1: GBV/SEAH risks due to influx of external contractors/workers Mitigation: Prepare and enforce a Code of Conduct for all workers. Risk 2: Disturbance to cultural sites and existing landscape Mitigation: Conduct site-specific social and environmental screening; develop and implement Chance Find Procedures. Risk 3: Introduction of Alien Invasive Species (AIS) Mitigation: Use only native species; include requirements in contractor agreements. Risk 4: Insufficient consideration of natural hazards in design Mitigation: Engage experienced designers with local context knowledge. Risk 5: Generation of harmful waste and pollutants during construction Mitigation: Follow national regulations and international best practices for waste management. Risk 6: Health risks from labor influx (communicable diseases) Mitigation: Ensure health screening of workers; provide appropriate accommodation per IFC/EBRD guidelines. Risk 7: Occupational health and safety hazards Mitigation: Provide PPE, safety training, daily toolbox talks; maintain first aid and incident reporting. Note: The PMU will monitor compliance with all mitigation measures throughout implementation.
Activity EXIT criteria	1. Awarding of the completion certificate to the contractor by the Implementing Agency (SSPD-DHS). 2. Fulfillment of all deliverables as per contract and approved designs. 3. Compliance with environmental, social, and safety standards confirmed by PMU monitoring. 4. Verification that flood safety measures and NbS interventions are fully implemented and functional.
Prepared by	Sangay Wangdi, Sr. Urban Planner, Submitted on May 28, 2025

17.2.3 Activity Brief for 2.2.1.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.2.1.1
Activity Name (As stated in ProDoc)	Enhancement of Wangchhu River Corridor to adapt to floods and landslides through riverbank stabilization and urban forests development.
Location	Thimphu Thromde and its peripheral areas.
Expected start date	1 November 2025
Completion date	31 December 2028 (However as per approved prodoc, Completion date is 31/12/2029)
Approved budget	USD 1,002,250 Nu. 83,296,997.50
Responsible Parties	SSPD-DHS
Focal Person	Sangay Wangdi, Sr. Urban Planner, sangayw@moit.gov.bt, 77801905 Nima Dorji Urban Planner, nimad@moit.gov.bt, 17960066
ACTIVITY DETAILS	
Activity Background	The Thimphu Structure Plan 2023-2047, developed by the Royal Commission of Urban Development with MoIT and Thimphu Thromde, identifies the Wangchhu river corridor as a critical ecological, transportation, and recreational spine. To implement this plan effectively, priority projects such as the Green Infrastructure Master Plan were formulated. This activity aims to enhance the Wangchhu river corridor to address flood and landslide risks while promoting urban green spaces, thereby improving climate resilience and urban livability.
Activity Description	The Wangchu River Corridor Enhancement Project envisions the revitalization of the riverbanks through the development of a continuous green corridor, centered around urban forestry and NbS to promote flood resilience, ecological health, and urban livability. Key interventions include the restoration of riparian forests, integration of bioswales, rain gardens, and native vegetation buffers to naturally manage stormwater, reduce erosion, and enhance biodiversity along the river. A central feature of the project is the creation of permeable cycling and pedestrian paths—collectively forming a sustainable green corridor—that run parallel to the river, encouraging eco-friendly mobility and offering residents scenic access to nature. These pathways, constructed with porous materials, help manage runoff while weaving through pockets of urban forest that serve as shaded public spaces, carbon sinks, and habitat zones. Together, these interventions create a multifunctional landscape that enhances flood protection, supports climate adaptation, and redefines the Wangchu River as a vibrant, resilient, and inclusive urban greenway.
Objectives	1. Pilot and deploy innovative NbS to reduce flood and landslide risks along the Wangchhu river corridor. 2. Mainstream climate adaptation considerations into urban green infrastructure investments. 3. Develop interconnected urban parks that enhance ecological resilience and provide recreational spaces for Thimphu residents.

Scope	Inclusion: • Design of concept plan from Dodena to Rama along the Wangchhu river corridor. • Engagement of international consultants for detailed landscape design. • Implementation by local contractors based on approved designs. Exclusion: • Construction of footpaths, cycling tracks, and flood protection infrastructure, which are covered under activity 2.2.3.2.
Key requirements	• Recruitment of an international consultant to conduct detailed studies and produce landscape designs for the parks. • Selection and management of local contractors to execute the construction works according to the consultant's designs. • Compliance with environmental and social safeguards including GBV/SEAH mitigation, invasive species control, and occupational health and safety standards.
Expected benefits	• Contribution to GEF mandatory indicator 2: Increased area of land managed for climate resilience (hectares). • Contribution to GEF mandatory indicator 8: Expansion of urban forests and green spaces developed for climate adaptation. • Enhanced flood and landslide resilience for communities in Thimphu Thromde and surrounding areas. • Improved public access to green spaces promoting health, recreation, and ecological connectivity. Beneficiaries • Residents of Thimphu Thromde and peripheral areas, inclusive of all genders and vulnerable groups. • Local communities benefiting from improved climate resilience and recreational amenities. • Urban ecosystems are supported through enhanced biodiversity and green infrastructure.
Key milestones	• By January 2026: Completion of preliminary study, drafting of ToR, and awarding consultancy contract. • By December 2026: Delivery of detailed landscape design by the international consultant. • By December 2028: Completion of park construction by local contractors

Activity Risks	Risk 1: Influx of external workers increasing risks of GBV/SEAH Mitigation: Prepare and enforce a Code of Conduct for contractors and workers. Risk 2: Disturbance to cultural sites and existing landscapes Mitigation: Develop and implement Social and Environmental Screening and Chance Find Procedures. Risk 3: Introduction of Alien Invasive Species (IAS) Mitigation: Use only native species; include requirements in contractor agreements. Risk 4: Insufficient consideration of natural hazards in design Mitigation: Engage experienced designers with local context knowledge. Risk 5: Generation of harmful waste during construction Mitigation: Ensure waste management complies with national regulations and international best practices. Risk 6: Health risks due to labor influx and accommodation Mitigation: Require health screening and compliant worker accommodation per IFC/EBRD guidelines. Risk 7: Occupational health and safety hazards Mitigation: Provide worker training, PPE, toolbox talks, and first aid; monitor compliance regularly.
Activity EXIT criteria	1. Awarding of completion certificate to the contractor by the Implementing Agency (SSPD-DHS). 2. Successful delivery of all park designs and constructions as per approved plans. 3. Compliance with all environmental, social, and health and safety requirements verified by PMU.
Prepared by	Sangay Wangdi, Sr. Urban Planner, Submitted on May 28, 2025

17.2.4 Activity Brief for 2.2.3.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.2.3.2
Activity Name (As stated in ProDoc)	Implementation of climate-resilient flood management safety measures for Thimphu.
Location	Along the Wangchhu River Corridor within the Thimphu Structure Plan 2023-2047 (TSP) study area. The TSP study area covers approximately 39.1 Sq.km from Dodena in the North to Rama in South.
Expected start date	1 January 2027
Completion date	31 December 2029
Approved budget	USD 1,310,000 Nu. 108,874,100
Responsible Parties	SSPD-DHS
Focal Person	Sangay Wangdi, Sr. Urban Planner, sangayw@moit.gov.bt, 77801905 Nima Dorji Urban Planner, nimad@moit.gov.bt, 17960066
ACTIVITY DETAILS	
Activity Background	The TSP 2023-2047, developed by the Royal Commission of Urban Development alongside the MoIT and Thimphu Thromde, identifies flood-prone zones along the Wangchhu River corridor. Hydrological studies revealed critical flood risks threatening downstream communities. This activity is initiated to address these vulnerabilities by implementing climate-resilient flood management measures, thereby protecting lives, infrastructure, and supporting sustainable urban development within the TSP study area.
Activity Description	This activity focuses on designing and implementing detailed flood mitigation measures along the Wangchhu River corridor within Thimphu's urban area, targeting sections identified as flood-prone through prior hydrological assessments. The primary purpose is to enhance climate resilience by reducing flood risks and safeguarding communities and assets downstream. In addition to flood safety infrastructure, the project includes constructing footpaths and cycling tracks that connect open spaces and parks, aligning with the Green Infrastructure Master Plan and Low Emission Transport Master Plan. These interventions aim to integrate with urban mobility enhancements, promoting sustainable, climate-adaptive urban living. The activity spans from detailed design to construction, ensuring robust, locally appropriate solutions are delivered by 2029.
Objectives	1. Pilot and deploy innovative climate-resilient flood management technologies to reduce flood-related risks along the Wangchhu River. 2. Mainstream climate adaptation considerations into urban infrastructure investments within Thimphu's flood-prone areas. 3. Enhance urban connectivity and promote sustainable transport through the development of footpaths and cycling tracks along the river corridor.

Scope	Inclusion: • Detailed hydrological reassessment and design of flood mitigation infrastructure along the Wangchhu River. • Construction of flood management safety measures in identified critical sections. • Design and construction of footpaths and cycling tracks connecting parks and open spaces along the river corridor. Exclusion: • Flood mitigation measures for tributaries of the Wangchhu River. • Development or enhancement of valley parks outside the immediate river corridor.
Key requirements	• Conduct a comprehensive, updated hydrology study of the Wangchhu River. • Engage qualified local consultants for design development. • Appoint local contractors for construction based on approved designs. • Ensure compliance with environmental and social safeguards, including GBV/SEAH mitigation and protection of cultural sites. • Incorporate NbS using native species exclusively. • Implement occupational health and safety standards throughout construction.
Expected benefits	• Climate Resilience: Increased area of land managed for climate resilience (mandatory indicator 2). • Water Corridor Protection: Climate-proofing of water corridors to protect people, assets, and businesses (mandatory indicator 7). • Community Safety: Reduced flood risk for downstream populations, enhancing safety and wellbeing. • Sustainable Mobility: Improved pedestrian and cycling infrastructure promoting low-emission transport options. • Inclusive Impact: Beneficiaries include all genders and vulnerable groups residing within the Wangchhu River corridor in Thimphu.
Key milestones	• June 2027: Award contract to local consultant for detailed design • December 2027: Completion of detailed design • December 2029: Completion of construction and implementation of flood mitigation measures, footpaths, and cycling tracks

Activity Risks	Risk 1: Influx of workers may increase GBV/SEAH risks Mitigation: Develop and enforce a Code of Conduct for all workers and contractors. Risk 2: Disturbance to cultural sites and landscape Mitigation: Conduct Social and Environmental Screening; implement site-specific Chance Find Procedures. Risk 3: Introduction of Alien Invasive Species (IAS) Mitigation: Use only native species; include this requirement in contractor agreements. Risk 4: Insufficient consideration of natural hazards in design Mitigation: Engage experienced designers with expertise in climate-resilient infrastructure. Risk 5: Construction waste and pollutant generation Mitigation: Adhere to national regulations and international good practices for waste management. Risk 6: Health risks from labor influx Mitigation: Provide health screening and compliant worker accommodations per IFC/EBRD guidelines. Risk 7: Occupational health and safety hazards Mitigation: Mandatory H&S training, PPE provision, toolbox talks, and incident reporting by contractors. Note: The PMU will monitor compliance with all mitigation measures throughout implementation.
Activity EXIT criteria	1. Awarding of the completion certificate to the contractor by the implementing agencies (SSPD-DHS). 2. Verification that all flood mitigation measures, footpaths, and cycling tracks are constructed according to approved designs and standards. 3. Confirmation that environmental and social safeguards have been satisfactorily implemented and documented.
Prepared by	Sangay Wangdi, Sr. Urban Planner, and Nima Dorji, Urban Planner Submitted on May 28, 2025

17.3.1 Budget breakdown for 1.4.3.3

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$58,200
	Description Output 1.4, Activity 1.4.3: Capacity building for relevant officials in the planning and designing of nature-based stormwater and flood risk management Item: Contractual services (tuition fee). Calculation: unit cost \$ 14,550 x 4 = \$ 58,200	
2	Training, Workshops, Meetings	\$141,800
	Description Output 1.4, Activity 1.4.3: Conduct training and capacity building of urban planners, landscape architects and engineers on urban planning and development using NbS Item: Training and workshop - In-country: 3 workshop x (3 days x 110 (DSA, food and lodging) x 20 participants + hall charge 125x 3 days). Calculation: unit cost \$ 20,000 x 1 = \$ 20,000 Output 1.4, Activity 1.4.3: Conduct training and capacity building of urban planners, landscape architects and engineers on urban planning and development using NbS Item: Training and workshop- Ex-country: 14 days x 220 (DSA) x 5 participants + Air Fare. Calculation: unit cost \$ 30,450 x 4 = \$ 121,800	
Total		\$200,000

17.3.2 Budget breakdown for 2.1.2.5

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$273,000
	Description Output 2.1, Activity 2.1.2: Demonstrate flood safety measures along the primary stormwater drainage system and stream in Thimphu. Item: 2: National contractor (works) - for implementation of flood safety measures primary stormwater drainage system and streams in Thimphu. Calculation: unit cost \$ 273,000 x 1 = \$ 273,000	
2	Local Consultants	\$20,000
	Description Output 2.1, Activity 2.1.2: Demonstrate flood safety measures along the primary stormwater drainage system and stream in Thimphu. Item: 2: Local Consultants for the Design for stormwater drainage systems. Calculation: unit cost \$ 450 x 44 = \$ 20,000	
3	Training, Workshops, Meetings	\$7,000
	Description Output 2.1, Activity 2.1.2: Demonstrate flood safety measures along the primary stormwater drainage system and stream in Thimphu. Item: 1: Meetings and workshops for in-house survey and design, estimate and tendering works: Survey (data collection): 10 people x 5 days @42. Workshop for design/estimate/tendering: (12 days x 6 people @ \$ 110) + (10 days x 125 \$ Hall)". Calculation: unit cost \$ 3,500 x 2 = \$ 7,000	
Total		\$300,000

17.3.3 Budget breakdown for 2.2.1.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$840,000
	Description Output 2.2, Activity 2.2.1: Enhancement of Wangchhu River Corridor to adapt to floods and landslide through urban forestry Item: 3: Contractual services-companies, to implement the Design to enhance wangchu river corridor. Calculation: unit cost \$ 840,000 x 1 = \$ 840,000	
2	International Consultants	\$150,000
	Description Output 2.2, Activity 2.2.1: Enhancement of Wangchhu River Corridor to adapt to floods and landslide through urban forestry Item: 1: International Consultancy firm for the Design of landscape with NbS and EBA solutions along Wangchhu River. Calculation: unit cost \$ 150,000 x 1 = \$ 150,000	
3	Training, Workshops, Meetings	\$12,250
	Description Output 2.2, Activity 2.2.1: Enhancement of Wangchhu River Corridor to adapt to floods and landslide through urban forestry Item: 2: Training/ Workshop (In country): 2 workshops x(5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 2 = \$ 12,250	
Total		\$1,002,250

17.3.4 Budget breakdown for 2.2.3.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$1,272,750
	Description Output 2.2, Activity 2.2.3: Implementation of climate-resilient flood management safety measures for Paro Item: 2: Contractual services-companies, for implementation of flood safety measures in Paro. Calculation: unit cost \$ 600,000 x 1 = \$ 600,000 (taken from Nu 2,100,000 Paro) Output 2.2, Activity 2.2.3: Implementation of climate-resilient flood management safety measures for Thimphu Item: 2: Contractual services-companies, to implement the flood safety measures in Thimphu. Calculation: unit cost \$ 672,750 x 1 = \$ 672,750	
2	Local Consultants	\$25,000
	Description Output 2.2, Activity 2.2.3: Implementation of climate-resilient flood management safety measures for Thimphu Item: 1: Local Consultant Firm (to design the flood management safety measure along the Wangchhu river and its tributaries). Calculation: unit cost \$ 25,000 x 1 = \$ 25,000	
3	Training, Workshops, Meetings	\$12,250
	Description Output 2.2, Activity 2.2.1: Enhancement of Wangchhu River Corridor to adapt to floods and landslide through urban forestry Item: 2: Training/ Workshop (In country): 2 workshops x(5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 2 = \$ 12,250	
Total		\$1,310,000

18. Thimphu Thromde-LG

18.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	2.1.2.1	Rehabilitate primary drains with NbS	\$1,215,000	2 yr		2 yr	2 yr		2 yr	2 yr																	
2	2.1.2.2	Rehabilitate secondary drainage systems	\$1,495,000						1.5 yr	1.5 yr	1.5 yr			1.5 yr	1.5 yr	1.5 yr	1.5 yr										
3	2.1.2.3	Demonstrate lateral drainage flood reduction	\$454,000											1 yr	1 yr	1 yr	1 yr	1 yr									
Total			\$3,164,000																								

18.2.1 Activity Brief for 2.1.2.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.2.1
Activity Name (As stated in ProDoc)	2.1.2.1: Rehabilitation of the primary storm water drains for capacity enhancement and integration of NbS in Thimphu municipality.
Location	Motithang, Changangkha and City Core area, Thimphu Thromde
Expected start date	April, 2025
Completion date	June, 2027
Approved budget	USD 1,215,000 Nu. 100,978,650
Responsible Parties	Thimphu Thromde
Focal Person	Kezang Dorji, Urban Planner, kezangd@tto.gov.bt, 77812324
ACTIVITY DETAILS	
Activity Background	The existing stormwater drainage system in Thimphu’s old city area was developed 15-20 years ago with a design horizon of 20 years. With the revised Thimphu Structure Plan extending to 2047, the current drainage infrastructure is insufficient to handle future stormwater volumes. This activity is initiated to upgrade and expand the drainage capacity, incorporating innovative NbS and Low Impact Development (LID) techniques to improve resilience, sustainability, and flood management in the municipality.
Activity Description	This activity involves the rehabilitation and redevelopment of five primary stormwater drains, including the Chubachu stream and the stream along the Memorial Chorten. Nature-based interventions such as green spaces, retention ponds, and parks will be integrated to enhance ecosystem services and climate resilience.
Objectives	1. Enhance stormwater drainage capacity to meet the 2047 planning horizon. 2. Integrate NbS and ecosystem-based adaptation measures into drainage infrastructure.
Scope	Inclusion: • Rehabilitation or reconstruction of all primary storm water drains within Motithang, Changangkha, and City core. • Incorporation of NbS elements such as green areas, retention ponds, and parks. • Inclusive Footpaths and utility ducts • Greening along the storm drains to enhance infiltration. Exclusion: • Drainage systems outside the Motithang, Changangkha and city core.
Key requirements	• Familiarization training on NbS and Ecosystem-based Adaptation (EBA) practices. • Field visits to cities with best practices in stormwater management for an informed innovative design solution. • Coordination with local stakeholders and communities for effective implementation.

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Expected benefits	• Climate-proofed drainage network covering approximately 3.8 km within Motithang, Changangkha, and City Core. • Reduced urban flooding and improved stormwater management even during the peak season. • Enhanced urban green spaces contributing to ecological health and community well-being.
Key milestones	Q2 2027: Completion of primary drainage system rehabilitation.
Activity Risks	No Risk
Activity EXIT criteria	1. Full completion of all primary drainage systems within the old city area (Motithang, Changangkha, City Core). 2. Successful integration of NbS and EBA measures into the drainage infrastructure.
Prepared by	Kezang Dorji, Urban Planner, Thimphu Thromde, Submitted on June 10, 2025

18.2.2 Activity Brief for 2.1.2.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.2.2
Activity Name (As stated in ProDoc)	2.1.2.2: Rehabilitation of secondary storm water drainages (connecting drains) for proper management of surface runoff and wastewater in Motithang, Changangkha, and City Core.
Location	Motithang, Changangkha and City Core area, Thimphu Thromde
Expected start date	July, 2026
Completion date	June, 2028
Approved budget	USD 1,495,000 Nu. 124,249,450
Responsible Parties	Thimphu Thromde
Focal Person	Kezang Dorji, Urban Planner, kezangd@tto.gov.bt, 77812324
ACTIVITY DETAILS	
Activity Background	The existing stormwater drainage system in Thimphu's old city area was developed 15-20 years ago with a design horizon of 20 years. With the revised Thimphu Structure Plan extending to 2047, the current drainage infrastructure is insufficient to handle future stormwater volumes. This activity is initiated to upgrade and expand the drainage capacity, incorporating innovative NbS and Low Impact Development (LID) techniques to improve resilience, sustainability, and flood management in the municipality.
Activity Description	Secondary drains along major roads and household connections will be upgraded to mitigate flash floods, especially during monsoon seasons. Nature-based interventions such as green spaces, retention ponds, and parks will be integrated to enhance ecosystem services and climate resilience.
Objectives	1. As indicated above, the activities shall aim towards achieving 29 km of drainage system climate-proofed by increasing capacity and denaturalization of existing drains, along with construction of additional drains to manage excess flooding. 2. Enhance a comprehensive drainage network within the Motithang, Changangkha, and City Core to mitigate flashflood. 3. Integrate NbS and ecosystem-based adaptation measures into drainage infrastructure.
Scope	Inclusion: • Rehabilitation or reconstruction of all secondary drains within the Motithang, Changangkha, and City Core. • Incorporation of NbS elements such as green areas, retention ponds, and parks. • Critical Inclusive Footpaths and utility ducts • Greening along the drains if feasible. Exclusion: • Drainage systems outside the Motithang, Changangkha, and City Core.
Key requirements	• Field visits to cities with best practices in stormwater management for an informed innovative design solution. • Coordination with local stakeholders and communities for effective implementation.

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Expected benefits	• Climate-proofed drainage network covering approximately 29 km within the old city area. • Reduced urban flooding and improved stormwater management during monsoon seasons. • Enhanced urban green spaces contributing to ecological health and community well-being.
Key milestones	Q2 2028: Completion of secondary drainage system rehabilitation
Activity Risks	No Risk
Activity EXIT criteria	1. Full completion of all secondary drainage systems within the old city area (Motithang, Changangkha, City Core). 2. Successful integration of NbS and EBA measures into the drainage infrastructure.
Prepared by	Kezang Dorji, Urban Planner, Thimphu Thromde, Submitted June 20, 2025

18.2.3 Activity Brief for 2.1.2.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.2.3
Activity Name (As stated in ProDoc)	2.1.2.3: Lateral Drainage system demonstrated for partial diversion of stormwater from the primary drainage system to reduce urban flood in low-lying areas in Thimphu municipality
Location	Motithang, Changangkha and City Core area, Thimphu Thromde
Expected start date	April, 2027
Completion date	September, 2028
Approved budget	USD 454,000 Nu. 37,731,940
Responsible Parties	Thimphu Thromde
Focal Person	Kezang Dorji, Urban Planner, kezangd@tto.gov.bt, 77812324
ACTIVITY DETAILS	
Activity Background	The existing stormwater drainage system in Thimphu's old city area was developed 15-20 years ago with a design horizon of 20 years. With the revised Thimphu Structure Plan extending to 2047, the current drainage infrastructure is insufficient to handle future stormwater volumes. This activity is initiated to divert some drains into the streams and reduce volume flowing into the existing primary storm drains. It also incorporates innovative NbS and Low Impact Development (LID) techniques to improve resilience, sustainability, and flood management in the municipality.
Activity Description	The activity involves the redevelopment of Lateral lateral drainage systems to partially divert stormwater from the primary drains, reducing urban flooding in low-lying areas. Nature-based interventions such as green spaces, retention ponds, and parks will be integrated to enhance ecosystem services and climate resilience.
Objectives	1. Enhance stormwater drainage capacity to meet the 2047 planning horizon. 2. Integrate NbS and ecosystem-based adaptation measures into drainage infrastructure. 3. Demonstrate innovative lateral drainage systems to reduce urban flooding in vulnerable low-lying areas.
Scope	Inclusion: • Development of lateral drainage systems for stormwater diversion within Motithang, Changangkha, and City Core. • Incorporation of NbS elements such as green areas, Bioswales and parks. • Critical Inclusive Footpaths and utility ducts • Greening along the proposed structures. Exclusion: • Drainage systems outside the old city area.
Key requirements	• Field visits to cities with best practices in stormwater management to inform innovative design solutions. • Coordination with local stakeholders and communities for effective implementation.

Activity Briefs

Expected benefits	• Climate-proofed drainage network covering approximately 3 km within the old Motithang, Changangkha, and City Core. • Reduced urban flooding and improved stormwater management during monsoon seasons. • Enhanced urban green spaces contributing to ecological health and community well-being.
Key milestones	Q3 2028: Completion of lateral drainage system demonstration
Activity Risks	No Risk
Activity EXIT criteria	1. Full completion of all lateral drainage systems within the old city area (Motithang, Changangkha, City Core). 2. Successful integration of NbS and EBA measures into the drainage infrastructure.
Prepared by	Kezang Dorji, Urban Planner, Thimphu Thromde, Submitted June 20, 2025

18.3.1 Budget breakdown for 2.1.2.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$1,192,000
	Description Output 2.1, Activity 2.1.2: Rehabilitation of the primary storm water drains for capacity enhancement and integration of NbS. Item: 2: Contractual services-companies, to rehabilitate pry. Stormwater drainage system/networks. Calculation: unit cost \$ 1,192,000 x 1 = \$ 1,192,000	
2	Training, Workshops, Meetings	\$23,000
	Description Output 2.1, Activity 2.1.2: Rehabilitation of the primary storm water drains for capacity enhancement and integration of NbS. Item: 1: Meetings and workshops for In-house survey and design, estimate and tendering works (for subactivity 2.1.2.1, 2.1.2.2 & 2.1.2.3); 3 Field Surveys, 3 workshops: Survey (data collection): (10 people x 5 days @42. Workshop for design/estimate/tendering: (7 days x 6 people @ \$ 110) + (7 days x 125 \$ Hall) Calculation: unit cost \$ 23,000 x 1 = \$ 23,000	
Total		\$1,215,000

18.3.2 Budget breakdown for 2.1.2.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$1,495,000
	Description Output 2.1, Activity 2.1.2: Rehabilitation of the secondary storm water drainages (connecting drains) for proper management of surface runoff and waste water. Item: 2: Contractual services-companies, to rehabilitate secondary stormwater drainage systems/networks. Calculation: unit cost \$ 1,495,000 x 1 = \$ 1,495,000	
Total		\$1,495,000

18.3.3 Budget breakdown for 2.1.2.3

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$454,000
	Description Output 2.1, Activity 2.1.2: Lateral drainage system demonstrated for partial diversion of stormwater from the primary drainage system to reduce urban flood in low-lying areas. Item: 2: Contractual services-companies, for construction of lateral drainage system/networks. Calculation: unit cost \$ 454,000 x 1 = \$ 454,000	
Total		\$454,000

19. Thimphu Dzongkhag-LG

19.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	2.1.2.4	Rehabilitate drainage networks in Debsi	\$80,000			1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr																
Total			\$80,000																								

19.2 Activity Brief for 2.1.2.4

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.1.2.4
Activity Name (As stated in ProDoc)	Rehabilitation of Storm Water Drainage Networks in Debsi LAP
Location	Debsi LAP
Expected start date	01 July 2025
Completion date	20 October 2026
Approved budget	USD 80,000 Nu. 6,648,800
Responsible Parties	DHS, Chang Gewog
Focal Person	Pema Zangmo, Executive Engineer, pzangmo@thimphu.gov.bt, 17837310
ACTIVITY DETAILS	
Activity Background	The storm water drainage system in Debsi LAP was constructed in 2016. Due to recent changes in rainfall patterns and deterioration of the existing drains, the lower Debsi community has been experiencing frequent overflow and flooding, especially during monsoon seasons. Numerous complaints from residents have prompted the Dzongkhag and Gewog administrations to prioritize upgrading and rehabilitating the drainage infrastructure to better serve the growing population and mitigate flooding issues.
Activity Description	This activity involves rehabilitating the damaged storm water drains and constructing new drainage infrastructure in critical flood-prone areas within Debsi LAP. The project will focus on locations where drainage issues have been repeatedly reported to the Gewog and Dzongkhag administrations. The design phase will incorporate NbS developed through an in-house design workshop, ensuring sustainable and climate-resilient drainage systems. The rehabilitation and new constructions aim to significantly reduce flooding and waterlogging, improving sanitation and overall living conditions for the community.
Objectives	1. Improve the drainage system in Debsi LAP 2. Enhance sanitation and reduce waterlogging 3. Implement climate-resilient infrastructure solutions
Scope	Inclusion: • Rehabilitation of existing damaged drains in lower Debsi LAP, especially in areas with severe flooding issues during summer. • Construction of new drains in critical locations identified through community feedback and administrative reports. Exclusion: • Upper areas of Debsi LAP where flooding issues are minimal and no immediate drainage interventions are required.
Key requirements	• Technical guidance and support from the PMU during design and costing phases. • Early procurement planning to avoid delays. • Community engagement and coordination with Gewog administration for site-specific inputs.

Expected benefits	- Establishment of a climate-resilient drainage system that effectively manages storm water and reduces flooding risks. - Improved sanitation and living conditions for the Debsi LAP community, consisting of approximately 995 males and 711 females (Statistical Handbook of Thimphu, 2021).
Key milestones	- First Week September 2025: Completion of design and costing - Second Week October 2025: Tendering and work award - November 2026: Project completion
Activity Risks	Risk 1: Delay in procurement process due to lack of competent bidders Mitigation: Early procurement planning Risk 2: Inadequate design due to expertise issues Mitigation: Support from PMU during design phase
Activity EXIT criteria	1. Successful handing over of the rehabilitated and newly constructed drainage infrastructure to the Debsi community, confirmed through formal handover documentation.
Prepared by	Pema Zangmo, Executive Engineer, Submitted on May 20, 2025

19.3 Budget breakdown for 2.1.2.4

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$77,900
	Description Output 2.1, Activity 2.1.2: Rehabilitation of stormwater drainage networks in Debsi LAP. Item: 2: Contractual services-companies, to stormwater drainage system/networks in Debsi LAP. Calculation: unit cost \$ 77,900 x 1 = \$ 77,900	
2	Training, Workshops, Meetings	\$2,100
	Description Output 2.1, Activity 2.1.2: Rehabilitation of stormwater drainage networks in Debsi LAP. Item: 1: Meetings and workshops for In-house survey and design, estimate and tendering works: Survey (data collection): 10 people x 5 days @42. Workshop for design/estimate/tendering: (12 days x 6 people @ \$ 110) + (10 days x 125 \$ Hall). Calculation: unit cost \$ 2,100 x 1 = \$ 2,100.	
Total		\$80,000

20. Paro Dzongkhag-LG

20.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	2.1.1.3	Implement NbS stormwater solutions in Paro	\$50,000									1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr	1.5 yr										
2	2.2.2.1	Build retention pond for resilience at Jangsa	\$382,250			4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr	4.5 yr				
3	2.2.3.1	Implement flood safety in Paro	\$1,533,375			5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr	5 yr		
Total			\$1,965,625																								



20.2.1 Activity Brief for 2.1.1.3

GENERAL ACTIVITY INFORMATION	
Sub Activity No.: 2.1.1.3	
Activity Name (As stated in ProDoc)	Implementing NbS integrated storm water interventions in Paro municipality
Location	Paro Town, Drain from Paro Town connecting to Nyami Zam at Pachu River.
Expected start date	December 2025
Completion date	May 2026
Approved budget	USD 50,000 Nu. 4,155,500
Responsible Parties	Paro Dzongkhag
Focal Person	Ugyen Eden, Dzongkhag Chief Engineer, ueden@paro.gov.com, 17650431
ACTIVITY DETAILS	
Activity Background	The stormwater drain running from Paro Town to Nyami Zam at the Pachu River has been identified as a critical site due to recurrent flooding and drainage issues during the summer monsoon season. This not only causes inconvenience to local residents and disrupts municipal functions but also threatens the integrity of a key tourist attraction area, impacting local economy and environment. The intervention aims to address these flooding and drainage problems through sustainable, NbS integrated into the existing infrastructure to enhance stormwater management capacity while preserving environmental and cultural values.
Activity Description	This activity focuses on planning and implementing nature-based stormwater management interventions in the selected drain area of Paro Town that connects to Nyami Zam at Pachu River. The purpose is to reduce stormwater flooding and associated risks by integrating natural features such as bio-retention, vegetated swales, and permeable surfaces with existing drainage infrastructure. Key goals include improving stormwater flow and infiltration, reducing pollutant loads entering the river system, and enhancing the aesthetic and ecological value of the area. Through this intervention, the activity aims to increase climate resilience of the municipality, protect critical water resources, and promote sustainable urban drainage systems in a way that aligns with the tourism significance of the location.
Objectives	1. Mitigate stormwater flooding risks along the targeted drain in Paro Town during monsoon seasons. 2. Integrate NbS to improve water quality and hydrological function of the drainage system. 3. Enhance local environmental conditions and support sustainable tourism through improved landscape and water management.

Scope	Inclusion: - Assessment and design of NbS stormwater interventions for the specified drain area. - Construction and restoration works including bioswales, bio-retention/ detention ponds, and structural improvements. - Community engagement and awareness activities on sustainable drainage and maintenance. Exclusion: - Large-scale infrastructural changes beyond the selected drain corridor. - Stormwater interventions in other parts of Paro Municipality are not connected to this drain. - Development of tourism facilities beyond landscaping related to drainage improvements.
Key requirements	- Technical expertise in NbS and stormwater management design and implementation. - Collaboration between SES experts and community stakeholders. - Access to suitable native plants and materials for landscape restoration. - Sufficient budget allocation and timely procurement of resources.
Expected benefits	- Reduced frequency and severity of stormwater flooding incidents in Paro Town. - Improved water quality entering Pachu River through natural filtration processes. - Enhanced aesthetic appeal and ecological function of the drain area, benefiting local residents and tourists. - Increased community awareness and capacity for maintaining sustainable drainage systems.
Key milestones	20 June 2025: Design and approval of NbS intervention plan 30 June 2025: Completion of construction and landscaping works 30 August 2025: Final monitoring and activity closure report
Activity Risks	Risk 1: Insufficient total budget allocated leading to scaling back of interventions. Mitigation: Prioritize critical components in phases if needed, seek supplementary funding sources, maintain flexible implementation strategies to optimize resources.
Activity EXIT criteria	- Stormwater flooding in the targeted drain area significantly reduced or eliminated during peak rainfall events. - NbS interventions established and functioning as designed with healthy vegetation and structural components intact. - Positive feedback from local community and stakeholders on environmental and aesthetic improvements. - Completion of project documentation including monitoring results and complete handing taking over
Prepared by	Pema Yoezer, Architect, Submitted on May 26, 2025

20.2.2 Activity Brief for 2.2.2.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 2.2.2.1
Activity Name (As stated in ProDoc)	Development and implementation of a retention pond at Jangsa water supply source to maintain water level for flood resiliency & dry season.
Location	Paro Dzongkhag, Between Dopshari and Wangchang Gewog, Opposite to Paro Municipal Office
Expected start date	20 July 2025 (Survey and Designs) 01 February 2026 (Construction Activity)
Completion date	1 May 2028
Approved budget	USD 382,250 Nu. 31,768,797.50
Responsible Parties	Paro Dzongkhag, Paro Municipalities, together with DHS, MoIT
Focal Person	Ugyen Eden, Dzongkhag Chief Engineer, ueden@paro.gov.com, 17650431
ACTIVITY DETAILS	
Activity Background	This activity is initiated to address recurring water shortages during dry seasons and mitigate flood risks during heavy rainfall at the Jangsa water supply source in Paro. The region faces increasing vulnerability due to climate change, impacting over 840 households and local agriculture. The project leverages the opportunity to improve water security, support sustainable agriculture, and contribute to national climate adaptation and SDG commitments.
Activity Description	The project entails the construction and implementation of a retention pond at the Jangsa water supply source in Paro Dzongkhag. The primary purpose is to stabilize water availability throughout the year, ensuring flood resilience during monsoon seasons and a reliable water supply during droughts. The retention pond will capture and store excess rainwater, directly benefiting over 840 households and supporting sustainable agriculture. The initiative also includes upgrading existing infrastructure, integrating climate adaptation strategies, and promoting the eco-tourism potential in the area. Community engagement and awareness programs will be conducted to enhance local capacity for water resource management. The project aligns with Bhutan's SDGs, particularly those related to clean water, climate action, and sustainable communities.
Objectives	1. Develop a retention pond to maintain water levels for flood resiliency and dry season security. 2. Enhance sustainable agriculture and river ecosystem health through reliable water management. 3. Support climate change adaptation and explore eco-tourism opportunities for local economic development.

Scope	Inclusion: • Construction of a retention pond at the Jangsa water supply source. • Renovation of the existing pump house and treatment facilities • Installation of water collection, storage, and controlled release infrastructure. • Measures to improve flood resilience and water availability during dry seasons. • Integration of climate adaptation and river health preservation strategies. • Community engagement and awareness programs. • Support for sustainable agriculture through reliable irrigation. • Landscaping and minimal infrastructure to enhance eco-tourism potential. • Monitoring mechanisms for water levels, usage, and environmental impact. • Construction or expansion of water distribution pipelines. Exclusion: • Major recreational infrastructure development. • Urban or industrial water supply augmentation. • Activities unrelated to flood resilience, water conservation, or environmental sustainability. • Ongoing operation and maintenance post-construction (unless specified). • Agricultural subsidies or direct financial support to farmers.
Key requirements	• Engagement of technical experts and consultants. • Outsourcing design and implementation to qualified agencies. • Capacity development for implementing partners.
Expected benefits	• Clean, Safe and Reliable Drinking Water to almost 25000 individuals which include Females, Males, Children, Aged, and persons with disabilities. • Clean, safe, and reliable drinking water for approximately 25,000 individuals, including women, men, children, the elderly, and persons with disabilities. • Improved resilience of local communities to climate impacts. • Enhanced agricultural productivity and ecosystem health. • New opportunities for eco-tourism and sustainable economic development.
Key milestones	• Q3 2025: Tendering and awarding of construction contract. • Q4 2025: Completion of survey, design, and estimation; hiring of the implementing agency • Q1 2026: Commencement of construction works • Q4 2029: Completion of construction and handover

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Activity Risks	Risk 1: Flood risk before completion: Mitigation: Construct NbS flood protection wall; monitor weather and river levels regularly. Risk 2: Disruption of water supply to residents: Mitigation: Provide a temporary recharge pond and an alternative water supply. Risk 3: Disturbance to aquatic life: Mitigation: Monitor work execution to minimize disruption; redirect water to the main river during construction
Activity EXIT criteria	1. Successful construction and operationalization of the retention pond. 2. Safe and reliable drinking water supply to more than 1,000 households.
Prepared by	Pema Yoezer, Architect, Submitted on May 26, 2025

20.2.3 Activity Brief for 2.2.3.1

GENERAL ACTIVITY INFORMATION	
	Sub Activity No.: 2.2.3.1
Activity Name (As stated in ProDoc)	Implementation of climate-resilient flood management safety measures for Paro
Location	Riverbanks of Pa chu, Do chu, Ri Chu, Satsham Chu (North and South), Nephu Chu, Ngoborong Chu, Dakhorong Chu, GatanaRong Chu, Jew Chu
Expected start date	20 July 2025 (Survey and Designs) 01 February 2026 (Constructions Activity)
Completion date	1 January 2029
Approved budget	USD 1,533,375 Nu. 127,438,796.25
Responsible Parties	Paro Dzongkhag
Focal Person	Ugyen Eden, Dzongkhag Chief Engineer, ueden@paro.gov.com, 17650431
ACTIVITY DETAILS	
Activity Background	This activity is initiated in response to increasing flood risks and erosion along 30.062 km of river corridors and 39.781 km of streams in Paro Dzongkhag. Unpredictable rainfall patterns and climate change are causing more frequent and severe flooding, threatening public infrastructure, local communities, and the environment. The project leverages both traditional and NbSto enhance resilience and reduce disaster risks.
Activity Description	The activity aims to improve flood resilience in the Pa-chu river basin and surrounding streams by implementing climate-resilient infrastructure and hybrid NbS. Key interventions include constructing gabion walls along vulnerable riverbanks to prevent erosion, clearing and restoring stream flow paths to reduce blockages, and integrating hybrid features such as vegetated gabions and pedestrian footpaths. These measures are designed to protect critical public infrastructure and communities, enhance ecological health, and promote sustainable development. The project will be executed in phases, starting with surveys and design, followed by construction and ongoing monitoring.
Objectives	1. Strengthen 30.062 km of river corridors and 39.781 km of streams against flood risks through the construction of gabion walls and clearing of stream flow paths. 2. Implement a hybrid infrastructure (vegetated gabions or footpath) to enhance climate resilience and provide community co-benefits. 3. Safeguard public infrastructure and vulnerable communities along the Pa-chu river system.

Scope	Inclusion: • Construction of gabion walls along 30.062 km of river corridors and 39.781 km of streams. • Clearing and restoration of natural stream flow paths. • Installation of hybrid infrastructure (vegetated gabions, footpaths) in critical areas. • Protection of public infrastructure and vulnerable communities. • Integration of NbS to support biodiversity. • Monitoring and assessment of flood-prone areas during and after implementation. Exclusion: • Construction of large-scale concrete embankments or hard infrastructure beyond gabion walls. • Development of recreational or commercial facilities. • Major dredging operations or large-scale river diversion. • Expansion or construction of new bridges, culverts, or transportation infrastructure. • Long-term maintenance unless included in follow-up plans or separate funding.
Key requirements	• Engagement of technical experts and consultants for design and implementation. • Outsourcing of design and construction activities. • Capacity development for implementing partners and local stakeholders.
Expected benefits	• Enhanced flood protection for vulnerable communities, including aged persons, children, women, men, and PWD. • Improved riverbank stability, ecological restoration, and community access to river corridors. • Contribution to ECRUL Project objectives of climate adaptation, disaster risk reduction, and gender/social inclusion • Improved riverbank stability, ecological restoration, and community access to river corridors.
Key milestones	• Q3 2025: Tendering and awarding of construction contracts • Q4 2025: Completion of design, survey, and hiring of the implementing agency • Q1 2026: Commencement of construction works • Q2 2027: Completion of ~10 km of river corridors and 13 km of streams • Q2 2028: Completion of ~20 km of river corridors and 26 km of streams • Q1 2029: Final completion and handover
Activity Risks	Risk 1: Habitat disruption, vegetation loss, and sedimentation during construction. Mitigation: Conduct Environmental Impact Assessments (EIA); implement erosion control plans and eco-friendly measures such as vegetated gabions Risk 2: Lack of community support may delay implementation. Mitigation: Hold inclusive consultations, involve local stakeholders and raise awareness of project benefits.

Activity EXIT criteria	1. 30.062 km of gabion walls and 39.781 km of stream enhancements were constructed as per design. 2. Hybrid features (vegetated gabions, footpaths) installed in designated areas. 3. Improved water flow, flood protection, and riverbank stabilization observed. 4. All deliverables completed and handed over to relevant authorities.
Prepared by	Pema Yoezer, Dzongkhag Architect, May 26, 2025

20.3.1 Budget breakdown for 2.1.1.3

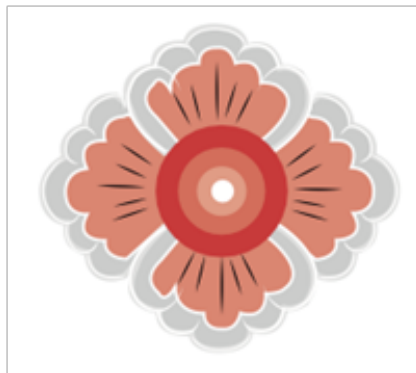
SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$50,000
	Description Output 2.1, Activity 2.1.1: Implementing NbS integrated storm water interventions in Paro Municipality Item: 1: Contractual services-companies, for implementation of Nbs integrated storm water interventions. Calculation: unit cost \$ 50,000 x 1 = \$ 50,000	
Total		\$50,000

20.3.2 Budget breakdown for 2.2.2.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$370,000
	Description Output 2.2, Activity 2.2.2: Development and implementation of a retention pond at Jangsa water supply source to maintain water level for flood resiliency & dry season Item: 1: Local Consulting Firm for Survey and Designs. Calculation: unit cost \$ 20,000 x 1 = \$ 20,000 Output 2.2, Activity 2.2.2: Development and implementation of a retention pond at Jangsa water supply source to maintain water level for flood resiliency & dry season Item: 2: Contractual services-companies, for engagement in construction and procurement of goods and materials. Calculation: unit cost \$ 350,000 x 1 = \$ 350,000	
2	Training, Workshops, Meetings	\$12,250
	Description Output 2.2, Activity 2.2.2: Development and implementation of a retention pond at Jangsa water supply source to maintain water level for flood resiliency & dry season Item: 2: Training/ Workshop (In country): 2 workshops x(5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 2 = \$ 12,250	
Total		\$382,250

20.3.3 Budget breakdown for 2.2.3.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$1,533,375
	Description Output 2.2, Activity 2.2.3: Implementation of climate-resilient flood management safety measures for Paro Item: 1: Local consultant firm (for detailed design and estimation of flood management safety measures based on the Flood Management Plan of Paro, 2020). Calculation: unit cost \$ 15,000 x 1 = \$ 15,000 Output 2.2, Activity 2.2.3: Implementation of climate-resilient flood management safety measures for Paro Item: 2: Contractual services-companies, for implementation of flood safety measures in Paro. Calculation: unit cost \$ 2,100,000 x 1 = \$ 2,100,000 -600,000 to SSPD = \$ 1,500,000 Output 2.2, Activity 2.2.3: Implementation of climate-resilient flood management safety measures for Paro Item: 3: Workshops: 3 x (5 days x 10 people @ \$ 110) + (5 days x 125 \$ Hall). Calculation: unit cost \$ 6,125 x 3 = \$ 18,375	
Total		\$1,533,375



Chapter XIV

Providing Enabling Environment for ECRUL Success

21. PMU,DHS-MoIT

21.1 Multi-year Work Plan

SN	SA No.	Sub-Activity	ECRUL budget	Implementation Timeline																							
				Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4
1	3.1.1.1	Create communication dissemination strategy	\$35,000					1 yr	1 yr	1 yr	1 yr																
2	3.1.1.2	Launch website and social media	\$45,000			2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2	2														
3	3.1.2.1	Create multimedia project success stories	\$130,000	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr
4	3.1.2.2	Publish climate resilience research	\$80,000			5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr	5.5 yr
5	3.1.2.3	Publish key project outputs	\$40,000	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr
6	3.1.3.1	Facilitate exchange and action plans	\$120,000								3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr	3 yr					
7	3.1.4.1	Conduct study visits and exchanges	\$133,000					2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr	2 yr												
8	3.1.4.2	Attend and host climate resilience events	\$150,000	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr	6 yr
9	3.1.5.1	Implement regular KAP surveys	\$30,000												1.25 y												

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21.2.1 Activity Brief for 3.1.1.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.1.1
Activity Name (As stated in ProDoc)	Development of gender-responsive communication plan and strategy for dissemination of project information through communication channels.
Location	NA
Expected start date	August 2025
Completion date	December 2025
Approved budget	USD 35,000 Nu. 2,908,850
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	This activity is initiated to address the current gap in gender-responsive communication within the project outreach. Effective communication strategies are critical for ensuring that both men and women in target communities receive, understand, and engage with project information. By developing a gender-responsive communication plan, the project leverages opportunities to enhance inclusivity and promote equitable participation, in alignment with the ECRUL project objectives.
Activity Description	The activity focuses on developing a comprehensive gender-responsive communication plan and strategy by hiring a qualified local expert. The plan will integrate gender-sensitive messaging and multi-channel dissemination approaches, including digital media, mainstream and community-based outlets, and storytelling methods. Target audiences include government, urban communities, private sector, educational institutions, and donors. The strategy will also incorporate monitoring and evaluation components to track communication effectiveness and inclusivity. This effort aims to enhance stakeholder engagement, promote behavior change, and ensure equitable access to project information, thereby fostering transparent and gender-sensitive climate resilience interventions.
Objectives	1. Develop a gender-responsive communication plan integrating gender-sensitive messaging and outreach. 2. Establish inclusive dissemination strategies targeting diverse stakeholder groups through multi-channel approaches. 3. Strengthen stakeholder engagement and promote equitable participation, leveraging storytelling to highlight gender and social inclusion.
Scope	Inclusion: • Preparation of a detailed gender-responsive communication plan and strategy. • Mapping of communication channels suited to diverse audiences. • Design of monitoring and evaluation tools to assess communication reach, inclusivity, and impact Exclusios: • Production and distribution of communication materials or campaigns (covered in later activities). • Implementation of communication activities beyond strategy development

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Key requirements	• Recruit qualified local expert with gender-sensitive communication. • Access to existing project data and stakeholder information. • Coordination with PMU and DHS teams for inputs and feedback. • Adequate budget allocation and timely disbursement.
Expected benefits	• Increased access to project information for all genders, fostering equitable participation. • Improved community awareness and engagement aligned with gender equality principles. • Enhanced transparency and trust between the project and stakeholders.
Key milestones	• August 2025: Expert recruitment finalized • October 2025: Draft communication plan submitted • December 2025: Final communication strategy approved
Activity Risks	Risk 1: Delay in hiring a suitable expert could postpone the activity timeline. Mitigation: Start recruitment process early with shortlist of candidates Risk 2: Insufficient stakeholder engagement may result in ineffective strategy. Mitigation: Facilitate early consultations and coordinate stakeholders. Risk 3: Gender considerations might be inadequately integrated. Mitigation: Require gender expertise and seek specialist feedback.
Activity EXIT criteria	1. Delivery and formal approval of a comprehensive gender-responsive communication plan and strategy. 2. Stakeholder consensus on the approach and readiness for subsequent implementation phases. 3. Confirmation that all objectives and scope elements are addressed.
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.2 Activity Brief for 3.1.1.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.1.2
Activity Name (As stated in ProDoc)	Establishment of website, linkage to existing climate associated platforms and opening social media accounts for the timely information sharing
Location	NA
Expected start date	May 2025
Completion date	December 2026
Approved budget	USD 45,000 Nu. 3,739,950
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	The need for timely and accessible climate-related information is critical for effective decision-making and community adaptation. Existing platforms lack a centralized and user-friendly digital front door that accurately reflects DHS priorities and services, including its programs and projects. This activity aims to address these challenges by creating a professional and easy-to-navigate website hosted under the DHS domain, featuring a dedicated ECRUL project page. Bilingual availability (English and Dzongkha) and high standards of content accuracy will further enhance accessibility and inclusiveness.
Activity Description	This activity centers on developing and launching a simple, user-friendly, and professional digital front door for the DHS and the ECRUL project. The website will be a key communication platform, presenting accurate and up-to-date content in both English and Dzongkha, reflecting DHS's priorities, programs, projects, services, and capabilities. It will include a dedicated page for the ECRUL project and integrate linkages with existing climate-associated platforms. Additionally, official social media accounts will be created and managed for real-time updates and greater stakeholder engagement. The scope includes website design, bilingual content development, platform integration, and social media operations to ensure effective, accessible, and inclusive climate information sharing.
Objectives	1. Develop a simple, easy-to-navigate, and professional digital front door website under the DHS domain with a dedicated ECRUL project page. 2. Ensure website content meets high standards of accuracy and is available in both English and Dzongkha. 3. Reflect DHS priorities, services, programs, projects, and capabilities on the platform. 4. Foster real-time information dissemination through social media accounts. 5. Enhance stakeholder engagement and raise awareness on climate-related issues

Scope	Inclusion: • DHS website updates including development of dedicated ECRUL project page. • Website development, testing, and deployment aligned with DHS standards. • Integration/linkage with existing national and regional climate platforms. • Creation and management of official social media accounts. • Content creation, regular updates, and stakeholder training for effective use. Exclusion: • Development of standalone mobile applications beyond website platform. • Offline dissemination activities outside the digital scope.
Key requirements	• Collaboration with GovTech officials/MoIT IT team for website hosting and maintenance. • Skilled web developers and IT support for platform enhancements. • Access to existing climate platform APIs for integration. • Content creators from all Divisions of DHS are knowledgeable in respective Division's mandate and climate science.
Expected benefits	• Enhanced access to reliable, bilingual (English and Dzongkha), and timely climate information for communities, particularly vulnerable groups such as women and youth. • A professional, easy-to-use digital front door reflecting DHS priorities to improve public awareness and service delivery. • Strengthened coordination and engagement among climate stakeholders via an integrated digital platform hosted under DHS. • Increased community participation and knowledge sharing aligned with ECRUL Project objectives and DHS programs.
Key milestones	• August 11, 2025: Content development (website and social media) • October 2025: Website (DHS site with bilingual, user-friendly digital front door and dedicated ECRUL page) launch • February 2026: Integration with existing platforms completed • March 2026: Social media accounts launched • May 2026: Full website and social media operation • December 2026: Final activity report and closure
Activity Risks	Risk 1: Delays in technical integration Mitigation: Content Development workshop involving all representatives from all Divisions of DHS Risk 2: Challenges in maintaining bilingual content standards Mitigation: Engage experienced translators and content reviewers. Risk 3: Low user engagement Mitigation: Targeted outreach, training, and continuous platform improvements based on feedback
Activity EXIT criteria	1. DHS website featuring a bilingual, professional, and user-friendly digital front door with dedicated ECRUL project page is fully functional and integrated. 2. Content meets high accuracy standards and is maintained in both English and Dzongkha. 3. All focals from DHS trained and actively used platforms. 4. Regular updates established and sustained. 5. Positive user feedback confirming improved access to climate information and clarity of DHS services reflected on the website.
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.3 Activity Brief for 3.1.2.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.2.1
Activity Name (As stated in ProDoc)	3.1.2.1 Prepare videos/brochures/flyers/posters and other communication materials on project success stories, case study, progress, lessons learned and impact stories describing the theory of change.
Location	NA
Expected start date	July 2025
Completion date	December 2030
Approved budget	USD 130,000 Nu. 10,804,300
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	There is a critical need to enhance knowledge sharing and stakeholder engagement for climate and urban resilience by showcasing project experiences. Currently, limited availability of engaging materials hinders awareness and understanding of the project's progress and impact. This activity will help bridge this gap by producing high-quality communication products.
Activity Description	This activity involves developing diverse communication materials such as videos, brochures, flyers, posters, and other promotional content to highlight project success stories, case studies, progress updates, lessons learned, and impact stories. These materials will reflect the project's theory of change and contribute to enhanced visibility and learning. Content will be gathered from RPs, and professional designers and videographers will be contracted to ensure quality outputs. An annual catalogue focusing on NbS will also be produced as part of this work.
Objectives	1. Strengthen the project's visibility and stakeholder engagement through quality communication products. 2. Document and disseminate success stories and lessons learned from project implementation. 3. Illustrate the theory of change effectively, promoting replication and advocacy
Scope	Inclusion: • Production of videos, brochures, flyers, posters, and catalogues. • Collection of project content from partners. • Graphic design and multimedia production services. Exclusion: • Research publications and formal journal articles (covered separately).
Key requirements	• ToRs for hiring content developers and creative consultants. • Timely provision of project content from partners
Expected benefits	• Increased public awareness and understanding of NbS and climate resilience. • Engagement with over 120,000 individuals through outreach activities.
Key milestones	• Annual: Publication of NbS catalogue. • Quarterly: Release of communication materials aligned with project milestones.

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Activity Risks	Risk 1: Insufficient quality or quantity of content from partners. Mitigation: Engage reputed consultants and streamline content submission processes.
Activity EXIT criteria	Success criteria: 1. A quarterly newsletter is published each quarter. 2. The product catalogue is developed and printed annually. 3. Multimedia communication materials are produced successfully according to schedule.
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.4 Activity Brief for 3.1.2.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.2.2
Activity Name (As stated in ProDoc)	3.1.2.2 Publication books /research/articles on climate/urban resilience.
Location	NA
Expected start date	December 2025
Completion date	December 2030
Approved budget	USD 80,000 Nu. 6,648,800
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	Bhutan's ability to adapt to climate change and urban challenges is limited by insufficient accessible knowledge and dissemination platforms. Limited research documentation hampers policy influence and practice improvement. This initiative aims to strengthen local research capacity and improve knowledge dissemination on climate and urban resilience. Despite growing national research capacity, structured financial support, clear eligibility criteria, and strong governance are urgently needed to ensure quality, visibility, and impactful outcomes.
Activity Description	This activity supports the production and publication of climate change and urban resilience research in print and online formats. It provides structured financial and institutional support under the Framework for ECRUL Research to eligible Bhutanese researchers, including architects, planners, engineers, development practitioners, CSOs, think tanks, and academics domestically and abroad. The framework funds national journals, international journals, national research presentations, and international presentations. The Technical Advisory and Coordination Committee, chaired by the project director, oversees submissions and selection for providing financial incentives, ensuring transparency and quality.
Objectives	1. Empower Bhutan's urban resilience by supporting innovative, evidence-based research publications. 2. Facilitate the dissemination of knowledge through national and international publications and presentations. 3. Strengthen the research capacity and engagement of qualified Bhutanese professionals and organizations in climate and urban resilience.
Scope	Inclusion: • Support preparation and publication of books, research, and articles. • Provide financial aid for Bhutanese researchers' national, international work. • TACC oversees governance and evaluation for research quality. Exclusion: • Multimedia communication and visibility materials (see 3.1.2.1). • Project newsletters and periodic status reports (see 3.1.2.3).

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Key requirements	• Detailed ToR for research support and editorial services. • Coordination with applicants and partners to ensure timely and high-quality manuscript delivery. • Establishment and operation of the TACC governance mechanism for proposal evaluation and selection.
Expected benefits	• Well-documented research outputs advancing Bhutan's climate and urban resilience agenda. • Enhanced capacity and motivation of Bhutanese researchers and practitioners in resilience fields. • Increased visibility of Bhutan's work in international climate resilience discourse and knowledge networks
Key milestones	• Per year: At least three national journal publications are supported. • Per year: At least one international journal publication is supported. • Annually: At least one national research presentation is supported. • Per year: At least one international research presentation event with up to five participants is supported.
Activity Risks	Risk 1: Delays in research submission and publication approvals. Mitigation: Robust follow-up system, clear timelines, and active TACC oversight. Risk 2: Insufficient quality of submissions. Mitigation: Rigorous evaluation process managed by TACC and engagement of subject experts
Activity EXIT criteria	Success criteria: 1. Publish the minimum target of national and international research yearly. 2. Complete supported presentations and dissemination activities annually. 3. TACC positively evaluates research quality and impact
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.5 Activity Brief for 3.1.2.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.2.3
Activity Name (As stated in ProDoc)	3.1.2.3 Publication on key project outputs.
Location	NA
Expected start date	December 2025
Completion date	December 2030
Approved budget	USD 40,000 Nu. 3,324,400
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	Ongoing documentation and dissemination of key project outputs are essential for transparency, accountability, and stakeholder engagement. Currently, there is no systematic and consistent mechanism to publish key project results in reputed journals and research outlets, which limits the project’s visibility and advocacy potential. This activity aims to fill that gap by supporting high-quality publications showcasing project achievements.
Activity Description	This activity focuses on publishing articles, books, and research works on key project outputs through reputed journal publishers. The support will cover costs associated with preparing, reviewing, and publishing these materials in recognized academic and professional outlets. This will help consolidate and communicate critical knowledge generated from the project, facilitating wider dissemination and stakeholder engagement.
Objectives	1. Document and disseminate key project outputs through high-impact publications. 2. Enhance the project’s visibility and credibility in academic and professional circles. 3. Support knowledge sharing and advocacy for climate and urban resilience initiatives.
Scope	Inclusion: • Publishing articles, books, and research works in reputed journal publishers. • Coordination with authors and publishers to ensure standards and timely publication. Exclusion: • Multimedia communication materials (covered under activity 3.1.2.1). • Regular newsletters or other periodic project communications (covered under 3.1.2.3).
Key requirements	• ToR for hiring editorial and publication support services. • Collaboration with authors/researchers to prepare publishable manuscripts. • Engagement with reputable journal publishers.
Expected benefits	• High-quality dissemination of project results enhancing knowledge and policy impact. • Increased recognition of the project’s contributions at national and international levels.

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Key milestones	• By Q4 2025: Successful publication of project outputs in at least one reputed journal or publisher. • Till Q4 2030: Continued publication and dissemination of outputs periodically.
Activity Risks	Risk 1: Delays in manuscript submission or publication process. Mitigation: Establish clear timelines, follow-up closely with authors and publishers. Risk 2: Rejection or low impact of publications. Mitigation: Ensure stringent peer review and selection of high-quality publishers.
Activity EXIT criteria	Success criteria: 1. Completion of publication of at least one major article/book/research work with a reputed journal publisher under this activity by Q4 2030. 2. Positive reception and uptake of published materials by target audiences and stakeholders
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.6 Activity Brief for 3.1.3.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.3.1
Activity Name (As stated in ProDoc)	Support to exchange programme for public and private sector from other thromdes and development of localised replication action plans
Location	National
Expected start date	December 2026
Completion date	September 2029
Approved budget	USD 120,000 Nu. 9,973,200
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	This activity is initiated to promote crossbreeding of best urban development practices among thromdes (municipalities) at the Class A and B levels, as well as in Gelephu Mindfulness City (GMC) —a new city designed to be a model of growth rooted in Bhutanese landscape, culture, and nature integration. The programme targets sustainable and climate-resilient urban development by facilitating exchange visits and organizing regional events that foster innovation and knowledge-sharing across Bhutanese urban centers.
Activity Description	The exchange programme fosters collaboration among public and private stakeholders from 3 Class A thromdes, 10 Class B thromdes, and GMC. It includes learning visits, workshops, and technical support sessions aimed at identifying, adapting, and replicating successful urban development initiatives. Additionally, the project will organize regional events focused on climate-resilient urban development, enabling Bhutanese municipalities to lead in sustainable urban innovation aligned with national cultural values and environmental priorities.
Objectives	1. Facilitate knowledge exchange and cross-learning of innovative urban development best practices among public and private sector representatives from various thromdes. 2. Build capacity of participants to design and implement localized, context-specific replication action plans that address their thromde's unique challenges and priorities. 3. Promote sustained collaboration and networking through national, regional, and international events to advance climate-resilient and culturally appropriate urban development solutions.

Scope	Inclusion: • Selection of public and private sector representatives from Class A, Class B thromdes, and GMC. • Exchange visits and workshops focused on replicable urban development models. • Organization of international and regional events on climate-resilient urban development in Bhutan • Technical support for developing localized replication action plans aligned with local needs. Exclusion: • Direct infrastructure implementation or capital investment projects. • Activities unrelated to urban development or outside the specified thromdes and city.
Key requirements	• Coordination and clearance by MHRC. • Effective logistical planning for travel and event organization. • Engagement of technical experts for capacity building and action plan support. • Commitment from participating thromdes and GMC stakeholders
Expected benefits	• Improved replication and adaptation of best urban development practices across municipal levels. • Strengthened capacity to implement climate-resilient and culturally rooted urban solutions. • Enhanced knowledge exchange through national and international events positioning Bhutan as a climate-smart urban innovation leader
Key milestones	• September 2026: Participant selection and initial planning. • 2026-2029: Conduct 5 exchange workshops and at least 2 international/regional events in Bhutan • Q3 2029: Submission of localized replication action plans and documentation of outcomes.
Activity Risks	Risk 1: Low stakeholder commitment Mitigation: Early engagement and clear communication of benefits. Risk 2: Logistical challenges (travel, coordination) Mitigation: Robust planning with contingency options.
Activity EXIT criteria	1. Completion of all workshops, conferences and events with active participation. 2. Submission and approval of localized replication action plans. 3. Establishment of a follow-up mechanism to monitor implementation and sustain collaboration
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.7 Activity Brief for 3.1.4.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.4.1
Activity Name (As stated in ProDoc)	Study Visits and Exchange Programs for Staff, Students, TVET Trainers, and Component Managers
Location	NA
Expected start date	November 2025
Completion date	November 2029
Approved budget	USD 133,000 Nu. 11,053,630
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	This activity aims to enhance the technical and practical skills of university staff, students, TVET trainers, and component managers through exposure to best practices, models, and technologies in climate-resilient urban development and vocational training. It addresses gaps in experiential learning and fosters institutional collaboration, knowledge sharing, and innovation tailored to local urban resilience and labor market challenges.
Activity Description	The activity will organize national and regional study visits and exchange programs for university and TVET stakeholders to gain hands-on experience and peer learning in climate-resilient urban development and vocational training. Visits to exemplary sites and institutions will enable participants to apply innovative models locally, support curriculum enhancements, and promote institutional benchmarking, thereby improving the relevance and quality of vocational education and training programs.
Objectives	1. Enhance practical knowledge and skills through exposure to innovative practices in climate resilience and vocational training. 2. Facilitate peer learning and strengthen institutional collaboration among educational and development institutions. 3. Support curriculum improvement and local adaptation of best practices in TVET and university courses.
Scope	Inclusion: • Facilitation of study visits and exchange programs for relevant staff, students, trainers, and managers. • Sharing best practices in climate resilience and vocational training. • Strengthening institutional partnerships and peer-to-peer knowledge exchange. • Development of post-visit knowledge transfer mechanisms and action plans. Exclusion: • Long-term formal training or degree programs not linked to study visits. • Activities unrelated to professional exchange or experiential learning.
Key requirements	• Selection and preparation of participants from relevant institutions. • Coordination with host sites and institutions for visits, including logistics support. • Development and implementation of knowledge transfer and monitoring mechanisms.

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Expected benefits	• Improved practical skills and knowledge among male and female participants. • Enhanced institutional collaboration and knowledge-sharing networks. • Contribution to more relevant and responsive TVET curricula and urban resilience strategies.
Key milestones	• November 2025 onwards: Planning, partnerships formalization, and participant selection. • 2026–2028: Implementation of multiple rounds of study visits and exchange activities. • 2029: Evaluation, reporting, and integration of learnings into institutional practices.
Activity Risks	Risk 1: Participant misalignment with program objectives or low engagement. Mitigation: Robust participant selection criteria and preparatory orientation sessions
Activity EXIT criteria	1. Completion of all planned visits and exchange activities within the timeline. 2. Submission of participant reports, reflections, and actionable recommendations. 3. Evidence of uptake of best practices in home institutions and positive participant feedback.
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.8 Activity Brief for 3.1.4.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.4.2
Activity Name (As stated in ProDoc)	Organise and attend international and regional conferences, seminars, trade EXPOs on climate resilient urban development
Location	NA
Expected start date	September 2025
Completion date	December 2030
Approved budget	USD 150,000 Nu. 12,466,500
Responsible Parties	PMU-DHS
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	This activity supports active participation in and organization of international and regional forums dedicated to climate-resilient urban development. These platforms provide critical opportunities to showcase national initiatives, learn from global innovations and best practices, network with development partners and industry leaders, and influence climate resilience policies. Such engagement enhances institutional visibility, aligns national efforts with international standards, and fosters knowledge exchange that supports climate adaptation and mitigation in urban settings.
Activity Description	The activity involves coordinating participation in and hosting of regional and international conferences, seminars, and trade expos focused on climate-resilient urban development. Key actions include showcasing progress, innovations, and good practices through exhibitions and presentations; facilitating networking with international experts and institutions; and organizing side-events and dialogues on emerging trends, technologies, and climate solutions. The activity aims to strengthen institutional visibility, foster global and regional partnerships, support policy discourse, and enable capacity building. Methods include direct participation, presentations, workshops, and exhibitions, targeting government, private sector, civil society, and technical experts.
Objectives	1. Showcase national progress in climate-resilient urban development. 2. Build strategic partnerships with global and regional stakeholders. 3. Influence policy and planning via emerging trends exposure
Scope	Inclusion: • Organize and attend regional, international climate resilient events. • Showcase national green infrastructure and urban planning innovations. • Facilitate networking among policymakers, planners, academia, private sector. • Organize side events and seminars for dialogue and collaboration Exclusion: • Direct urban infrastructure projects beyond event participation excluded. • Activities unrelated to climate-resilient urban development excluded.

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Key requirements	• Identification and selection of relevant international and regional events aligned with project goals • Preparation of presentations, exhibition materials, and participation logistics • Coordinated engagement with implementing agencies and stakeholders to ensure effective participation
Expected benefits	• Improved capacity of stakeholders to design and implement climate-resilient urban solutions • Strengthened regional and international collaboration networks supporting adaptation efforts • Increased access to financial resources, technical support, and partnerships for resilience projects
Key milestones	• September 2025: Activity commencement and event prioritization • Ongoing: Preparation and participation in selected events as per schedule • Within 1 month after each event: Submission of participation reports and documentation • December 2030: Final activity report and lessons learned submission
Activity Risks	Risk 1: High costs and budget constraints Mitigation: Prioritize high-impact events and seek co-funding or sponsorship opportunities Risk 2: Last-minute cancellations or restrictions (e.g., travel bans, pandemics) Mitigation: Plan for hybrid or virtual participation and maintain flexible scheduling
Activity EXIT criteria	1. Completion of all planned event participations within the timeframe 2. Submission of comprehensive reports summarizing outcomes, lessons learned, and networking results 3. Demonstrated application of knowledge and partnerships established to ongoing or future urban resilience initiatives
Prepared by	Reshma Tamang, KMC Officer, Submitted on May 27, 2025

21.2.9 Activity Brief for 3.1.5.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.1.5.1
Activity Name	Undertake Knowledge, Attitude, and Practice (KAP) surveys
Location	Urban communities of Thimphu and Paro
Expected start date	July 2025
Completion date	End of project -2031
Approved budget	USD 30,000 Nu. 2,493,300
Responsible Parties	PMU and local consultant
Focal Person	Reshma Tamang, KMC Officer, rtamang@moit.gov.bt, 17510460
ACTIVITY DETAILS	
Activity Background	This activity is initiated to regularly assess the knowledge, attitudes, and practices of urban communities and stakeholders in Thimphu and Paro regarding climate change causes, impacts, and adaptation measures, as well as to capture project outcomes based on the ECRUL results framework. The KAP surveys will provide a critical evidence base for tracking progress, identifying behavioral changes, and informing adaptive management of the project. It addresses the need to integrate traditional knowledge, participatory data collection methods, and modern ICT tools to strengthen climate resilience in mountainous urban settings.
Activity Description	The activity entails designing and implementing KAP surveys at three key intervals: baseline (Q4 2025), mid-term (Q4 2027), and before terminal evaluation (Q4 2030). These surveys will measure the knowledge, perceptions, and behavioral changes related to climate change and urban resilience, capturing data at individual, community, and organizational levels. Employing mixed methods such as household interviews, focus groups, on-site measurements, and online tools, the surveys will leverage mobile ICT and geospatial technologies—including geo-tagged and time-stamped multimedia—to enrich data quality and enable participatory monitoring. Analyses will inform stakeholders on progress against indicators like people sensitized about urban resilience and the level of knowledge and perception of targeted beneficiaries. Survey outputs will support communication strategies and adaptive planning, and results will be disseminated nationally and internationally in collaboration with academic and knowledge partners.
Objectives	1. Conduct baseline, mid-term, and terminal KAP surveys to assess knowledge, attitudes, and practices related to climate change and urban resilience in Thimphu and Paro. 2. Evaluate changes in climate change adaptation capacity at individual, community, and organizational levels resulting from ECRUL interventions. 3. Provide timely, actionable data to inform project planning, communication, and implementation adjustments in alignment with the ECRUL results framework and indicators

Scope	Inclusion: • Design and conduct KAP surveys in Year 1 (baseline), Year 3 (mid-term), and Year 6 (terminal). • Use of participatory data collection methods leveraging mobile ICT and geospatial tools. • Assessment of knowledge, attitudes, perceptions, and behavioral capacities regarding climate change and adaptation. • Data cleaning, analysis, and reporting aligned with ECRUL indicators #11 (number of people sensitized) and #12 (level of knowledge, awareness, and perception). • Dissemination of findings to relevant stakeholders at community, national, and international levels. Exclusion: • Implementation of climate adaptation or resilience interventions outside of survey data usage. • Surveys beyond the urban areas of Thimphu and Paro or outside ECRUL thematic focus
Key requirements	• Recruitment of a local consultant for 15 weeks in total, distributed across survey rounds (approx. 35 days in Years 1, 3, and 6). • Skilled team in survey design, participatory methods, mobile ICT, and geospatial data collection. • Ethical clearance and community engagement protocols. • Tools and software for data management, GIS, and multimedia data processing. • Logistic support for fieldwork including transportation and equipment (smartphones, GPS devices). • Coordination with collaborating agencies, communities, and private sector stakeholders
Expected benefits	• Urban communities of Thimphu and Paro—including men, women, youth—benefiting from tailored, evidence-driven climate resilience interventions. • Policy makers and practitioners equipped with robust behavioral and perception data to guide urban resilience programming. • The ECRUL project benefited from data against indicators related to sensitization, knowledge, awareness, and perception of urban resilience and NbS.
Key milestones	• Q3 2025 – Survey tool development and validation • Q4 2025 – Baseline survey implementation • Q1 2026 – Data analysis and reporting • Q4 2027 – Mid-term survey implementation • Q1 2028 – Data analysis and reporting • Q4 2030 – Terminal survey implementation • Q1 2031 – Final data analysis and comprehensive dissemination

Activity Risks	Risk 1: Limited community participation or survey fatigue impacting data reliability. Mitigation: Technical challenges with ICT and geospatial tools causing delays or data quality issues. Risk 2: Implement a strong community engagement strategy involving local leaders to encourage participation and minimize fatigue. Mitigation: Provide comprehensive training and support to enumerators on ICT and geospatial tools, alongside contingency planning for technical issues.
Activity EXIT criteria	1. Successful completion of all three KAP survey rounds according to schedule and budget. 2. High-quality, reliable data outputs aligned with ECRUL indicators and results framework. 3. Demonstrated use of survey data in project decision making, communication, and adaptation planning. 4. Broad dissemination and uptake of knowledge products and survey findings by stakeholders.
Prepared by	Tashi Dorji P, Project Manager, Submitted on July 27, 2025

21.2.10 Activity Brief for 3.2.1.1

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.1
Activity Name (As stated in ProDoc)	3.2.1.1. Annual Planning and review workshop which includes plan preparation and monitoring of indicators in project results framework for adaptive management, annual lesson learning session among project stakeholders; Complete annual PIR and conduct mid-year review of annual work plan implementation status for adaptive management of project activities.
Location	NA
Expected start date	December 2025
Completion date	December 2030 (repeated every year in December)
Approved budget	USD 60,000 (\$ 10,000 each year) Nu. 4,986,600
Responsible Parties	M&E Officer and PMU staff
Focal Person	Tshering Phuntsho, M&E Officer, tsheringphuntsho@moit.gov.bt, 17410213
ACTIVITY DETAILS	
Activity Background	The Annual Planning and Review Workshop (APRW) is a cornerstone activity within the ECRUL project's Monitoring and Evaluation system. It serves to prepare project plans and monitor indicators in the project results framework, enabling adaptive management and consistent tracking of outcomes. The annual PIR is compiled based on validated data during the workshop, which also feeds into independent reviews such as the MTR and TE. This process ensures alignment with GEF-specific M&E policies and helps inform decision-making for achieving intended project impacts.
Activity Description	This activity annually convenes all project focal persons from RPs and stakeholders during the fourth quarter. The workshop facilitates the preparation and validation of the AWP, including fiscal year plans as required by UNDP and the MoF. It also reviews progress against the project's results framework, encompassing all 13 indicators, including the 5 LDCF core indicators. While the ECRUL project remains committed to achieving its 91 sub-activities by 2031, the approach is adaptive, allowing for the identification of new sub-activities, mid-course adjustments, budget reallocations, scope modifications, and informed strategic decisions based on performance data—without compromising overall project outcomes. The workshop actively promotes these adaptive management practices. Additionally, the APRW features an annual lesson-learning component that encourages stakeholders to share experiences, thereby improving the quality of project implementation. Finally, it ensures that all necessary inputs for preparing the annual PIR, including physical and financial progress data, are reviewed, validated, and finalized during the workshop.
Objectives	1. Establish and maintain a robust M&E system adhering to GEF-specific policies, enabling effective adaptive management of the ECRUL project. 2. Produce comprehensive Annual PIRs, which aid in independent Mid-Term and Terminal Evaluations assessing project outcomes. 3. Facilitate annual review and learning sessions to enhance stakeholder collaboration, responsiveness to beneficiary needs, and overall project effectiveness.

Scope	Inclusion: • Attendance by all focal persons from RPs, UNDP, MoF, and others • Preparation and validation of the AWP and next fiscal year's work plan. • Monitoring and review of all project results framework indicators. • Completion of mid-year review of work plan implementation status. • Compilation and validation of physical and financial progress data for PIR. • Conducting annual lesson-learning sessions to share experiences and results. Exclusion: • Participants do not include TAAC and PSC members. • Field-level implementation activities unrelated to planning and review processes.
Key requirements	• Advance agreement on workshop dates and timely communication with all participating entities. • Quality and timely reporting and progress updates from RPs. • Appropriate workshop venue and logistical support. • Availability of accurate and up-to-date project monitoring data and budget/financial reports.
Expected benefits	• Strengthened adaptive management leading to more responsive and effective project implementation. • Improved alignment and transparency of project activities with intended goals/outcomes and GEF requirements. • Enhanced stakeholder engagement and informed decision-making through shared learning.
Key milestones	• Second week of last month of Q4: • Finalization of Q1 Work Plan for next year • Finalization of Annual Work Plan for both UNDP and MoF • Annual Review of the 13 Results Framework indicators • Completion for preparation of the annual PIR
Activity Risks	Risk 1: Insufficient data for the review of the results framework, which may hinder comprehensive analysis and adaptive management. Mitigation: Set clear deadlines for data submission, ensure quality control measures, and provide support to data providers to guarantee completeness and accuracy. Risk 2: Delays or low quality of reporting from RPs that could affect timely and accurate planning and review. Mitigation: Maintain ongoing communication with RPs, provide training or refresher sessions on reporting standards, and enforce accountability for timely and high-quality submissions
Activity EXIT criteria	Success criteria: 1. Full attendance by all focal persons and participating stakeholders. 2. Submission of comprehensive and quality annual physical and financial progress updates. 3. Finalized and approved Annual Work Plan for the upcoming year. 4. Clear Record of Decision (RoD) documented from the meeting. 5. Timely completion and submission of PIR and incorporation of findings into adaptive management decisions.
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on May 28, 2025

21.2.11 Activity Brief for 3.2.1.2

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.2
Activity Name (As stated in ProDoc)	3.2.1.2. Baseline Survey and assessment as necessary to update all indicators in the results framework at mid-term and end of project.
Location	NA
Expected start date	October 2025
Completion date	January 2030 (with annual updates)
Approved budget	USD 17,848 Nu. 1,483,347.28
Responsible Parties	M&E Officer and PMU staff
Focal Person	Tshering Phuntsho, M&E Officer, tsheringphuntsho@moit.gov.bt, 17410213
ACTIVITY DETAILS	
Activity Background	This activity supports the ECRUL project's need for accurate, timely data to track progress and results. To ensure effective performance management and strategic adjustment, baseline data and targets of 13 indicators need validation and updates. This enables course correction and enhances accountability towards project goals through mid-term and end-of-project assessments.
Activity Description	The baseline survey and subsequent assessments aim to validate and update all indicator targets and baselines within the ECRUL Results Framework. The initial baseline survey will identify which indicators each RP contributes to and ensure alignment with overall project targets. The activity will confirm or revise targets for each year from 2025 to 2030, validate data sources and collection methods, and determine the level of data disaggregation needed (e.g., gender, location). Annual reassessments following performance reviews in December allow necessary course corrections to meet ultimate objectives of ECRUL. This multi-stage data validation process ensures robustness in monitoring and evaluation and supports adaptive project management.
Objectives	1. Validate baseline values and targets for all 13 indicators across RPs 2. Set annual targets for each indicator from 2025 through 2030 3. Confirm data sources, collection methodologies, and disaggregation requirements to ensure data quality and relevance
Scope	Inclusion: • Identification of RP contributions to each of the 13 indicators • Validation and updating of baseline values and target figures at national and community levels • Assessment and confirmation of data sources and collection methods • Determining disaggregation levels for data (e.g., gender, geography) • Annual review and update of targets based on performance data Exclusion: • Data collection beyond agreed indicators or beyond RP contributions • Implementation of interventions based on survey findings (covered under other project activities)
Key requirements	• Qualified statistician for indicator validation and baselines • Access to data sources and cooperation from RPs • Data collection tools for disaggregated data gathering • Timeline aligned with project cycle for updates

Expected benefits	• Reliable, current data to inform project management decisions. • Enhanced ability to measure progress and impact accurately • Improved accountability with validated and agreed targets • Effective course corrections through evidence-based annual target revision
Key milestones	• October 2025: Conduct initial baseline survey and validation • December 2025 onward: Annual review and target adjustment. • January annually (2026-2030): Conduct baseline/assessment surveys
Activity Risks	Risk 1: Delays in data collection due to partner coordination challenges Mitigation: Early engagement with all partners and clear communication of timelines and requirements Risk 2: Inaccurate or incomplete data impacting target validation Mitigation: Capacity building and support for data collection and reporting Risk 3: Limited capacity of partners to provide required data sources Mitigation: Robust data quality assurance processes
Activity EXIT criteria	Success criteria: 1. Complete and validate baseline survey for 13 indicators for all RPs 2. Agree on 2025-2030 targets with all RPs on documented methods. 3. Annual target reviews and baseline updates conducted as scheduled 4. Data collection methods and disaggregation levels clearly defined and implemented 5. Conditions to say that activity is completed: 6. Final report on baseline survey and assessment validated and approved 7. All RPs have confirmed targets and data frameworks 8. Established schedule and procedures for annual baseline updates
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on May 28, 2025

21.2.12 Activity Brief for 3.2.1.3

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.3
Activity Name (As stated in ProDoc)	3.2.1.3. Preparation of the annual GEF Project Implementation Report (PIR).
Location	NA
Expected start date	December 2025 (annually in December)
Completion date	December 2030
Approved budget	USD 14,152 Nu. 1,176,172.72
Responsible Parties	M&E Officer and PMU staff
Focal Person	Tashi Dorji P, Project Manager, taship1@moit.gov.bt, 17439649
ACTIVITY DETAILS	
Activity Background	This activity ensures the timely and accurate preparation and submission of the annual PIR to the GEF Secretariat as required each year. It contributes to monitoring, updating, and reporting progress against the project results framework indicators, thereby supporting transparency, accountability, and adaptive management of the project.
Activity Description	The PIR preparation is led by the PMU annually, typically in Q4 (December). It consolidates data and progress from RPs based on their approved Annual Work Plan (AWP) and budget. The PIR provides a comprehensive assessment of project progress, results, risks, and challenges during the reporting period (July of previous year to June of current year). UNDP undertakes quality assurance of the PIR before submission to the GEF. The report is also shared with the Project Board to ensure informed decision-making and alignment with GEF strategic goals.
Objectives	1. Complete the annual PIR covering the reporting period accurately and on schedule. 2. Ensure quality assurance of the PIR through UNDP's review process. 3. Track project progress, risks, performance, and lessons learned, supporting transparency and adaptive management aligned with GEF requirements.
Scope	Inclusion: • All project activities implemented by various RPs, stakeholders, and beneficiaries during the reporting period Exclusion: • Cumulative reporting of previous years (focus on current year only)
Key requirements	• Capacity development and training for the M&E Officer and PMU team on PIR preparation. • Timely and quality progress reports from RPs on project activities. • Effective coordination and communication among PMU, RPs, UNDP, and other stakeholders. • Familiarity with GEF reporting formats and submission protocols.

Expected benefits	• Improved transparency, accountability, and oversight of project implementation. • Enhanced adaptive management through lessons learned and risk assessments. • Strengthened confidence among GEF Secretariat, donors, and beneficiaries. • Support for achieving mandatory gender and other cross-cutting indicators linked to ECRUL Project objectives
Key milestones	• By the first week of December (last month of Q4) each year: Preparation of PIR. • By the third week of December each year: Submission of PIR to UNDP/GEF.
Activity Risks	Risk 1: Untimely or poor-quality progress reports from RPs. Mitigation: Constant reminders, follow-up on report quality in advance, and provide necessary support and capacity building to RPs and PMU team. Risk 2: Delays in PIR approval or submission. Mitigation: Establish clear internal timelines and workflows for validation and UNDP quality assurance.
Activity EXIT criteria	1. Quality progress reports submitted by RPs within the agreed timelines. 2. Timely, complete, and quality PIR prepared and internally validated by PMU. 3. Successful submission of the PIR to UNDP/GEF through online platforms before the deadline.
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on May 27, 2025

21.2.13 Activity Brief for 3.2.1.4

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.4
Activity Name (As stated in ProDoc)	3.2.1.4. Technical Advisory Committee (TAAC) meetings and sessions.
Location	NA
Expected start date	August 2025 (and thereafter as needed, at least twice a year)
Completion date	December 2030
Approved budget	USD 18,000 (\$ 3,000 each year) Nu. 1,495,980
Responsible Parties	TAAC members and PMU
Focal Person	Sugan Pradhan , PTS, suganp@moit.gov.bt, 17117004
ACTIVITY DETAILS	
Activity Background	The TACC comprises multi-stakeholder representatives from relevant project RPs. It provides technical guidance to the PMU and stakeholders periodically and as required to address emerging issues. The TAAC strengthens governance, coordination, and technical oversight to ensure achievement of project objectives through expert advice and support.
Activity Description	TAAC will convene at least twice annually, starting August 2025 through December 2030, to discuss and resolve key technical challenges impacting project implementation. Meetings will provide valuable insights and strategic guidance to the PMU and RPs, helping to expedite activities and align interventions with project goals. The committee will review technical issues, monitor progress, and recommend adaptive management approaches. Regular updates and meeting outcomes will be communicated to the PSC if required.
Objectives	1. Serve as an advisory body to the PMU by providing strategic guidance throughout the project duration via biannual meetings. 2. Advise the PMU and RPs promptly on technical issues as they arise to expedite project implementation. 3. Support effective decision-making by identifying and addressing technical challenges early
Scope	Inclusion: • Convening at least two meetings per year. • Advising PMU and RPs on technical challenges and project progress. • Reporting updates and recommendations to PSC where necessary. Exclusion: • Direct implementation or operational management of project activities outside advisory functions.
Key requirements	• Proactive communication of project challenges and issues to PMU for TAAC review. • Active participation of TAAC members and relevant technical experts. • Coordination and logistical support for organizing meetings (venues, virtual platforms). • Preparation and timely dissemination of meeting agendas, minutes, and action points.

Expected benefits	• Strengthened project outcomes through expert technical oversight and strategic advice. • Enhanced collaboration among stakeholders including PMU, RPs, and PSC. • Gender-sensitive and inclusive participation ensures diverse perspectives in technical discussions. • Improved alignment with ECRUL Project objectives and outcomes by addressing technical challenges proactively
Key milestones	• August 2025: First TAAC meeting convened. • By the second month of Q2 each year: Biannual TAAC meetings conducted thereafter. • Ongoing/as applicable: Meeting reports and recommendations submitted to PSC
Activity Risks	Risk 1: Scheduling conflicts or unavailability of key TAAC members. Mitigation: Advance scheduling and use of virtual meeting platforms. Risk 2: Delays in communication and documentation. Mitigation: Dedicated secretariat for timely meeting preparation and follow-up.
Activity EXIT criteria	1. All scheduled TAAC meetings conducted as planned through Dec 2030. 2. TAAC meetings effectively resolve key technical challenges and provide strategic guidance. 3. TAAC meeting updates and recommendations formally presented to and acknowledged by PSC
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on 27 May 2025

21.2.14 Activity Brief for 3.2.1.5

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.5
Activity Name (As stated in ProDoc)	3.2.1.5. Monitoring of project safeguards management plans, risk management measures and GRM, and gender action plans
Location	NA
Expected start date	Q4 of each year (1-5)
Completion date	Q4 of each year (1-5)
Approved budget	USD 100,000 Nu. 8,311,000
Responsible Parties	M&E Officer and PMU staff
Focal Person	Tshering Phuntsho, M&E Officer, tsheringphuntsho@moit.gov.bt, 17410213
ACTIVITY DETAILS	
Activity Background	This activity monitors the project safeguards management plans, risk management measures, GRM, and GAP across all RPs and PMU operations. It responds to the need for ongoing compliance, risk mitigation, and accountability in environmental, social, and gender considerations. Support is provided by the Gender Expert and M&E personnel within the PMU to ensure consistent monitoring across all project components.
Activity Description	The M&E Officer, supported by the PMU team, will periodically assess the implementation status of safeguards management plans, risk mitigation strategies, GRM functionality, and GAPs across all sites and RPs. This involves data collection, stakeholder consultations, and reporting on compliance and effectiveness. The activity aims to reinforce inclusive community participation—especially among women and vulnerable groups—and to guarantee transparency, accountability, and free, prior and informed consent (FPIC) throughout project implementation. Furthermore, it includes capacity building and expert support to strengthen safeguard and gender integration.
Objectives	1. Mitigate risks through comprehensive Stakeholder Engagement Plan (SEP), GAP, and project-specific GRM. 2. Provide an inclusive framework ensuring active participation of local communities, particularly women and vulnerable groups. 3. Uphold principles of accountability, transparency, and FPIC during project implementation.
Scope	Inclusion: • Monitoring-all project activities across all sites and RPs • Review of all Knowledge Management products and plans—communication, capacity development, procurement • Assessment of GRM activation and functionality • Training and capacity enhancement for RPs and PMU staff • Annual updating of grievance registers, risk management measures, and GRC membership lists Exclusion: • Direct implementation of corrective actions (beyond making recommendations) • Project redesign or change management • Beneficiary engagement unrelated to monitoring activities

Key requirements	• Availability and implementation of comprehensive SEP, GAP, and project-specific GRM • PMU equipped with expertise in SES and gender safeguards or hiring external experts as needed • Access to project sites and records for monitoring • Coordinated collaboration among RPs, PMU, and supporting agencies
Expected benefits	• Strengthened compliance with environmental and social safeguard plans • Effective gender inclusion enhancing empowerment and participation • Fully operational grievance redress mechanisms allowing responsive and transparent handling of issues • Enhanced stakeholder ownership, with particular attention to gender and vulnerable groups • Reduction of occupational health and safety risks during and post project activities
Key milestones	• Q2 2025: GRC activated and ToR signed across all RPs and PMU • Q2 2025: Grievance registers maintained and updated by all RPs • Q4 annually (Years 1–5): GRC membership lists updated; risk management measures reviewed and adjusted; annual monitoring reports on safeguards, GRM, and GAP submitted
Activity Risks	Risk 1: Absence or inadequate SEP, GAP, GRM, and SES Plans Mitigation: Targeted training for RPs on safeguards and monitoring; continuous oversight by PMU M&E and Gender experts; collaboration with UNDP and replication of best practices from similar GEF projects (e.g., ACREWAS, Ecotourism). Risk 2: Limited access to project sites or data Mitigation: Early planning with local authorities and stakeholders to ensure smooth monitoring visits Risk 3: GRM non-responsiveness Mitigation: Capacity building, awareness raising, and regular monitoring to maintain functionality
Activity EXIT criteria	1. Grievance registers maintained and regularly updated at RPs and PMU 2. Active and functioning GRC with current membership lists 3. Reduction or resolution of all grievances filed 4. GAP fully developed, implemented, and monitored 5. No significant social or environmental issues reported at project sites 6. Stakeholders are adequately and satisfactorily engaged, evidencing FPIC principles 7. Occupational health and safety risks are effectively managed during and after the project
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on 30 May 2025

21.2.15 Activity Brief for 3.2.1.6

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.6
Activity Name (As stated in ProDoc)	3.2.1.6. Supervision and Learning missions
Location	NA
Expected start date	Q4 Each year (1-6)
Completion date	Q4 Each year (1-6)
Approved budget	No specific budget for this activity
Responsible Parties	M&E Officer and PMU staff
Focal Person	Tshering Phuntsho, M&E Officer, tsheringphuntsho@moit.gov.bt, 17410213
ACTIVITY DETAILS	
Activity Background	This activity is a core component of the project's robust Monitoring and Evaluation system aligned with GEF-specific policies, aimed at adaptive management and effective project progress tracking. Periodic supervision and learning missions, facilitated by UNDP and PMU-DHS, will monitor project implementation, address challenges, and facilitate knowledge sharing to enhance overall learning and project outcomes.
Activity Description	Annual supervision and learning missions will take place primarily in Q4 of each year from 2025 to 2030. Supervision missions focus on quality assurance across all project activities, ensuring compliance with social and environmental safeguards, and reviewing updates to the GAP. Learning missions will generate, manage, and disseminate knowledge for replication and scaling. These missions include site visits to project locations in Bhutan, engagement with RPs, and provide guidance on addressing specific challenges.
Objectives	1. Supervise all project activities ensuring quality and adherence to social and environmental safeguards, including the GAP. 2. Facilitate periodic supervision missions. 3. Facilitate project learning for knowledge generation, management, and dissemination to support replication and upscaling.
Scope	Inclusion: • Missions from relevant offices, including site visits (all or select project sites) and meetings with RPs. • Providing advice to PMU and RPs on project-specific issues and challenges. Exclusion: • This is not an auditing mission and excludes any direct implementation or financial audits.
Key requirements	• Advance planning with identification of appropriate dates for missions to avoid clashes with local and national events. • Coordination among M&E teams and RPs for logistics and stakeholder engagement. • Clear communication and documentation tools for reporting findings and lessons learned.
Expected benefits	• Enhanced project implementation quality and compliance with safeguards. • Strengthened capacity of PMU, RPs, and other stakeholders through shared learning. • Effective tracking and adaptive management of project activities

Key milestones	• Every Q4, from 2025 through 2030: Conduct annual supervision and learning missions. • Following each visit: Submission of mission reports to inform project adaptations and knowledge sharing.
Activity Risks	Risk 1: High workload during Q4 for PMU, M&E staff, and RPs may affect availability. Mitigation: Finalize mission dates 2-3 months in advance; ensure objective, well-planned missions with clear agendas. Risk 2: Potential delays in reporting post-mission findings. Mitigation: Establish clear timelines and accountability for report submission.
Activity EXIT criteria	Success criteria: 1. Timely completion of all planned supervision and learning missions. 2. Mission reports submitted and shared with relevant stakeholders. 3. Evidence of beneficial outcomes for PMU, RPs, and overall project implementation. 4. Demonstrated learning applied to improve project management and implementation.
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on May 27, 2025

21.2.16 Activity Brief for 3.2.1.7

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.7
Activity Name (As stated in ProDoc)	3.2.1.7. Field consultations and meetings related to MTR and TE.
Location	National
Expected start date	Q2 2026
Completion date	Q2 2030
Approved budget	USD 27,500 Nu. 2,285,525
Responsible Parties	M&E Officer, PMU staff and consultants
Focal Person	Tshering Phuntsho, M&E Officer, tsheringphuntsho@moit.gov.bt, 17410213
ACTIVITY DETAILS	
Activity Background	This activity is initiated to conduct essential field consultations and meetings for the MTR and TE of the project. These evaluations are critical for assessing progress against project objectives, identifying challenges, and recommending adjustments to improve outcomes and sustainability. Field consultations allow for direct engagement with stakeholders, beneficiaries, and partners, ensuring comprehensive data collection and validation of project impacts.
Activity Description	This activity involves organizing and conducting field consultations and meetings for MTR and TE processes. It gathers qualitative and quantitative data through stakeholder interviews, focus groups, and site visits. Key goals include assessing project progress, validating results, identifying risks and opportunities, and generating actionable recommendations. Consultations ensure participatory engagement with government counterparts, implementing partners, local communities, and other stakeholders. The activity supports developing evidence-based MTR and TE reports that use gender-responsive approaches and align with project objectives and Sustainable Development Goals. This process enhances the accuracy and relevance of evaluations, promoting informed decision-making and project sustainability.
Objectives	1. Conduct field consultations and stakeholder meetings for MTR and TE 2. Validate project progress and identify improvement areas 3. Facilitate participatory engagement with diverse stakeholders
Scope	Inclusion: • Planning and scheduling field visits and meetings • Conducting interviews and focus groups with diverse stakeholders • Collecting and documenting relevant qualitative and quantitative data • Coordinating with MTR/TE teams and project management • Reporting findings to inform MTR and TE reports Exclusion: • Direct project implementation beyond evaluation support • Data analysis and report finalization by evaluation teams • Activities unrelated to MTR and TE processes

Key requirements	• Skilled facilitators and data collectors with expertise in MTR and TE methodologies • Access and clearance for field visits and stakeholder meetings • Coordination mechanisms with project teams and government counterparts • Logistical support for travel, venues, and communication
Expected benefits	• Enhanced accuracy and credibility of MTR and TE findings • Improved understanding of project achievements and challenges • Better informed decisions for corrections and sustainability • Inclusive stakeholder participation, focusing on gender and marginalized groups
Key milestones	• Q2 2026: Activity initiation and planning • Q3-Q4 2026 and subsequent years: Periodic field consultations aligned with MTR and TE schedules • Q2 2030: Completion of final field consultations and support activities
Activity Risks	Risk 1: Limited stakeholder availability or engagement Mitigation: Early scheduling, continuous communication, and flexible meeting arrangements Risk 2: Logistical challenges during field visits Mitigation: Advance planning and contingency measures Risk 3: Data quality and bias Mitigation: Use of standardized data collection tools and training of facilitators
Activity EXIT criteria	Success criteria: 1. Completion of all planned field consultations and meetings 2. Submission of complete and validated consultation reports to MTR and TE teams 3. Confirmation that data collected meets quality and coverage standards required for MTR and TE
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on June 3, 2025

21.2.17 Activity Brief for 3.2.1.8

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.8
Activity Name (As stated in ProDoc)	3.2.1.8. Independent Mid-term Review (MTR)
Location	NA
Expected start date	January 2028
Completion date	June 2028
Approved budget	USD 39,500 Nu. 3,282,845
Responsible Parties	M&E Officer and PMU staff
Focal Person	Tshering Phuntsho, M&E Officer, tsheringphuntsho@moit.gov.bt, 17410213
ACTIVITY DETAILS	
Activity Background	The Independent Mid-term Review is initiated to assess the progress, performance, and impact of the project at its midpoint for both GEF-finance and RGoB co-financed ECRUL activities. This review aims to identify successes, challenges, and lessons learned to guide adjustments in the remaining implementation period, ensuring that project outcomes are effectively achieved.
Activity Description	An independent international consultant will conduct the MTR following UNDP/GEF guidelines. The review will rigorously and impartially assess implementation status, including outputs, outcomes, and compliance with key indicators. It involves document reviews, stakeholder consultations (including RPs, PMU, MoF, beneficiaries), and analysis of gender, social equity (SES), GAP, GRM, risk, and knowledge management components. Recommendations will be developed for potential revision of project plans, subject to PSC approval. Updated baseline data and project indicators will also be incorporated to guide subsequent monitoring and the TE.
Objectives	1. Review the progress of GEF-financed and RGoB co-financed project activities at midterm. 2. Recommend revisions to project plans and results framework based on findings and analysis. 3. Update baseline data and performance indicators for ongoing monitoring and evaluation. 4. Collect relevant data in preparation for the TE.

Scope	Inclusion: - Independent, impartial, and rigorous review conducted by an international consultant. - Consultations and one-to-one discussions with RPs, PMU team, MoF, beneficiaries, and other key stakeholders. - Evaluation of project activities, outputs, indicators, and beneficiaries with gender and age disaggregation, alongside SES, GAP, GRM, risk management, and KM assessment. Exclusion: - Detailed financial audit beyond compliance review. - Components outside the project scope or budget.
Key requirements	- Development and finalization of a comprehensive ToR. - Hiring a qualified international consultant via transparent procurement managed by PMU, consulting RPs and UNDP. - Full access to project data, documents, personnel. - Logistical and administrative support for field missions.
Expected benefits	- Evidence-based insights on project performance and impact at midterm. - Identify good practices and actions to improve implementation. - Strengthened accountability and donor confidence. - Enhanced gender-responsive monitoring and evaluation, with inclusive benefits across gender and vulnerable groups. - Updated baselines and indicators for tracking and evaluation.
Key milestones	- September 2027: ToR development and finalization - January 2028: Onboarding of consultant - April 2028: Draft MTR report submission - May 2028: Stakeholder validation workshop - June 2028: Final MTR report submission
Activity Risks	Risk 1: Delay in developing a comprehensive ToR Mitigation: Prepare ToR early in Q2 Year 3 with UNDP support Risk 2: Limited pool of experienced international consultants Mitigation: Broad dissemination of EOI through multiple channels. Risk 1: Procurement delays Mitigation: Close monitoring and expediting of procurement within PMU.
Activity EXIT criteria	- Submission and approval of the final mid-term review report - Validation and dissemination of findings among project stakeholders - Clear recommendations for project adjustments endorsed
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on June 22, 2025

21.2.18 Activity Brief for 3.2.1.9

GENERAL ACTIVITY INFORMATION	Sub Activity No.: 3.2.1.9
Activity Name (As stated in ProDoc)	3.2.1.9. Independent Terminal Evaluation (TE)
Location	NA
Expected start date	July 2030
Completion date	December 2030
Approved budget	USD 60,000 Nu. 4,986,600
Responsible Parties	International Consultant supported by M&E Officer, PMU staff
Focal Person	Tshering Phuntsho, M&E Officer, tsheringphuntsho@moit.gov.bt, 17410213
ACTIVITY DETAILS	
Activity Background	This Independent Terminal Evaluation is initiated to assess the overall achievements and challenges of the ECRUL Project at its conclusion. The evaluation will provide an objective analysis of the project's effectiveness, relevance, efficiency, and sustainability, focusing on the outcomes realized during implementation. The findings will inform stakeholders and guide future programming decisions.
Activity Description	The Independent Terminal Evaluation will systematically examine the results and impacts of the ECRUL Project, verifying the extent to which project objectives were met. The evaluation will utilize qualitative and quantitative data gathered from projects' beneficiaries and implementing partners across the targeted communities. It will identify best practices, constraints, and lessons learned, culminating in recommendations that can enhance future project design and execution. Deliverables will include an evaluation report and presentation of findings to key stakeholders.
Objectives	1. Assess the extent to which ECRUL Project outcomes and objectives have been achieved. 2. Identify key successes, challenges, and lessons learned from project implementation. 3. Provide actionable recommendations for future programming and policy formulation
Scope	Inclusion: • Review of all project components and interventions nationally. • Collection and analysis of primary and secondary data. • Stakeholder consultations, including beneficiaries, local authorities, and project staff. • Preparation and dissemination of the evaluation report. Exclusion: • No audit of financial records beyond ensuring budget utilization aligns with activity goals. • No direct implementation or follow-up of recommended actions post-evaluation.

Key requirements	• Access to project documentation and reports. • Cooperation from project staff and stakeholders. • Availability of beneficiary and partner communities for consultations. • Qualified independent evaluation team with expertise in project monitoring and evaluation. • Clearly defined TOR
Expected benefits	• Provide transparent accountability to donors and stakeholders. • Inform strategic planning for future development initiatives in the sector
Key milestones	• July 1, 2030: Start of evaluation • July - September 2030: Data collection • November 15, 2030: Draft report submission • November 30, 2030: Stakeholder validation workshop • December 20, 2030: Final report submission
Activity Risks	Risk 1: Limited access to some targeted communities due to security or logistical challenges. Mitigation: Early engagement with local authorities and flexible scheduling. Risk 2: Potential bias if stakeholders are unwilling to provide candid feedback. Mitigation: Use of anonymous data collection methods and independent evaluators. Risk 3: Delays in data provision from project partners impacting timeline. Mitigation: Clear communication of deadlines and continuous follow-up.
Activity EXIT criteria	1. Completion of data collection and analysis. 2. Receipt of the validated final evaluation report accepted by the ECRUL Project Management Office. 3. Presentation of evaluation findings to all relevant stakeholders
Prepared by	Tshering Phuntsho, M&E Officer, Submitted on June 21, 2025

21.3.1 Budget breakdown for 3.1.1.1

SN	Budget Items	ECRUL budget in USD
1	Local Consultants	\$35,000
	Description Output 3.1, Activity 3.1.1: Development of gender-responsive Communication Plan and Strategy for dissemination of project information through communication channels. Item: 1-Hire Local Expert to prepare Plan and Strategy. Calculation: unit cost \$ 450 x 78 = \$ 35,000	
Total		\$35,000

21.3.2 Budget breakdown for 3.1.1.2

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$45,000
	Description Output 3.1, Activity 3.1.1: Establishment of website, linkage to existing climate associated platforms and opening social media accounts for the timely information sharing. Item: 1- Local IT consultancy Firms. Calculation: unit cost \$ 450 x 100 = \$ 45,000	
Total		\$45,000

21.3.3 Budget breakdown for 3.1.2.1

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$40,000
	Description Output 3.1, Activity 3.1.2: Prepare videos / brochures/ flyers/posters and other communication materials on project success stories, case study, progress, lessons learnt and impact stories describing the theory of change. Item: 3: Goods and materials. Calculation: unit cost \$ 40,000 x 1 = \$ 40,000	
2	Contractual services-Company	\$90,000
	Description Output 3.1, Activity 3.1.2: Prepare videos / brochures/ flyers/posters and other communication materials on project success stories, case study, progress, lessons learnt and impact stories describing the theory of change. Item: 1:Contractual services for videographer and graphics designer. Calculation: unit cost \$ 65,000 x 1 = \$ 65,000 Output 3.1, Activity 3.1.2: Prepare videos / brochures/ flyers/posters and other communication materials on project success stories, case study, progress, lessons learnt and impact stories describing the theory of change. Item: 2: Promotion of the project by broadcasting it in the national news. Calculation: unit cost \$ 25,000 x 1 = \$ 25,000	
Total		\$130,000

21.3.4 Budget breakdown for 3.1.2.2

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$60,000
	Description Output 3.1, Activity 3.1.2: Publication of books/research/articles on Climate/Urban Resilience. Item: 1: Attending and presenting the project output and articles in conferences and seminars- In Country and Ex-country. Calculation: unit cost \$ 30,000 x 1 = \$ 30,000 Output 3.1, Activity 3.1.2: Publication of books/research/articles on Climate/Urban Resilience. Item: 2: Organising Urban/ Climate resilience International/national conference in the country. Calculation: unit cost \$ 30,000 x 1 = \$ 30,000	
2	Other Operating Costs	\$20,000
	Description Output 3.1, Activity 3.1.2: Publication of books/research/articles on Climate/Urban Resilience. Item: 3: Goods and materials. Calculation: unit cost \$ 20,000 x 1 = \$ 20,000	
Total		\$80,000

21.3.5 Budget breakdown for 3.1.2.3

SN	Budget Items	ECRUL budget in USD
1	Other Operating Costs	\$40,000
	Description Output 3.1, Activity 3.1.2: Publication on key project outputs. Item: 1: Publishing of the article, books and research works in reputed journal publishers. Calculation: unit cost \$ 40,000 x 1 = \$ 40,000	
Total		\$40,000

21.3.6 Budget breakdown for 3.1.3.1

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$78,300
	Description Output 3.1, Activity 3.1.3: Support to exchange programmes for the public and private sector from other thromdes and development of localised replication action plans. Item: 1: Meetings and Workshops: 5 workshops. (\$71 DSA x 6 days) x 35 people)+(\$125 x 6 hall charges). Calculation: unit cost \$ 15,660 x 5 = \$ 78,300	
2	Travel	\$41,700
	Description Output 3.1, Activity 3.1.3: Support to exchange programme for the public and private sector from other thromdes and development of localised replication action plans. Item: 2: Travel cost: 5 workshops (\$39 x 6days) x 35 people. Calculation: unit cost \$ 8,340 x 5 = \$ 41,700	
Total		\$120,000

21.3.7 Budget breakdown for 3.1.4.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$26,400
	Description Output 3.1, Activity 3.1.4: Study visit and exchange programs for staff and students, TVET Trainers and component managers Item: 3: Tuition fee (1100 x 6) Calculation: unit cost \$ 6,600 x 4 = \$ 26,400	
2	Training, Workshops, Meetings	\$86,600
	Description Output 3.1, Activity 3.1.4: Study visit and exchange programs for staff and students, TVET Trainers and component managers Item: 2: Exchange programme for CST staff and students- in country and ex country: 6 days x 220 (DSA) x 5 participants + (3000)Air Fare Calculation: unit cost \$ 21,650 x 4 = \$ 86,600	
3	Travel	\$20,000
	Description Output 3.1, Activity 3.1.4: Study visit and exchange programs for staff and students, TVET Trainers and component managers Item: 1: Travel cost for visit by staff and student of CST to project site and other ideal sites. Calculation: unit cost \$ 20,000 x 1 = \$ 20,000	
Total		\$133,000

21.3.8 Budget breakdown for 3.1.4.2

SN	Budget Items	ECRUL budget in USD
1	Equipment	\$25,000
	Description Output 3.1, Activity 3.1.4: Organise and attend international and regional conferences, seminars, trade EXPOs on climate resilient urban development 2: Goods and materials Calculation: unit cost \$ 25,000 x 1 = \$ 25,000	
2	Training, Workshops, Meetings	\$25,000
	Description Output 3.1, Activity 3.1.4: Organise and attend international and regional conferences, seminars, trade EXPOs on climate resilient urban development Item: 3: Training and workshops: 2 workshops (\$110 x 5) x 20)+(\$125 x 5 hall charges) Calculation: unit cost \$ 12,500 x 2 = \$ 25,000	
3	Travel	\$100,000
	Description Output 3.1, Activity 3.1.4: Organise and attend international and regional conferences, seminars, trade EXPOs on climate resilient urban development Item: 1: Travelling and Associated Fees: 14 days x 220 (DSA) x 16 participants + (3000) Air Fare Calculation: unit cost \$ 25,000 x 4 = \$ 100,000	
Total		\$150,000

21.3.9 Budget breakdown for 3.1.5.1

SN	Budget Items	ECRUL budget in USD
1	Contractual services-Company	\$30,000
	Description Output 3.1, Activity 3.1.5: Carrying out regular knowledge, attitude and practice surveys Item: 1- Local Consultant (firm) for Survey Calculation: unit cost \$ 30,000 x 1 = \$ 30,000	
Total		\$30,000

21.3.10 Budget breakdown for 3.2.1.1

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$60,000
	Description Output 3.2, Activity 3.2.1: Project governance and monitoring Item: Annual Planning and review workshop which includes plan preparation and monitoring of indicators in project results framework for adaptive management, annual lesson learning session among project stakeholders; Complete annual PIR and conduct mid-year review of annual work plan implementation status for adaptive management of project activities. Calculation: unit cost \$ 2,500 x 24 = \$ 60,000	
Total		\$60,000

21.3.11 Budget breakdown for 3.2.1.2

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$17,848
	Description Output 3.2, Activity 3.2.1: Indicator surveys Item: Baseline Survey and assessment as necessary to update all indicators in the results framework at mid-term and end of project. Calculation: unit cost \$ 8,924 x 2 = \$ 17,848	
Total		\$17,848

21.3.12 Budget breakdown for 3.2.1.3

SN	Budget Items	ECRUL budget in USD
1	Staff Costs	\$14,152
	Description Output 3.2, Activity 3.2.1: Technical support to project implementation Item: Technical support on communication and outreach: 1. Technical Support on Communication & Outreach 2. Support the preparation of communication strategies. 3. Support the drafting of communication materials/pieces. 4. Support the preparation and the review of progress reports. 5. Support the publication of reports/stories through print and online media Calculation: unit cost \$ 14,152 x 1 = \$ 14,152 (based on actual working days and the time-sheet records)	
Total		\$14,152

21.3.13 Budget breakdown for 3.2.1.4

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$18,000
	Description Output 3.2, Activity 3.2.1: Technical advisory meetings Item: Technical Advisory Committee meetings and sessions. Calculation: unit cost \$ 1,500 x 12 = \$ 18,000	
Total		\$18,000

21.3.14 Budget breakdown for 3.2.1.5

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$100,000
	Description Output 3.2, Activity 3.2.1: Gender safeguards Item: Annual implementation review of Gender Action Plan Calculation: unit cost \$ 4,000 x 10 = \$ 40,000 Output 3.2, Activity 3.2.1: Social and environmental safeguards Item: Annual implementation review of social and environment safeguards and GRM. Calculation: unit cost \$ 6,000 x 10 = \$ 60,000	
Total		\$100,000

21.3.15 Budget breakdown for 3.2.1.7

SN	Budget Items	ECRUL budget in USD
1	Training, Workshops, Meetings	\$27,500
	Description Output 3.2, Activity 3.2.1: MTR & TE Item: Field consultations and meetings related to MTR. Calculation: unit cost \$ 2,500 x 5 = \$ 12,500 Output 3.2, Activity 3.2.1: MTR & TE Item: Field consultations and meetings related to Terminal Evaluation Calculation: unit cost \$ 2,500 x 6 = \$ 15,000	
Total		\$27,500

21.3.16 Budget breakdown for 3.2.1.8

SN	Budget Items	ECRUL budget in USD
1	International Consultants	\$26,000
	Description Output 3.2, Activity 3.2.1: MTR & TE Item: International consultant for independent Mid-term Review of GEF-financed and co-financed activities in line with UNDP/GEF requirements, and incorporate recommendations of MTR into revised project plans (management response) following PSC's approval). Calculation: unit cost \$ 1,000 x 26 = \$ 26,000	
2	Local Consultants	\$13,500
	Description Output 3.2, Activity 3.2.1: MTR & TE Item: Local consultant to support MTR process. Calculation: unit cost \$ 450 x 30 = \$ 13,500	
Total		\$39,500

21.3.17 Budget breakdown for 3.2.1.9

SN	Budget Items	ECRUL budget in USD
1	International Consultants	\$40,000
	Description Output 3.2, Activity 3.2.1: MTR & TE Item: International Consultant for independent Terminal Evaluation of GEF-financed and co-financed activities in line with UNDP/GEF requirements. Calculation: unit cost \$ 1,000 x 40 = \$ 40,000	
2	Local Consultants	\$20,000
	Description Output 3.2, Activity 3.2.1: MTR & TE Item: Local Consultant to support Terminal Evaluation process. Calculation: unit cost \$ 450 x 44 = \$ 20,000	
Total		\$60,000

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