Funding Proposal

FP050: Bhutan for Life

Bhutan | World Wildlife Fund, Inc. (WWF) | Decision B.18/08

2 November 2017

GREEN CLIMATE FUND

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Funding Proposal

Version 1.1

The Green Climate Fund (GCF) is seeking high-quality funding proposals.

Accredited entities are expected to develop their funding proposals, in close consultation with the relevant national designated authority, with due consideration of the GCF's Investment Framework and Results Management Framework. The funding proposals should demonstrate how the proposed projects or programmes will perform against the investment criteria and achieve part or all of the strategic impact results.

Project/Programme Title:	**BHUTAN FOR LIFE (BFL)**
Country/Region:	Bhutan
Accredited Entity:	WWF
Date of Submission:	First submitted 3 February 2017 Second submitted 20 April 2017 Third submission 15 May 2017 Fourth submission 29 May 2017 Fifth submission 2 June 2017 Sixth submission 22 August 2017

Contents

Please submit the completed form to:

fundingproposal@gcfund.org

A.1. Brief Project Information			
A.1.1. Project / programme title		**BHUTAN FOR LIFE**	
A.1.2. Project or programme		Project	
A.1.3. Country		**Bhutan**	
A.1.4. National designated authority		**Gross National Happiness Commission, Bhutan**	
A.1.5. Accredited entity		**WWF**	
A.1.5.a. Access modality		☐ Direct ☒ International	
A.1.6. Executing entity / beneficiary		**Executing Entity:** Ministry of Agriculture and Forests **Primary Beneficiaries:** 145,000 persons (roughly 50% women), comprising: 35,000 direct beneficiaries living within the protected areas, and 110,000 indirect beneficiaries living in buffer zones **Secondary Beneficiaries:** Downstream rural populations	
A.1.7. Project size category (Total investment, million USD)		☐ Micro (≤10) ☒ Medium (50<x≤250)	☐ Small (10<x≤50) ☐ Large (>250)
A.1.8. Mitigation / adaptation focus		☐ Mitigation ☐ Adaptation ☒ Cross-cutting	
A.1.9. Date of submission		3 February 2017	
A.1.10. Project contact details	Contact person, position	Shubash Lohani Director, Sustainable Landscapes	
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	Telephone number	Office land line + 1 202 495 4796 Mobile: + 1 202 384 9603	
	Mailing address	WWF, 1250 24th St NW, Washington, DC 20037-1193, USA	

A.1.11. Results areas *(mark all that apply)*

Reduced emissions from:

- ☒ Energy access and power generation
  (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
- ☐ Low emission transport
  (E.g. high-speed rail, rapid bus system, etc.)
- ☐ Buildings, cities and industries and appliances
  (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.)
- ☒ Forestry and land use
  (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.)

Increased resilience of:

- ☒ Most vulnerable people and communities
  (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.)
- ☒ Health and well-being, and food and water security (E.g. climate-resilient crops, efficient irrigation systems, etc.)
- ☐ Infrastructure and built environment (E.g. sea walls, resilient road networks, etc.)

☒ Ecosystem and ecosystem services (E.g. ecosystem conservation and management, ecotourism, etc.)

A.2. Project / Programme Executive Summary (max 300 words)

The Bhutan for Life (BFL) project will secure 51 percent of the nation's territory as managed under its network of Protected Areas (PAs), and serves as the cornerstone of Bhutan's bold pledge to remain carbon neutral, as re-stated in its Nationally Determined Contribution (NDC) under the Paris Agreement. It is also central to the country's plans for meeting its constitutional requirement to maintain a minimum of 60 percent of its land area under forest cover. The BFL project thus has the full backing of the Royal Government of Bhutan, with strong public support received during design consultations.

Despite the nation's network of PAs being relatively intact, many of these areas, and the people living in or adjacent to them, are under increasing pressure from economic development in surrounding areas, illegal extraction of resources, and natural disasters. These threats are exacerbated by the adverse impacts of climate change – projected to worsen over time – which include an increased incidence of extreme and variable weather, accelerated melting of glaciers, and longer dry seasons, resulting especially in increased risks from landslides, floods, and forest fires. The primary constraints faced by the Government in addressing these threats are capacity and funding, and the BFL project directly responds to these constraints.

The BFL project will employ an innovative financial model built around creation of a sinking fund to support improved management of the country's PAs while providing the time and resources to allow the Government to identify and secure long-term revenues sufficient to maintain these management improvements. While transformational for Bhutan, the project also will generate valuable experience to help achieve sustainable protected areas financing in other countries. Mitigation and adaptation benefits will be generated in a cost-effective manner, with GCF resources leveraging both public and private financing.

While there are strong co-benefits from the BFL project with regard to social and economic development and biodiversity conservation, there is a sound rationale for GCF support grounded in the climate mitigation and adaptation benefits to be generated. Carbon sequestration in forests is anticipated to increase by 35.1 million tons of CO2eq over the project's life, and 145,000 mostly vulnerable rural inhabitants will directly benefit from the improved resiliency of their communities and livelihoods. During execution, strong stakeholder engagement will be maintained, with gender considerations mainstreamed.

A.3. Project/Programme Milestone

Expected approval from accredited entity's Board (if applicable)	N/A
Expected financial close (if applicable)	June 2017
Estimated implementation start and end date	Start: 1st Quarter 2018 End: 4th Quarter 2031
Project/programme lifespan	Implementation: 14 years. GCF funding requested for 10 years Lifespan: 50 years. The Royal Government of Bhutan has committed to the long-term sustainable management of Bhutan's protected areas, well beyond the 14 years of this project life span.

B.1. Description of Financial Elements of the Project / Programme

Worldwide, protected areas depend on public budgets and grant financing for most of their expenses. This is also the case in Bhutan, and GCF grant co-financing is critical to ensure the full funding of the Bhutan for Life project. Several other financing alternatives, including additional public funding, additional grants from other sources or additional loans are discussed in detail in section D.1 below and were considered to not be feasible.

Therefore the choice of grants as the sole financial instrument of this project is appropriate, considering that (a) the goal is to provide transitional financing for PA management to achieve climate change mitigation goals and increase the resilience of communities and ecosystems; (b) PAs are considered public goods and are not generally managed as profit making entities; (c) Bhutan is a least developed country with severe budgetary limitations; and (d) the GCF grant will be matched by new public and private financing at a leverage ratio of approximately 1 : 1.67.[1]

Table B.1. BFL Program Cost Summary by Component *(millions of US dollars, rounded)*

BFL Component	Total Program Cost	GCF Funding Amount	RGoB plus private and other multilateral Donors
MITIGATION: Increasing Forestry and Land Use Climate Mitigation	2.4	1.8	0.6
ADAPTATION I: Ecosystem Based Adaptation to Improve Natural Resource Management and Livelihoods	12.0	5.9	6.1
ADAPTATION II: Ecosystem Based Adaptation to Enhance PAs Biodiversity	25.1	9.0	16.1
PROTECTED AREAS SUSTAINABLE MANAGEMENT	69.1	4.4	64.7
BFL Management, Safeguards and Contingencies	9.6	5.4	4.2
TOTAL PROGRAM	**118.2**	**26.5**	**91.7**

Section C.7."Institutional / Implementation Arrangements" and Annex 7 "Project Confirmation/Term Sheet" discusses disbursement arrangements from the GCF to the AE and from the AE to the Executing Entity.

[1] The leverage ratio of US$1.68 for each US$1 of GCF's investment comes from the sum of US$16.6M of expected non-GCF donor investments plus US$28M of new RGoB funding, against US$26.5M of requested GCF funding.

B.2. Project Financing Information

	Financial Instrument	Amount	Currency	Tenor	Pricing
(a) Total project financing	**(a) = (b) + (c)**	118.2	million USD ($)		
(b) GCF financing to recipient	(i) Senior Loans		Options		
	(ii) Sub. Loans		Options		
	(iii) Equity		Options		
	(iv) Guarantees		Options		
	(v) Reim. Grants		Options		
	(vi) Grants	26.5	million USD ($)		
	Total requested (i+ii+iii+iv+v+vi)	26.5	million USD ($)		

	Financial Instrument	Amount	Currency	Name of Institution	Tenor	Pricing
(c) Co-financing to recipient	Grant	11.6 (a)	million USD ($)	WWF		
	Grant	5.0 (b)	million USD ($)	DT Families Foundation		
	Grant	28.0 (c)	million USD ($)	RGoB new project financing		
	Grant	47.1 (d)	million USD ($)	RGoB baseline financing		
		…….				

(a) WWF board members and major donors' contributions to BFL over the 14 year period. See commitment letters in Annex 4.
(b) DT Families Foundation's contribution to BFL. See commitment letter in Annex 4.
(c) RGoB increased financing for PAs over the BFL 14 year period. See commitment letters in Annex 4.
(d) The RGoB commits to maintain, as a floor, the current annual expenditure in PAs of approximately US$ 3.4 M per year (comprised of US$ 2.9 M per year of central budget allocation plus at least US$ 0.5 M per year from the Bhutan Trust Fund for Environmental Conservation), or US$ 47.1 M over the BFL 14 year period

(d) Financial terms between GCF and AE (if applicable)	As the Accredited Entity (AE), WWF requests an accredited entity fee of 8% based on GCF funding to the project over the full implementation period. This fee will be used by the AE to cover its costs of project supervision and overseeing the achievement of progress throughout the project cycle (preparation, implementation, reporting, completion, evaluation). It will also allow the AE to maintain an active exchange and coordination with other BFL investors to ensure that GCF fiduciary standards are upheld. The AE fee, is independent of and in addition to the GCF financing for BFL and should not be conflated with BFL Project Management costs – the last line in table B1.1 above (also in more detail in Excel tables

	in Annex 5b). The latter is about the management activities and costs incurred by the BFL executing agencies such as carrying out safeguards mitigation measures and monitoring, costs related to the project management unit, etc. AE fee is to cover the cost of the GCF AE in its roles for overall portfolio supervision, implementation oversight, reporting to GCF Secretariat, etc. A breakdown of the AE fee by expense category and year is provided in Annex 7 “Project Confirmation/Term Sheet” and as a separate tab in Annex 5b. WWF will enter into a FAA with the GCF, which will regulate the terms and conditions described in the Term Sheet and any necessary deviations from the AMA. In accordance with the FAA, WWF shall administer the funds disbursed by the GCF. The GCF funds will be channelled through WWF in its capacity as implementing entity for the GCF to the Bhutan Ministry of Agriculture and Forests (the Executing Entity). WWF shall enter into a Project Cooperation Agreement (PCA) with the Executing Entity to provide a grant of US$ 26.6 M for the execution of the project. The PCA will establish clear roles and responsibilities for both parties for the delivery of the proposed activities, the schedule and conditions for instalments, the determination of the prevailing fiduciary standards and terms and conditions for arbitrations and termination of contract.

B.3. Financial Markets Overview (if applicable)

N/A

C.1. Strategic Context

The Kingdom of Bhutan is a small, landlocked, least developed country with a total area of 38,394 km2, characterized by rugged mountainous terrain with elevations ranging from 160 meters to more than 7,000 meters above sea level. Recent estimates put the country's 2015 population at 745,000, with more than half of the population living in rural areas working on small scale or subsistence agriculture. Electricity from hydropower is the country's largest export, followed by tourism. Fees on electricity exports and foreign assistance (mostly from India) are the public sector's main sources of revenue.

The Royal Government of Bhutan (RGoB) has always considered environmental conservation a centerpiece of the country's development strategy, and strives to mainstream environmental concerns into its overall development planning. The country's first modern legislation was the Forest Act of 1969, specifically aimed at protecting forests. Similarly, the National Forest Policy of 1974 was the first formal policy in the country, and helped establish a policy framework for conservation. This has been further strengthened through the formal adoption of the country's development philosophy of pursuing Gross National Happiness, which includes environmental conservation as one of its four pillars. Bhutan is one of the very few countries in the world to feature environmental conservation explicitly in its constitution.

Moreover, due to limited economic development, low population and extensive forests (forests cover approximately 70.5% of the land area, including important expanse of intact forests), and also due to the country's strong commitment to sustainable development, Bhutan is unique world-wide in that it is carbon negative, a net sink for greenhouse gases. According to the second national GHG inventory, the sequestration capacity of existing forests stands at approximately 6.3 million tons of CO_2e per year, while the country's total annual GHG emissions have hovered around 2.2 million tons of CO_2e (2013 figures).

Over the past 20 years, Bhutan has made unparalleled commitments to low-carbon development, climate mitigation and adaptation, as well as biodiversity conservation. At the UNFCCC COP15, Bhutan committed to remaining carbon neutral forever. Bhutan enshrined its commitment to maintain 60% of its territory under forest cover in the country's 2008 constitution. Furthermore, the country submitted, at COP21, an ambitious program of mitigation and adaptation laid out in its 2015 Nationally Determined Contribution (NDC) under the Paris Agreement, which put forward nine mitigation strategies and ten adaptation strategies with a strong focus on forest conservation and climate-smart natural resources management.[2] Bhutan is also developing a national REDD+ program, which is included in its NDC. Currently in the REDD+ readiness phase (2014-2018), Bhutan is committed to develop, by 2020, its National REDD+ Strategy and Action Plan, National Forest Monitoring System, National Forest Reference Level (RL) and/or Forest Emission Reference Level (FREL), as well as Safeguards Information Systems. The REDD+ program will contribute to both national forest conservation and climate change mitigation goals.

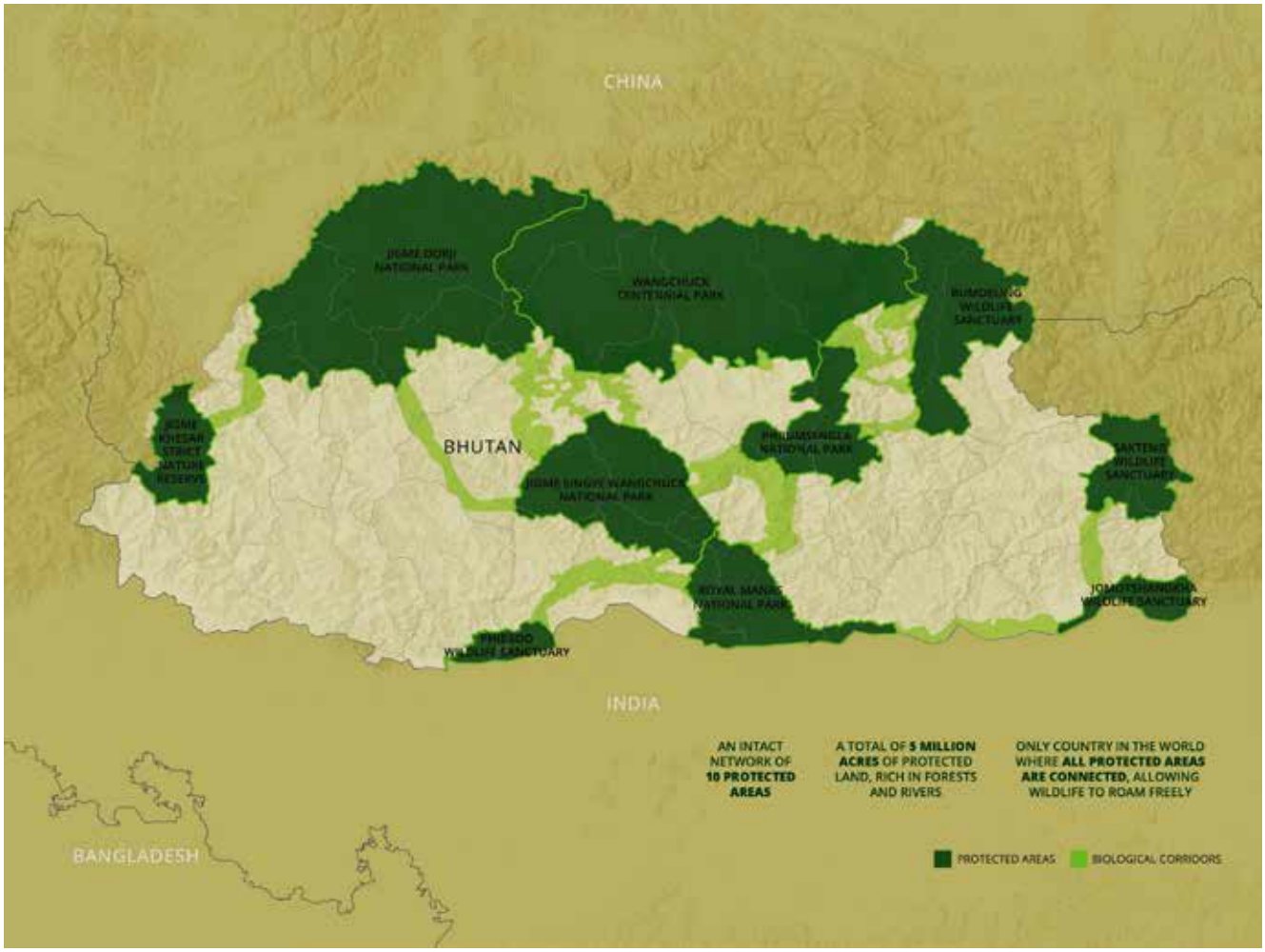
The Royal Government of Bhutan has thus made clear its commitment to following an environmentally and socially sustainable path to development – despite its being a small, mountainous, least developed country, with many pressing social and economic development needs and priorities. The country's NDC under the Paris Agreement reiterates the carbon neutrality pledge, and calls for international support for its climate change responses. Maintaining a minimum of 60 percent of its land under forest cover for all time, in accordance with the country's Constitution, is central to both its mitigation and adaptation strategies, with the Bhutan for Life project serving as the cornerstone for this effort. The country has applied for readiness support to develop a GCF programming strategy, with the key elements expected to include: the BFL project for managing landscapes under the PAs network, measures to improve management of forests outside of the PAs Network, investments to climate-smart the country's agriculture sector, steps to control growing transport and industrial emissions, protection of vital water supplies in the face of a changing climate, and enhanced preparedness for and response to climate-induced natural disasters.

[2] See the 2015 RGoB Intended National Determined Contributions

C.2. Project / Programme Objective against Baseline

Bhutan's protected areas, a critical climate mitigation and adaptation resources: Covering 19,750 square kilometres, Bhutan's protected areas system (PAS) encompasses over 51% of the country's territory, 41% of its forests, the upper watersheds of all the country's major rivers (most of them of international importance), is a carbon sink, and is a reservoir of biodiversity that includes many endemic species (see map below). The integrity of these protected areas, their forests and their biodiversity are of crucial importance for the country's climate change mitigation strategy (carbon sinks and reservoirs) and for its climate adaptation strategy, especially in providing ecosystem services important to the country's climate resilience (including regulation of water flows and water quality, control of river sedimentation affecting hydropower operations and development, protection against landslides, and providing flood risk reduction). These areas also provide many other ecosystem services of national and international significance, including provision of food and fodder, habitats for biodiversity, preservation of cultural and spiritual heritage, recreation, and important destinations for ecotourism. As the impacts of global warming increase over the coming decades, it will be even more important to manage these services effectively to ensure they continue to provide benefits to livelihoods and the Bhutanese economy.

Bhutan's PAS encompasses ten Protected Areas, eight Biological Corridors and one Royal Botanical Park



Current GHG emissions scenario: Bhutan is, overall, a net carbon sink for GHG emissions. The second national GHG inventory states that total annual GHG emissions have been around 2.2 million tons of CO2e. The sequestration capacity of existing forests is approximately 6.3 million tons of CO2e per year. This amounts to an estimated total

GHG emissions, including the land use change and forestry (LUCF) sector, of -4.1 million tons of CO2e annually. The second national GHG inventory also estimates emission trends for 1994-2009, and shows emissions have been growing mostly in the energy and industrial sector. Between the first GHG inventory year of 1994 and the second inventory year of 2000, emissions from energy grew at 21.4% a year mostly due to transport and industry growth. Emissions from industrial processes grew at about 8.7% a year. Due to almost 100% use of hydropower for electricity and relatively low industrialization in 2000, emissions were most significant from the agriculture sector due to methane and nitrous oxide from livestock management. Pressure on the most important carbon sink for the country, its forests, is mounting due to increase of demand for forests products, infrastructure development and pressures outside the border of the country.

Climate Vulnerability in Bhutan's environment and economy: As a landlocked mountain nation in the global "third pole" of the larger Himalayan region, Bhutan is highly vulnerable to the impacts of a changing climate. The increase in global average temperatures by 1°C has already led to significant changes in Bhutan's climate and many resulting impacts that will only worsen as temperatures continue to rise with increasing global emissions. Increasingly variable and intense precipitation patterns and increasing temperatures are contributing to more frequent and intense extreme events like strong storms and heat waves, increasing the frequency and intensity of hazards like droughts, floods, and landslides, alongside slower onset changes like retreating glaciers, changes in plant and animal phenology, vegetation composition, and species migration patterns.

As both the frequency and intensity of extreme climate events increase with a changing climate, the most vulnerable sectors are water resources, agriculture, forests, biodiversity, and hydropower production (see Table below).[3/4] Impacts on water resources, and resulting effects on dependent livelihoods and sectors like farming and hydropower are particularly significant and acute. For example, communities throughout Bhutan enjoy high water quality due to the protection and limited pollution of upstream sources, but as increasingly erratic rainfall and high intensity storms increase, sedimentation and resulting siltation of formerly clean sources is an increasing risk to human health, agriculture and hydropower productivity. Although water resources are historically abundant, exemplified through the contribution to GDP of the hydropower sector, there are increasing reports of local, acute water shortages due to drying springs. Since farmers have adapted to historically dependable flows from such springs, with very little storage and pumping infrastructure for irrigation, they are highly vulnerable to such non-stationary changes.

The observed climatic trends in Bhutan will lead to shifts in seasonal streamflow, ecosystems, and distributions of species depending on habitat shifts. The deterioration of ecosystem connectivity and the increase of habitat fragmentation have been identified as major sources of vulnerability for both terrestrial and aquatic ecosystems and their wildlife.

Another climate related threat, of particular relevance in Bhutan's rural areas, is the aggravation of human –wildlife conflicts. The combination of farmers farming in the vicinity of large intact ecosystems of high biodiversity has already resulted in significant levels of human-wildlife conflict, with wildlife (especially elephants) frequently raiding crops and negatively affecting farming yields and farmers retaliating by illegally killing wildlife. With climate change resulting in warming temperatures, increased precipitation variability and increased frequency of extreme weather events, all models predict that both farmers and wildlife will be in the move, with growing chances of conflict that would result in more losses, both for farmers and for wildlife.

[3] See RGoB, (2011) Kingdom of Bhutan, Second National Communication to the UNFCCC; National Environmental Commission; Ahmed, M and Suphachalasai S (2014) Assessing the Costs of Climate Change and Adaptation in South Asia, ADB Manila and Gautam et al (2013) Climate Change in the Himalayas: Current State of Knowledge" World Bank, Washington DC.
[4] Regarding Bhutan's vulnerability to climate change compared with other countries see for instance the University of Notre Dame Global Adaptation Index here and the German Watch Global climate risk Index here

Based on the Second National Communication to the UNFCCC and 2015 Nationally Determined Contribution (NDC) for the Paris Agreement, the table below summarizes the most important climate change impacts facing Bhutan relevant to BFL.[5] [6] See section E.4 for a fuller description of vulnerability by sector.

Sector	Impacts
Forestry and Biodiversity	• Drought in combination with increased lightning increasing forest fire risk • Changes in migration, habitat, and distribution of flora and fauna as tree lines shift northward, potentially increasing human wildlife conflict • Change in phenological characteristics of plants • Loss of species, particularly endemics • Change in migratory patterns of trans-boundary wildlife • Increased establishment of invasive species
Water Resources	• Increased sedimentation of rivers, reservoirs and distribution networks, reducing irrigation productivity, agricultural crop yields, hydropower productivity, and water quality • Reduced ability of catchment areas to retain water, increasing runoff and enhancing soil erosion • Increasingly variable precipitation patterns, reducing drinking water availability for people and livestock, crop yields and hydropower production
Agriculture	• Increasing crop yield instability: loss of production and quality due to variable rainfall, increasing temperatures • Decreased water availability for crop production. • Increased risk of extinction of already threatened crop species (traditional crop varieties) • Increased pest and disease
Infrastructure	• Increasing frequency and intensity of extreme storms, erosion leading to flash floods, landslides • Debris-covered glaciers forming huge moraine dam lakes that ultimately lead to glacial lake outburst floods (GLOF)

For more on climate change impact in Bhutan and on the adaptation responses proposed by UNFCCC experts please read Section E.4.1. "Vulnerability of country and beneficiary groups".

Gaps and barriers to long term protected area viability: Despite the overall high quality of Bhutan's diverse environments[7], many natural resources and rural livelihoods are threatened today by economic pressures on natural resources, such as illegal logging, forest fires and poaching in southern PAs. This calls for increase attention to and capacity for management of the country's PAs, especially protected areas vital for their climate and biodiversity benefits. However, Bhutan's current budgetary and technical resources are insufficient to address the threats and to properly manage the protected areas system, monitor climate change impacts, and undertake adaptation measures so as to deliver on the country's ambitious sustainable development and climate change goals.

Since their the inception of the PAs network, funding for management of these areas has depended on government financing and in recent years the contribution of Bhutan Trust Fund for Environmental Conservation, as depicted in the table below. Government contributions have oscillated in recent years between 2.35 million USD in fiscal year 2011 to 2.87 million USD in fiscal year 2016.

[5] See RGoB, (2011) Kingdom of Bhutan, Second National Communication to the UNFCCC; National Environmental Commission; Ahmed, M and Suphachalasai S (2014) Assessing the Costs of Climate Change and Adaptation in South Asia, ADB Manila and Gautam et al (2013) Climate Change in the Himalayas: Current State of Knowledge" World Bank, Washington DC.

[6] See the 2015 RGoB Intended National Determined Contributions

[7] See the 2016 assessment of Bhutan NPS in Ministry of Agriculture and Forests (2016)

Main sources of funding for Bhutan's PAs in recent years (in US dollars)

Recent sources of financing for Bhutan PAs	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
RGoB budget (USD)	2,350,000	2,670,000	2,360,000	2,800,000	2,680,000	2,870,000
Bhutan Trust Fund	500,000	500,000	500,000	500,000	500,000	500,000
Total	2,850,000	3,170,000	2,860,000	3,300,000	3,180,000	3,370,000

To ensure effective management of Bhutan´s protected area system for the continued provision of ecosystem services and the implementation of climate mitigation efforts and of adaptation measures in communities living in and around the protected areas, the total annual financial need over the long term is projected to be around 7.1 million USD per year (in 2016 USD). Taking the governmental allocation for FY2016 and adding an average contribution of 0.5 million USD annually from the Bhutan Trust Fund, the current baseline for public funding of PAs hovers around 3.4 million USD, a little less than half what would be needed for a proper sustainable management. This leaves an average annual gap of 3.6 million USD.

A large share of the public funding baseline, about 1.6 million USD, is destined for salaries for existing staff, while the remaining share is used to cover basic operating costs (e.g. gasoline, daily allowances for patrolling, utilities and rent) in each protected area. In addition to the public funding, Bhutan´s protected areas receive support from international donors from time to time. However, such support are both limited in their scope and coverage, proving this piece meal approach is not sufficient to manage the entire protected areas system to deliver the full potential climate mitigation, adaptation and biodiversity benefits.

Bhutan for Life – An innovative solution: This is where Bhutan for Life (BFL) comes in, providing one-time, 14-year bridge financing that will fill this resource gap and push Bhutan's PAs to a higher level of management and delivery. This financing will be used while the country gradually increases its own financing and management resources, so that by year 14, the country is able to fully finance the sustainable management of its protected areas system.

The primary **BFL short term outcome** is to enable Bhutan to immediately begin upgrading the management of natural resources in half of its territory, explicitly accounting for the impacts of climate change to enhance resilience for communities and ecosystems, while also maintaining carbon sinks and sequestration. For the **long term impact, BFL aims to** develop Bhutan's human and budgetary resources so the country can fully take on, unaided, the task of sustainably managing its protected areas system to meet greenhouse gas mitigation goals and build climate resilience to benefit people and nature.

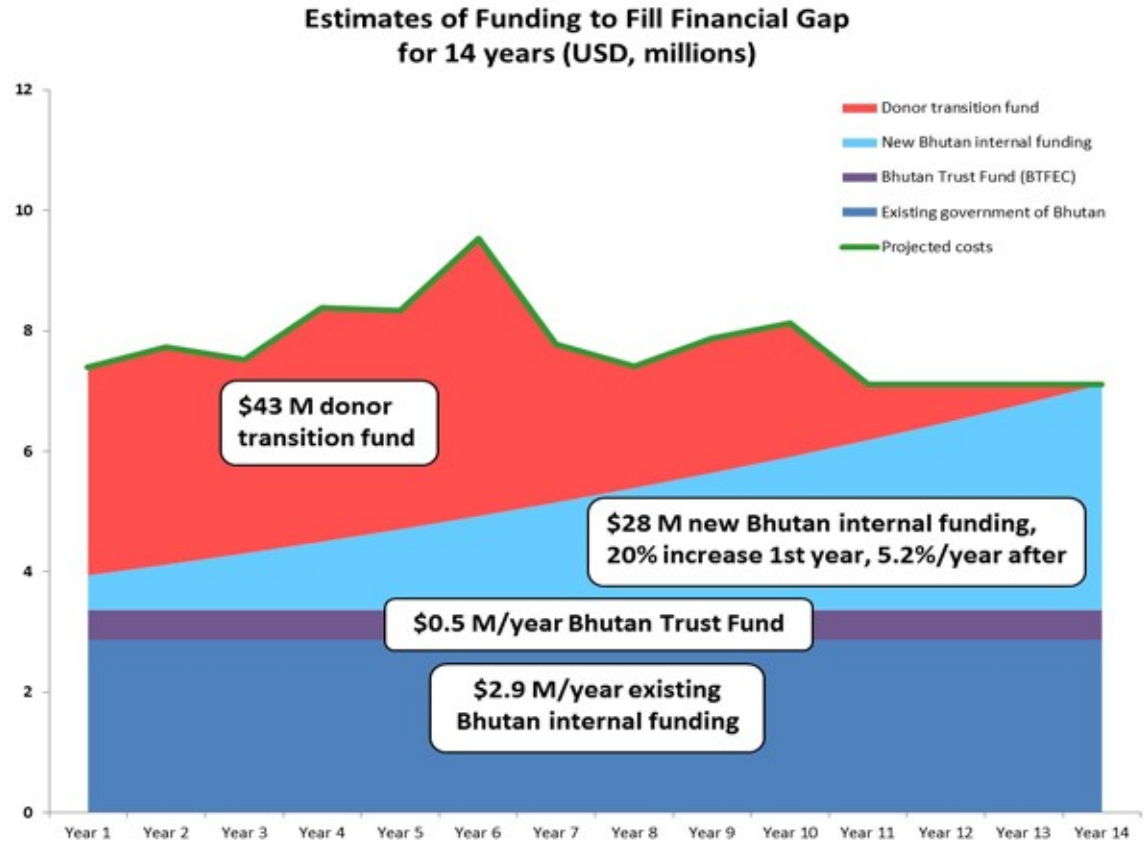
How it will work: BFL will employ a funding modality based on business models used to organize and finance large, complex projects designed to provide assurances to both investors and recipients. The approach begins with the development of a comprehensive long-term, climate-informed conservation plan for Bhutan's PAs, with targeted goals, activities, and costs (see discussion below and Annexes 5 and 6).

The financial gap between the country's current Protected Areas System (PAS) budget and the cost of this comprehensive long-term conservation plan has been assessed, and the government has committed to increase, year by year, its financial and human resource allocation to the PAS in order to reach full national funding by the end of the 14-year project period (see Annex 5).

As part of this management, financial and graduation strategy, private, bilateral, and multilateral donors are being engaged to fill the 14-year financing gap through a "multi-party, single-closing" pool of financing. The project only reaches effectiveness criteria and begins implementation when all the funds have been raised and all key legal and

financial effectiveness conditions have been met. This provides funders with assurance that their contributions will be put to use according to the terms, and that all BFL activities will be fully funded.

Once the full bridge financing has been secured, the project moves forward and funds are allocated to cover the annual gap between the government's allocations and the costs of improving PA management for greenhouse gas mitigation, enhanced climate resilience, and other sustainability benefits. During that time, the government of Bhutan increases annual expenditures, in part by creating new funding sources, and at the end of the project period, the government assumes responsibility for fully financing the management of the protected areas system.

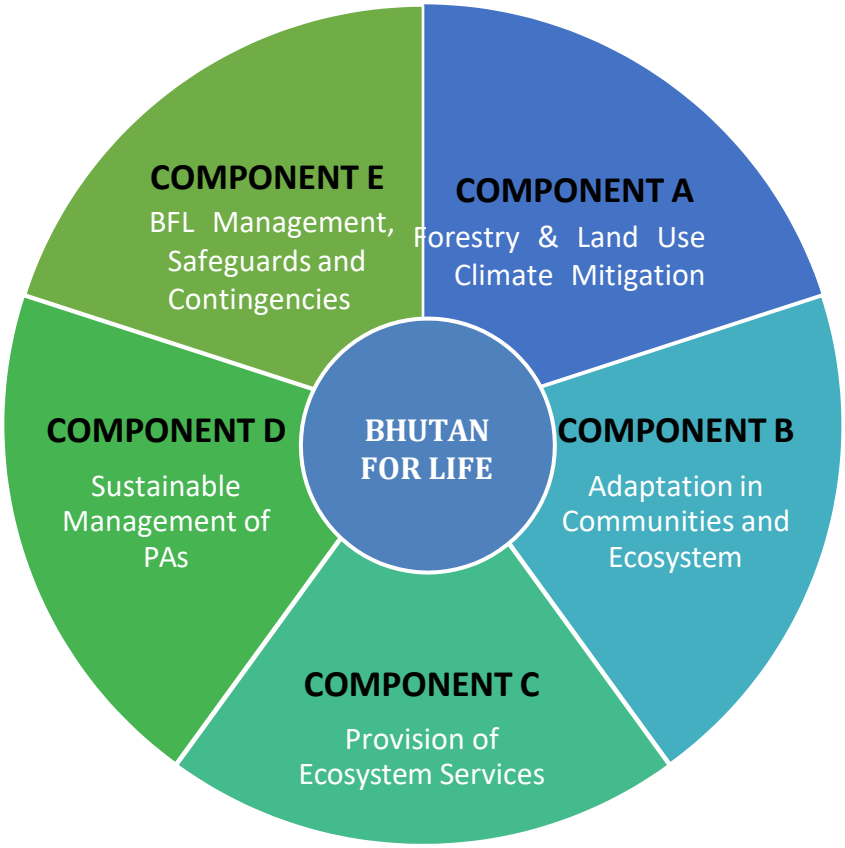


The graph above depicts the existing baseline funding in dark blue along the bottom and the projected costs in the green line along the top. The gap is then filled through a donor transition fund as depicted in red. While the donor fund is used to cover most of the gap in the beginning, government gradually increases its additional contribution depicted in light blue to cover the entire cost by end of the project period.

Investment in BFL to secure the future of Bhutan: Bhutan relies directly on its intact nature, forests and the numerous ecosystem services it provides, from clean drinking water to flood retention, water availability and ecotourism all of which are an important part of the climate mitigation and adaptation strategy of the country. If planned and managed correctly, Bhutan can harness the potential of its intact ecosystems to support sustainable, climate resilient development. The country's protected area system occupies 51% of the landmass and 40% of the forests, and climate-informed conservation will help to maintain their key environmental services while providing the flexibility for ecosystems, people, and wildlife to adapt to increasing climate change impacts. GCF strategic investment in BFL is an investment to maintain and improve the country baseline scenario: the unique case of a country that is already carbon emissions negative -- will help maintain and enhance the GHG emissions profile of the country, reducing climate change vulnerability of people and ecosystems, filling gaps in protected area management, and ensuring financial viability of the countries' PAS.

C.3. Project / Programme Description

BFL goals (outcomes), milestones (outputs), and activities were identified, refined and costed by a team of protected area managers, central government representatives, and conservation and finance experts from the Royal Government of Bhutan (RGoB) and WWF through a highly detailed, consultative and iterative process[8]. As a result, BFL is organized into five components, with four delivering programmatic results and one dealing with the management activities as presented in the figure below.



The rationale for BFL program of activities is rooted on the understanding that the integrity of Bhutan's protected areas, forests and biodiversity is critical to the country's climate change mitigation and adaptation goals. To these ends, Component A (as well as a large number of activities under Component D) focuses on forestry and land use climate mitigation, specifically working to maintain forest cover within the PAS to help Bhutan remain carbon negative. This is a stated priority of the government, and will help to fulfil international commitments to continue to be a net carbon sink. This will involve

(a) Maintaining forest quality and extent in 1.1 million hectares within the PA network, which will help secure the storage of the current stock of 206 million tons of carbon dioxide equivalent, and increase climate resilience through forest ecosystem conservation.

(b) BFL will strengthen monitoring systems to detect forest cover changes, combat the climate change increased risk of forest fires, promote rural alternative energy technologies such as biogas and household solar, and implement climate smart restoration of degraded land areas within the PAs. All these interventions will reduce deforestation risks and hence maintain or increase the current rate of forest growth inside PAs. These activities, over the BFL 14-year life, will increase carbon sequestration in PAS forests by 35.1 million tons of CO2eq.

[8] A list of the 80+ activities and costs per year can be found in section H and in Annex 5

Bhutan's protected areas are also key to the national climate change adaptation strategies, especially in providing ecosystem services, and Components B and C (as well as a large number of activities under Component D) support these strategies. Component B concentrates on community and ecosystem based adaptation to build resilience and reduce vulnerability to extreme climate events. This will specifically involve conducting community-based Climate Vulnerability and Capacity Assessments (CVCAs), developing community adaptation plans, and implementing adaptation solutions based on CVCA priorities. BFL will also promote continued use of traditional/indigenous systems related to conservation and climate resilience, and raise awareness and build capacity of local communities to implement climate-resilient sustainable resource management practices. Component C also focuses on climate change adaptation, with a concentration on Ecosystem Based adaptation activities. This will involve developing climate-smart species conservation plans that leads to management and restoration of key wildlife habitats based on climate information to reduce climate change impacts, strengthening enforcement to avoid illegal timber harvesting, restoring, and building local capacity to implement protection and management mechanisms for ten critical watersheds that will contribute towards building resilience against the variability of flow of freshwater resources important for life and agriculture for local communities. These activities, over the life of the project, will directly benefit 35,000 mostly vulnerable rural inhabitants living within the PA lands, and indirectly a further 110,000 living in adjacent buffer zones. Secondary benefits will also accrue to populations living downstream of the project area within Bhutan and beyond.

Component D focuses on strengthening the organizational, institutional and resource capacity of Bhutan's PAs, and hence is instrumental in delivering on all other mitigation, adaptation and ecosystem services goals. In addition to activities already mentioned under Components A, B and C, Component D will support the development of climate-smart PA and BC management plans, and will significantly bust staffing resources and capacity in Bhutan's of PAs. Component D will also help the Government of Bhutan to explore develop and implement new sources of financing for Bhutan's PAS, changing the unsustainable current practice of small scale, piecemeal, individual PA financing toward a country wide self-sustaining financing system for the entire biological complex of the country and the suite of ecosystem services – including climate benefits – that it provides.

As described in more detail below, BFL five components encompass five goals (or outcomes), 16 milestones (or outputs) and over 80 detailed activities. The following points provide a high level summary of how the activities will contribute to the milestones and goals. Please notice that:

- A number of activities, such as reforestation of degraded areas, are mostly single purpose, and are linked to only one milestone, goal and component. In the case of reforestation of degraded areas, this activity is included in milestone 2 in the mitigation Component A, and is budgeted under that milestone and component.
- Many other activities, such as improved patrolling of PAs, are multipurpose and help deliver on many milestones, goals and components. However, for operational simplicity, each activity is budgeted under only one milestone and component. This is why most multipurpose activities in BFL appear under component D, "PAS Sustainable Management ".
- The funding requested from the GCF will contribute to financing activities in all five components and all five goals, but not all milestones and activities (only those relating to climate change objectives). All milestones and major activities are listed in the description of the components below, whether or not funding is requested from the GCF to cover the cost. The detailed financing structure by milestone, activity and year is available in Annex 5.

In the rest of this section, we discuss each component, goal and milestone, and list the main activities planned to achieve each milestone.

A: MITIGATION COMPONENT: Increasing forestry and land use climate mitigation

Encompassing 41% of the country's forests, Bhutan's Protected Areas System (PAS) will be, by necessity, a centerpiece of the country's REDD+ strategy. The design of BFL's forest mitigation component has been discussed with Bhutan's REDD+ program, a task facilitated by the fact that both initiatives share the same executing entity, Bhutan's Ministry of Agriculture and Forests (MoAF)is currently implementing a 2014-2018 REDD+ readiness program, supported by a grant from the World Bank's Forest Carbon Partnership Facility, which will result, between 2018-2020, in the production of the following:

- National REDD+ Strategy and Action Plan
- National Forest Monitoring System
- National Forest Reference Level (RL) and/or Forest Emission Reference Level (FREL); and
- Associated Safeguards Information Systems

Once the National REDD+ Strategy and Action Plan are available, BFL will adopt the National RL and FREL, and will make use of the national forest monitoring system to track BFL forest mitigation progress. Until then, advancing the forest-based mitigation activities of BFL is fully in line with the recommendations of a recent UNDP/GEF evaluation of Bhutan's REDD+ program that encourages the country to undertake REDD+ pilot and demonstration projects, and notes in particular that "no pilot has been yet geared towards the "+" of REDD+"[9] conserving existing carbon stocks in a landscape approach.

GOAL I : Forest and vegetative cover within the Protected Area System help Bhutan remain carbon neutral

Achievement of this goal starts by conducting regular biodiversity inventory surveys, and the National Forestry Inventory. These assessments will help strengthen and update land cover mapping and information management and monitoring systems to detect forest cover change, impacts of climate change, and ecological responses of forests and other systems to those impacts. BFL will take advantage of the ADVANCE[10] partnership between WWF, Columbia University and NASA to help the country develop national climate change scenarios for various sectors, including the forestry sector.

The results from these assessments will inform the development of five-year plans for sustainable and climate-resilient forest management practices (e.g. community forest management, rural timber supplies, non-wood forest products, grazing) among communities living within the protected area network. Based on the assessments and plans, sustainable and climate-resilient forest management practices (including training local communities on natural resource management) will be implemented in the PAS. In addition, degraded land areas identified in the assessments willbe field-truthed, and climate-smart restoration in these implemented land areas.

This goal will also promote rural alternative energy technologies as a strategy to reduce both forest degradation and carbon emissions from firewood collection, while significantly improving quality of life for communities, especially women living inside the protected areas. This work will begin with the prioritization of sites, and identifying and installing appropriate rural alternative energy technologies (e.g. biogas, solar) in 10% of the households within the PAS. To strengthen relations between PAS staff and local communities, the GCF project also will partially fund the training of PAS staff on community based sustainable forest management (Component D).

As a result of these activities BFL will:

(a) Maintain forest quality and extent in 1.1 million hectares within the PA network, which will help secure the storage of the current stock of 206 million tons of carbon dioxide equivalent, and increase climate resilience through forest ecosystem conservation.

[9] See Va2n Noord (June 2016)

[10] ADVANCE is a partnership between WWF and the Columbia University Center for Climate Systems Research (CCSR) at The Earth Institute. ADVANCE facilitates adaptation by providing new ways of generating and integrating climate risk information into conservation and development planning, policies and practice.

(b) BFL will strengthen monitoring systems to detect forest cover changes, combat the climate change increased risk of forest fires, promote rural alternative energy technologies such as biogas and household solar, and implement climate smart restoration of degraded land areas within the PAs. All these interventions will reduce deforestation risks and hence maintain or increase the current rate of forest growth inside PAs, with these activities, over BFL's 14-year life, increasing carbon sequestration in PAS forest by 35.1 million tons of CO2eq.

MILESTONES

1. From Year 2 onwards, forest quality and extent (at 1.1 million hectares) maintained within the PA network, thereby securing the storage of 240 million tons of carbon dioxide equivalent, and increasing climate resilience through forest ecosystem conservation.
2. By Year 4, degraded lands within the PA network are brought under climate-smart reforestation mechanisms to enhance the carbon stock (above and below ground) and increase climate resiliency

MAJOR ACTIVITIES

- Strengthen and update information management and monitoring systems to detect forest cover changes, and ecological responses of forests and other systems to impacts of climate change.
- Promote rural alternative energy technologies such as biogas and household solar for communities living within PAs/Biological Corridors.
- Implement climate smart restoration of degraded land areas within the protected areas system.
- Other BFL activities (budgeted under the PAS Sustainable Management component) that will strongly contribute to this component include physical demarcation of PAS borders, and the provision of staff, infrastructure, vehicles and equipment to effectively patrol the PAS, prevent illegal logging and combat forest fires.[11]

B: ADAPTATION COMPONENT I: Integrated adaptation in communities and ecosystems to improve natural resource management for livelihoods and climate resilience

This component focuses on harnessing climate, hydrological, and natural resources information to design and implement climate change resilience and adaptation measures in Bhutan's PAS. This component will work to benefit nature and the livelihood of the population living both inside and in the vicinity of the PAs. This also includes building ecotourism facilities inside the PAs and training local populations to create new income generating opportunities related to ecotourism in PAs to diversify livelihoods and build community resilience.

GOAL II: Socio-economic wellbeing of communities in and in the vicinity of the PA system enhanced by climate informed natural resources management.

Currently there is some information on ongoing impacts and future risks of climate change, but this information is of regional Himalayan scale. Little or no information is available at the country or local scale12. Moreover the little information available is becoming rapidly out of date as continually increasing temperatures and changing weather patterns lead to entirely unforeseen impacts. Bhutan also lacks sufficient weather stations to monitor and understand the substantial local variations over short distances. Increasing community disaster and climate resilience therefore must start with conducting community-based climate vulnerability and capacity assessments using a gender and social inclusion lens, and explicitly assessing reliance on surrounding ecosystem services. The assessments will help better understand the vulnerabilities, local responses to climate change impacts, and the capacity of local communities, especially women, poor and vulnerable groups to undertake such responses. Local knowledge will be complemented by improved local climate information through the installation of weather stations in strategic locations

[11] Some activities, particularly those related to information gathering and analysis, and to improved management of PAs contribute to many deliverables, hence they are mentioned more than once in this project description. Still, for project costing purpose and to facilitate the design implementation plans each activity is allocated only to one component and milestone in the costing in Annex 5.
[12] See Section E.4.1. for further discussion of climate change impacts in Bhutan

according to guidance from climate scientists from Columbia University and NASA as part of the ADVANCE will also be utilized to develop climate change scenarios and forecast climate change impacts using the best available climate data and information.

With this information and the results of community based climate vulnerability and capacity assessments, climate adaptation plans will be developed for all vulnerable communities living within the protected area network. An assessment to identify and prioritize critical watersheds will also be conducted. Watershed management plans for the critical watersheds will be prepared to address identified local impacts of increasing sedimentation and flow variability, and will identify key interventions and programs, and build the capacity of local communities to execute the programs. The interventions will include activities such as revival and promotion of traditional/indigenous natural resource management systems, in conjunction with latest climate science, to build climate resilience in communities and ecosystems to identified changes; promotion of ecosystem-based adaptation for farming and grazing ie, using nature to help communities adapt to changes impacting yields, and climate-smart organic agriculture approaches and technologies technologies that explicitly account for the impacts of climate change identified in the above assessments and plans; improved stormwater management to address increasingly variable and extreme flows and other impacts identified in VAs; and disaster risk reduction, preparedness and response measures to address GLOF and other flood and landslide risks.

The involvement of local communities in planning and decision-making regarding protected areas management will be promoted, and conservation and climate change adaptation awareness raising and education programs will be conducted to ensure that all communities living within the protected area system value, support, and engage in conservation initiatives and understand the benefits of climate resilience. Local youths will be trained and engaged as citizen scientists to enhance climate change data collection to further address information gaps, provide employment opportunities, and foster support for conservation. These activities will improve local community participation in natural resource management practices, ensure the continued flow of ecosystem goods and services, and contribute to enhancing community and ecosystem resilience to climate change.

BFL will work to provide access to nature-based employment and income-generating opportunities with special emphasis given to women, youth, poor and disadvantaged groups. This will start with developing an ecotourism strategy (updated every five years), recommending policies to promote nature-based tourism and enterprises in the protected areas, and generating buy-in from tour operators. As part of that strategy, ecotourism and nature-based business models will be created for all protected areas based on sound market assessments, projected conservation gains, climate-smart planning (developing plans that account for existing impacts and future risks of climate change, identified through the ADVANCE partnership and local vulnerability assessments), and multi-stakeholder engagement. The feasibility of joint ventures will be assessed, and guidelines for their establishment developed. Equipment and production inputs will be provided, as needed, to develop ecotourism enterprises, and build appropriate ecotourism infrastructure (e.g. trails, facilities). Commercial viability and sustainability assessments will be conducted for non-wood forest products (NWFPs) within the protected area system, and NWFP sustainable harvesting operational plans for communities (including benefit sharing) will be developed to build community resilience to climate change impacts through income and livelihoods diversification and enhancement. The capacity of local communities, with special emphasis to women, youth, poor and disadvantaged groups will be enhanced in ecotourism services (hospitality, customer service, guides, sanitation); entrepreneurship, marketing, and financial and management skills; and sustainable harvesting, marketing and local processing of non-wood forest products. These activities will lead to the establishment of ten ecotourism enterprises (in partnership with the private sector and local communities), thirty nature-based local enterprises, and sustainable harvesting and local processing of commercially viable NWFPs. This will result in increased access to nature-based employment and income-generating opportunities for 80% of all households within protected areas, and will improve livelihoods, increase support for conservation, and enhance resilience to climate change by providing alternative sources of income.

Another important strategy, which is integral to BFL but not funded by GCF, is to improve the socio-economic well-being of local communities by reducing human-wildlife conflict (HWC) in and around protected areas through the adoption of appropriate policies, technologies and systems. Mitigating HWC starts with identifying HWC hotspots, causes, and the effectiveness of various interventions, using that information to update the five-year HWC Mitigation

Strategy, and proposing amendments to relevant policies. The implementation of the HWC Mitigation Strategy comes next, and includes building capacity and providing equipment to community organizations, installing cost-effective and innovative mitigation mechanisms (e.g. alternative crops, habitat enrichment, biological barriers, appropriate physical barriers), and strengthening and expanding community-based crop and livestock insurance schemes. These interventions will reduce and/or compensate for HWC, decrease the losses to communities from HWC (increasing their welfare), and increase local community support for conservation activities. Ultimately, 80% of the 7,000 households within protected areas will benefit from reduced HWC as a result of the adoption of appropriate policies, technologies and systems.

MILESTONES

3. (Partially funded by GCF) By Year 8, all communities in PAs value, support, and engage in conservation, including waste management and climate change adaptation
4. From Year 7 onwards, all communities living within PAs use traditional knowledge, best available science and technologies to increase their climate and disaster resilience
5. (Not funded by GCF) By Year 4, 80% of all households within PAs benefit from reduced human wildlife conflict as a result of adoption of appropriate policies, technologies and systems
6. By Year 9, 80% of all households within PAs have increased access to nature-based employment and income-generating opportunities including ecotourism and sustainable harvesting of NWFPs, enhancing their resilience to climate change

MAJOR ACTIVITIES

- Promote ecotourism, sustainable harvesting, local processing of select commercially viable NWFPs, and nature based local enterprises to enhance community resilience to climate change impacts through alternative income generation
- Conduct community-based Climate Vulnerability and Capacity Assessments (CVCAs), develop community adaptation plans, and implement ecosystem-based adaptation and climate-smart solutions based on CVCA results and plan priorities
- Document, revive where necessary, and promote continued use of traditional/indigenous natural resource management and farming systems to improve conservation outcomes and build climate resilience
- Raise awareness and build capacity of local communities to implement climate-resilient sustainable resource management practices, community-based climate adaptation plans, and to become citizen scientists
- (Not funded by GCF) Reduce human wildlife conflict in and around protected areas through adoption of appropriate policies, technologies and systems to enhance community resilience

C: ADAPTATION COMPONENT II: Climate-smart conservation to enhance provision of ecosystem services

This component focuses on harnessing climate, natural resources and biological information to design and implement ecosystem based adaptation management of Bhutan's PAs. This component will work to secure wildlife and habitat, and to reduce human wildlife conflict in the changing climate, using assessments of climate change impacts and risks to biodiversity and ecosystem services in and around protected areas.

GOAL III: Maintain stable and thriving populations of key species contributing toward national and global biodiversity goals. Maintain habitat and ecosystem diversity and contiguity. PAS provides sustained ecosystem services for socioeconomic and ecological wellbeing.

Maintaining habitat and ecosystem diversity, as well as forest contiguity, will start with an assessment to understand the rate and extent of habitat change through fragmentation and degradation (for both terrestrial and aquatic ecosystems) due to climate change and other anthropogenic impacts. Based on this assessment and other studies, experts will designate high biodiversity habitats, degraded lands and climate refugia (habitats likely to persist in the

face of increasing temperatures and changing weather patterns). The studies will also provide critical information for the revision of biological corridors (BCs) that link protected areas so as to ensure functionality under different future scenarios of climate change impacts, including changing migration patterns and shifting habitats and potential increases in human-wildlife conflict. The needs of terrestrial, riparian and aquatic biodiversity, particularly for connectivity, will be considered in these studies and in planning BCs.

Conservation practitioners need to understand the impacts of climate change on species and their habitats to develop climate-smart conservation strategies and plans. Such strategies and plans explicitly assess and incorporate climate change risks and impacts into planning and implementation activities for particular species. To increase government capacity to collect and analyze the necessary climate and natural resource information, BFL will support the installation and operation of weather monitoring equipment in all PAs and BCs in consultation with climate scientists, installation of natural resource monitoring equipment (Component D), and in collaboration with Columbia University's ADVANCE program will develop capacity to forecast climate change impacts understand potential key thresholds for biodiversity and ecosystem services and plan for likely future scenarios.

To protect species against threats from poaching and other illegal activities (interventions that are part of BFL, but only partially funded by GCF), protected area staff will be provided with the appropriate skills and equipment to conduct effective law enforcement. This enforcement includes SMART13 patrolling, crime detection, anti-poaching operations, and crime scene investigation. Improved law enforcement in the protected areas will limit illegal activities, such as illegal logging and extraction of forest resources, and directly contribute to both the mitigation and adaptation goals of BFL.

For the PAS to provide sustained water-related ecosystem services for socioeconomic and ecological well-being, the first step will be to conduct the necessary hydrological, climate, biological, sociocultural, and economic assessments and multi-stakeholder consultations regarding Bhutan's rivers. These assessments and consultations will evaluate freshwater species distribution, migratory paths of freshwater fish, riverine habitats, specific effects of climate change on flow patterns (variability and extremes), and social and cultural values associated with river systems. Based on this information, the RGoB will designate at least one high-conservation, economic and culturally valued stretch of river linked to a protected area to be maintained as free-flowing, and will effectively manage that stretch for conservation and climate resilience through an integrated watershed management approach addressing identified impacts like increasing flow variability, erosion and sedimentation, and extremes. The government will also identify and prioritize ten watersheds within protected areas critical for drinking water and irrigation, utilizing the national river basin and climate change assessments and other tools, which focus on quality, quantity, and timing of flows. After these watersheds are identified, experts will design and evaluate protection and management mechanisms for conservation and climate change adaptation, which will then be documented in watershed management plans. The capacity of local individuals and organizations will be built so they can implement these management plans. Subsequently, a foundation for payment for ecosystem services (PES) schemes (e.g. park entry fees, water use fees) will be established in selected protected areas.

Protected area staff will also undertake habitat management activities (informed by climate information generated by the ADVANCE partnership, local CVCAs, and additional studies, including those cited in section E.4 outlining adaptation options for terrestrial ecosystems) to protect wildlife. This will include invasive species inventory and control; restoration of grasslands and alpine meadows; restoration of riparian areas, wetlands and Ramsar Sites (waterholes, enrichment planting); and provision of training and equipment for protected area staff to work with local communities to prevent, monitor and respond to forest fires. In addition (included in BFL, but not funded by GCF), experts will develop green and climate-smart design and construction principles for infrastructure in and around protected areas. These principles will be applied to new construction, helping to limit the impacts of infrastructure on key ecosystem services.

[13] SMART (Spatial Monitoring and Reporting Tool) is a suite of best practices and data collection and analysis tools that help protected area and wildlife managers better monitor, evaluate and adaptively manage patrolling activities.

Through the GCF project, the government will incorporate valuation of key ecosystem services provided by the protected area network, and salient climate change risks and mitigation/adaptation activities into Bhutan's National Five Year Plans. This will start with modeling climate change scenarios and impacts on Bhutan's biodiversity, freshwater resources, and economy to put a value on key ecosystem services now and in the future and to support scenario planning. The RGoB will incorporate findings by including relevant activities for the Ministry of Agriculture and Forests (MoAF) and other government agencies within the Five Year Plans adapted to these scenarios. Awareness and capacity of government, academia and research institutions will be built. These activities will lead to improvements in watershed conditions for the free-flowing stretch of river and the ten critical catchments, and ultimately support climate resilience, wildlife, and socioeconomic development.

MILESTONES

7. (Partially funded by GCF) By Year 6, populations of tigers and snow leopards, two flagship species that represent major ecosystems, are increased or stable (tigers increased by at least 20% over 2015 levels, and snow leopards stable at 2016 levels)
8. (Not funded by GCF) By Year 6, information on the conservation status of 10 other high-profile, lesser known, endangered or endemic flora and fauna species established, and five climate-smart species conservation plans developed (in addition to those for tigers and snow leopards)
9. (Partially funded by GCF) By Year 2, Zero Poaching Framework and SMART/effective patrolling instituted in all PAs/BCs to prevent, combat, and monitor poaching, wildlife trade, and other illegal activities
10. (Partially funded by GCF) By Year 6, key high-biodiversity and climate resilience value habitats (and areas that connect them) are under improved management
11. By Year 6, at least one high conservation, economically and culturally valued stretch of river linked to a PA is designated as free-flowing and effectively managed to continue to provide important ecosystem services for conservation and climate-resilience of local communities
12. By Year 7, watershed conditions in ten critical catchments within the protected area system improved for climate resilience, wildlife and socio-economic development
13. By Year 7, National Five Year Plans and all PA management plans incorporate natural capital valuation, key ecosystem services provided by PAs/BCs, and salient climate change risks and mitigation/adaptation strategies

MAJOR ACTIVITIES

- (Partially funded by GCF) Develop climate-smart species conservation plans, accounting for direct and indirect impacts of climate change
- Conduct mapping and analysis to track the rate and extent of habitat change and loss due to climate change and other anthropogenic causes, assess functionality of biological corridors (including their future feasibility under climate change scenarios), compile inventory of invasive species in PAs/BCs, and designate high biodiversity habitats, degraded lands and climate refugia
- (Partially funded by GCF) Implement SMART patrolling in all PAs/BCs, and strengthen poaching and illegal wildlife trade enforcement agencies, inter-agency cooperation, informant networks, and bilateral cooperation
- Implement restoration of lowland grasslands, alpine meadows, wetlands, riparian areas, floodplains and other key wildlife habitats based on climate information to reduce climate change impacts, provide habitat for wildlife and limit climate change impacts on human well-being and infrastructure
- Conduct training and provide equipment to monitor and respond to forest fires
- Designate a high conservation, economic and culturally valued stretch of river as free flowing, and build institutional and local capacity to manage the stretch to reduce climate change impacts and increase ecological and downstream community resilience
- Build local capacity to implement protection and management mechanisms for ten critical watersheds inside protected areas that will provide the greatest conservation, socio-economic, and climate resilience benefits
- Enhance knowledge on climate change and impacts on various sectors based on climate change scenario modelling and valuation of key ecosystem services, and build awareness and capacity of the government, academia, and research institutions to use the tools and incorporate findings into relevant plans and policies

- (Not funded by GCF) Develop green and climate-resilient design and construction principles (e.g. those that respond to increasing extreme hazards such as floods and extreme storms), and apply these principles to all infrastructure in and around PAs

D: SUSTAINABLE MANAGEMENT OF PAs COMPONENT

The effective management of the PAS is required to deliver on all BFL goals, so several of the activities listed below have been mentioned in relation to the previous mitigation or adaptation components. For implementation purposes, it is important to group these activities under the Sustainable Management of PAS Component, as they are the backbone of the day to day operations of each PA. This component also includes activities to help the RGoB develop new sources of financing for Bhutan's PAS, which will help to ensure the long-term sustainability of BFL achievements.

GOAL IV: Organizational, institutional and resource capacity strengthened for effective management of PAS. Support the Government of Bhutan to develop new sources of financing for Bhutan's PAS.

Achieving effective management by the government, communities and partners of the PAS requires strengthening organizational, institutional and resource capacity. This starts with conducting a biodiversity inventory and socioeconomic surveys of conditions within protected areas and biological corridors every five years, and collecting climate data from new weather stations and natural resource monitoring equipment. Based on that information, and synching with Bhutan's National Five Year Plan cycle, climate-smart management plans (based on assessments of climate change impacts and risks, including the ADVANCE partnership and local CVCAs, and following the guidelines of the adaptation options for terrestrial ecosystems outlined in Section E.4) for each protected area and the biological corridors will be developed. These management plans will contain detailed information about area-specific priorities and interventions that support activities in Components A, B and C (including SMART patrolling, increasing conservation and climate awareness, engagement with local communities, generating local employment opportunities in the PAS, promoting traditional conservation knowledge, reforestation, habitat rehabilitation, river and watershed protection, and combatting forest fires). Protected area and biological corridor effectiveness will be evaluated using the Bhutan METT+ methodology every five years (not funded by GCF). Based on results of the surveys (included in BFL but not funded by GCF), participatory zoning and revisions will be conducted every ten years for each protected area and biological corridor. All areas will be physically demarcated, and ongoing maintenance will be provided to fix demarcation pillars (included in BFL but not funded by GCF).

To ensure appropriate and sufficient capacity to execute conservation activities, every five years the competency-based human resource and training needs will be identified (partially funded by GCF), and the protected areas network's staffing plan and training sessions updated. The necessary staff will be hired (paid for by RGoB) and trained in accordance with the staffing plan. BFL (partially funded by GCF) will ensure that the necessary vehicles, field and office equipment are available and, maintained. BFL (not funded by GCF) will also ensure that essential infrastructure (e.g. protected area, headquarters buildings, range office compounds, staff quarters, guard posts, guest houses, visitor information centers) will be constructed in accordance with an infrastructure development plan.

To ensure long-term financial sustainability of the PAS, BFL will explore and develop new sources of income that may include payments for ecosystem services, park entry tourism fees and REDD+ payments including ITMOs.

MILESTONES

14. (Partially funded by GCF) By Year 2, the PA network has climate-smart management plans and a system to track management effectiveness, and by Year 6 the PA network is clearly demarcated
15. (Partially funded by GCF) By Year 5, PAs/BCs are equipped with adequate and competent staff, and by Year 10 all PAs/BCs are equipped with essential equipment and infrastructure
16. By Year 8, new sources of long-term sustainable financing for Bhutan's PAS have been developed, approved by the RGoB, implemented, and are producing funding that is flowing to the PAS

MAJOR ACTIVITIES • (Not funded by GCF) Carry out participatory zoning and physically demarcate all PAs/BCs • Develop climate-smart PA and BC management plans, synching with National Five Year Plan cycles • (Not funded by GCF) Strengthen existing information management systems, and evaluate PA/BC management effectiveness using Bhutan Management Effectiveness Tracking Tool (Bhutan METT+) approach • (Partially funded by GCF) Build capacity of the PAS staff for effective protected areas management, research (including climate change and its impacts), and biodiversity monitoring • Development, lobbying for, and implementation of new long-term sustainable financing mechanisms • (Partially funded by GCF) Provision of staff, infrastructure, vehicles and equipment to effectively patrol the PAS and prevent illegal deforestation

E: BFL MANAGEMENT, SAFEGUARDS AND CONTINGENCIES COMPONENT

This component groups two major activities and a contingency fund as follows,

- **Environmental and social safeguards and gender mainstreaming activities:** this subcomponent includes all the activities and costs related to the implementation of BFL Environmental and social management plan and the implementation of the Gender mainstreaming action plan (for more details on these activities please refer to Annexes 8 and 9)
- **Project management** that includes funding all the institutional arrangements and activities necessary for the effective implementation of BFL For example it includes putting in place and operating the BFL coordination unit at the EE, the Ministry of Agriculture and Forests, as well as putting in place and operating the Transition Fund. Other activities under Project management include communication, consultation and transparency activities, as well as the due diligence, monitoring, reporting and evaluation activities required by the BFL program of work in accordance with EE, the AE and BFL funders requirements.
- **Contingency fund for the whole BFL:** This component is contingency budget to address unforeseen programmatic or financial challenges of all BFL components during the 14 years of BFL implementation.

GOAL V: Ensure the efficient execution of BFL.

ACTIVITIES

Under Project Management will include:

(a) putting in place the project coordination unit (Ministry of Agriculture and Forests), staffing it, staff travel, and undertaking and paying for workshops, events, utilities, office running costs, Office equipment and vehicles
(b) Putting in place the BFL Transition Fund, including a Secretariat in Bhutan, office set up, staffing it, staff travel, and undertaking and paying for workshops, events, utilities, office running costs, Office equipment and vehicles
(c) Monitoring reporting and evaluation are key activities under project management: information management systems for data collection and standardized reporting will be put in place and periodically strengthened. BFL project execution will be monitored annually, and achievement of milestones (outputs) and goals (outcomes) assessed regularly. Every five years, protected area and biological corridor effectiveness will be evaluated using the Bhutan METT+ approach, and lessons learned from monitoring will be incorporated into updated PA management plans as part of adaptive management.
(d) Final GCF funding for BFL evaluation in year 10
(e) Project external audits

Note: BFL Project management neither includes activities nor pay for the costs of activities that correspond to the project management performed by the Accredited Entity.

(For more detail on activities under BFL Project Management please see Annexes 5b)

Under Environmental and social safeguards and gender mainstreaming activities will include

(a) All required capacity building, consultations, monitoring, reporting and conflict resolution as per the ESSMP (For more detail on activities please see Annexes 8)
(b) All required capacity building and consultations, as per the Gender Mainstreaming Action Plan (For more detail on activities please see Annexes 9)

Under Contingency fund for the whole BFL: There are no new activities in this sub-component as it is just a contingency reserve budget to address unforeseen programmatic or financial challenges of any BFL components during the 14 years of BFL implementation.

C.4. Background Information on Project / Programme Sponsor (Executing Entity)

The overall Sponsor (Executing Entity) for BFL is Bhutan's Ministry of Agriculture and Forests, Department of Forest and Park Services. For some BFL activities, WWF Bhutan will also be an active collaborator at government request, so we also discuss WWF Bhutan's experience in this section.

The Ministry of Agriculture and Forests (MoAF) is the custodian of Bhutan's natural resources and rich biodiversity, with the vision to promote "Sustainable natural resources for equitable social and economic wellbeing of the Bhutanese people"[14]. The MoAF, often referred to as "The Renewable Natural Resources Sector", oversees the natural resource base and production activities of the majority of Bhutan's population, 69 percent of which is rural.

The 11th Five Year Plan (2013-2018), has placed the natural resources sector at the center of the development agenda and climate strategy, with the goals of achieving green economic growth, inclusive social development, poverty alleviation and climate smart sustainable management and utilization of natural resources. These goals will be pursued through the following objectives:

- Enhance food and nutrition security
- Enhance sustainable rural livelihoods
- Accelerate renewable natural resource (RNR) sector growth by 4 percent
- Promote sustainable management and utilization of natural resources

Under the MoAF, the Department of Forest and Park Services is responsible for the sustainable management of Bhutan's protected areas. The Department is headed by a Director, while each protected area is managed by a dedicated park manager with the rank of Chief Forestry Officer. The mandate and strategies of the Department of Forest and Park Services include:[15]

- Ensure the maintenance of a minimum of 60% of the country's geographical area under forest cover for all times to come, as mandated by the Constitution of Bhutan, through the development and implementation of forestry programs;
- Conserve, protect, and sustainably manage and utilize state forests, forest soil, water resources and biodiversity through insightful application of good science and science based management prescriptions;
- Contribute to the production of food, water, energy and other commodities by effectively coordinating between forestry, farming systems and other agencies;
- Facilitate the development of forest-based industries to contribute to local and national economies, and to create employment opportunities;
- Facilitate the empowerment of rural communities for stewardship and management of local forest resources and NWFPs for income generation and livelihood enhancement, and contribute to poverty reduction through the enactment of enabling policies, legislation, strategies, plans and programs;
- Ensure progressive forestry research provides relevant analyses on forest resources data to formulate effective policies, plans, strategies, rules and regulations for sustainable forest management;
- Ensure transparent and enhanced delivery of forestry services to the public through appropriate development of forestry administration, organization, capacity and facilities;
- Meet demand for urban recreation and education through creation and establishment of urban parks and gardens;
- Meet Bhutan's commitments to international and regional conventions, treaties and non-legally binding instruments through participation, facilitation and enactment of enabling policies, legislation, strategies, plans and programs;
- Maintain effective coordination with forestry related institutions within and outside the country to enhance institutional capacity, recruitment of forestry personnel, and the knowledge base of forestry techniques.

[14] See more information at the MoAF's website http://www.moaf.gov.bt/

[15] See more information at the Department of Forest and Park Services website http://www.dofps.gov.bt/

MoAF financial resources devoted to PAs and experience with International projects
During Bhutan's ongoing 11th development plan (2013-2018), the annual budget for protected areas, both operation and capital expenditure, is approximately US$ 3.4 M per year (which includes US$ 0.5M per year from the Bhutan Trust Fund for Environmental Conservation). While the country's budget covers staff and operation costs, most capital investment is supported by external partners. Apart from international financial assistance, Bhutan's Renewable Natural Resource (RNR) sector has also benefitted from the expertise, human resource development, technologies, equipment and other technical assistance resulting from Bhutan's cooperation with international agencies. In recent years, the MoAF has partnered with and executed projects financed by the International Fund for Agriculture Development (IFAD), European Union (EU), Japan, Government of India (GoI), Global Environment Facility (GEF), World Bank (WB), Helvetas Swiss Intercooperation, SDC, DANIDA, WWF, Bhutan Trust Fund for Environmental Conservation (BTFEC), FAO, UNDP, Australia, Austria, and United Nations Industrial Development Organization (UNIDO).

MoAF experience with Climate Change Projects
The Ministry of Agriculture and Forests has been advancing a climate change adaptation program to address these impacts since the start of the 11th Five-Year Plan in 2013. The Ministry developed a Sectoral Adaptation Plan of Action (SAPA) in 2013, initiating the mainstreaming of climate change across ministerial plans and programs. The SAPA was formulated to identify climate change threats and challenges within the sector through extensive consultation across sectors and agencies, and proposed realistic adaptation plans of action to overcome these threats and challenges. The SAPA was reviewed and revised in 2016, and is now working to: 1) Mainstream climate change risks, vulnerabilities and adaptation plans of action into the renewable natural resources sector plans and programs; 2) Identify climate change issues, vulnerabilities and adaptation plans of action; and 3) Mobilize resources for climate change adaptation programs.

The Ministry of Agriculture and Forests continues to lead on the implementation of programs and activities related to climate change adaptation and mitigation. Apart from implementing climate related plans and programs through five-year sectoral development plans, the Ministry is also currently implementing the climate change projects detailed below:

- **Renewable Natural Resource Climate Change Adaptation Programme (RNRCCAP).** The program is funded by the European Union (EU) through the Global Climate Change Alliance (GCCA) facility. The cost of the program is EURO 4.397 million, and aims to develop an adequate response to the effects of climate change in the renewable natural resources sector.

- **Commercial Agriculture and Resilient Livelihoods Enhancement Programme (CARLEP).** This project is funded by International Fund for Agricultural Development (IFAD) and is working to increase agricultural production and shift marketing approaches and climate resilient farming practices. The total program cost is USD 31.5 million, and is being implemented over seven years (2015 to 2022).

- **Rural Livelihoods and Climate Change Adaptation in the Himalayas.** The Rural Livelihoods and Climate Change Adaptation in the Himalayas (HIMALICA) initiative is financed by the EU and managed by the International Centre for Integrated Mountain Development (ICIMOD). The program supports vulnerable mountain communities in the Hindu Kush Himalayas in mitigating and adapting to climate and socioeconomic changes. The three-year project started in February 2015 and will run until February 2018. The Ministry is responsible for implementing the components of the project in Bhutan. The cost of the project is USD 500,000.

- **FCPF REDD+ Readiness.** The Royal Government of Bhutan has received a Grant from the Forest Carbon Partnership Facility (FCPF), World Bank in the amount of USD 3.8 million. The project will include the following components: 1) REDD+ Leadership development which include REDD+ Analysis &Policy Development; 2) REDD+ Information Infrastructure which include National Forest Monitoring System and Reference Scenario Formulation; 3) REDD+ Management which include monitoring and reporting.

In executing initiatives related to these collaborations, the MoAF and its sectoral departments have increased their technical capacity for on-the-ground delivery, as well as in implementing, monitoring and reporting in compliance with donor standards with respect to procurement, communications, and environmental, social and gender mainstreaming safeguards. Since 2005, the Policy and Planning Division of the MoAF has tracked and consolidated information on all MoAF internationally funded projects through reports. The most recent report is titled "A Profile of Donor Supported Projects in the Renewable Natural Resource (RNR) Sector 2015", which can be found here.

WWF-Bhutan
WWF started working in Bhutan in 1977 with capacity development of national conservation staff, and is Bhutan's longest standing conservation partner. Over the past 30 years, WWF-Bhutan has evolved into a dynamic organization with over 30 full time staff and an annual budget of US$ 2.5M–US$3 M. The work of WWF-Bhutan is backed by the global WWF network of which it is a part. The organization engages in conservation initiatives across the country focused on 1) Forests: 2) Wildlife; 4) Freshwater: and 4) Climate and Energy. The growth of WWF's activities in Bhutan has been in direct response to national and sub-regional conservation needs, and at the request of Government of Bhutan. The nation's strong political will, conducive conservation policies, and WWF's decades long partnership with the Royal Government of Bhutan has enabled WWF to contribute significantly to Bhutan's conservation efforts. WWF-Bhutan has also been able to utilize WWF's global network of 5,000 experts working in 100 countries to promote conservation and sustainable development. It was on this basis that WWF was asked to serve as the GCF implementing entity for this project.

C.5. Market Overview (if applicable)

N/A

C.6. Regulation, Taxation and Insurance (if applicable)

Regulations: All PAs that are part of this project are already in existence, and all the regulations and permits required for their management are already in place.

Taxes: Most of the activities will be executed by tax-exempt government agencies. WWF-Bhutan operations in Bhutan also have been granted tax-exempt status.

Foreign exchange regulations: Bhutan's currency, the Ngultrum, is pegged one to one to India's rupee. While exchanging foreign currencies into Ngultrum is straight forward, the reverse is highly regulated. In any case, BFL does not envisage converting Nglutrms into foreign currencies and, following international fiduciary standards, the project will maintain its international funds in a dollar denominated account, and balances in local currency will not exceed estimated quarterly expenditures.

Insurance: The Accredited Entity will sign agreement(s) with the Royal Government of Bhutan, following international development aid practices, indicating that it is the responsibility of the executing agency/agencies to ensure the safety of personnel and property, as they apply to the activities funded by this project.

C.7. Institutional / Implementation Arrangements

For the purposes of implementing the Project, the Accredited Entity will:

- Enter into a BFL Closing Agreement with the Gross National Happiness Commission and Ministry of Agriculture and Forests of the RGoB, on behalf of GCF and the BFL private donors;
- Approve the establishment of a BFL Project Coordination Unit (PCU) within the MoAF;
- Approve the establishment of a BFL transition fund as a new legal entity based on internationally accepted practice standards for conservation trust funds;
- Enter into a grant agreement with the BFL transition fund.

The BFL Closing Agreement will describe all of the terms and conditions for BFL over the 14-year period of the program, and will include all the conditions in the AMA and FAA between the GCF and WWF as they apply to subsidiary agreements. The BFL Conservation Plan, BFL Financial Model and BFL Operations Manual form parts of the BFL Closing Agreement. The BFL Operations Manual will describe the governance and operation of the BFL institutions and serve as a common set of rules governing the BFL program, including disbursement conditions based on agreed milestones and indicators.

The Ministry of Agriculture and Forest (MoAF) will be BFL Executing Entity (EE) and a BFL PCU will be established within the MoAF. The BFL PCU will be responsible for project planning, implementation, coordination, and monitoring and evaluation. Relevant national agencies and other entities will submit annual work plans, budgets and progress reports to the BFL PCU for review by the RGoB oversight bodies. A policy level BFL Project Steering Committee and a technical level BFL Strategic and Technical Committee that provides technical backstopping to the BFL PCU. These bodies will help to ensure coordination among RGoB ministries involved with BFL and are standard practice for project management in the RGoB.

All donor funding including GCF will be held in a BFL Transition Fund, with its Charter, Board of Trustees and Investment Management Committee. An independent legal review of the TF has been shared with the legal department of the GCF secretariat, and its operation and the flow of funds is discussed below and depicted in the subsequent flow charts.

- **BFL Transition Fund:** A BFL transition fund will be established as a new legal entity under the laws of Bhutan by Royal Ordinance issued by His Majesty the King of Bhutan, with Executive Orders to be issued for related institutional arrangements. The BFL transition fund will be exempt from taxes in Bhutan and will be treated as equivalent to a tax-exempt US charitable organization under Section 501(c) of the US Internal Revenue Code. The purpose of creating the transition fund is to ensure long-term management of donor funds over the life of the BFL program. The transition fund will ensure that funds are only disbursed if the BFL program is on track to meet its disbursement conditions.
- A transition fund **"Royal Charter"** will serve as the equivalent of a trust deed that legally creates the BFL transition fund and defines the fund's (1) purposes, (2) the composition of the Management Board, its powers and duties, and its rules for meetings and decision-making, as well as (3) basic rules and procedures for investment of the fund's assets, (4) a tax exemption for any income and gains from investing those assets, (5) requirements for audits and reporting, and (6) specifying what happens to the trust fund's remaining assets if it is dissolved. More detailed procedures for governance and operation of the transition fund will form part of the BFL Operations Manual.
- The transition fund will be governed by an independent **Board of Directors** that represents the BFL Participants (RGOB, donors, WWF) and may also include Trustees with experience and skills relevant to BFL. The transition fund Board will be majority non-governmental in order to ensure independent oversight of the BFL program. An

Investment Management Committee will advise the transition fund Board regarding investment of BFL assets. The transition fund Board will be supported by a small Secretariat led by an Executive Director.

- The transition fund Board of Trustees will periodically review the technical and financial performance of the BFL executing entity, and compliance with the BFL closing agreement. Upon confirmation of satisfactory performance and compliance (based upon agreed milestones and indicators in the Conservation Plan), the transition fund Board will approve the disbursement of funds (see table summarizing **Disbursement Conditions** below) to the RGoB for implementation per the agreed BFL conservation plan and financial model.

- Other oversight bodies will include: a **BFL Project Steering Committee** that will provide guidance regarding BFL's strategic direction at the policy level and review annual work plans and budget. A **BFL Strategic and Technical Committee** will provide technical backstopping to the project coordination unit including ensuring that the annual workplan and budget are in line with the BFL Conservation Plan and Financial Model. The BFL Strategic and Technical Committee will include technical experts from the key stakeholders who are conversant on the BFL Conservation Plan. Members of these bodies may include the Gross National Happiness Commission, Ministry of Agriculture and Forests (MoAF), Ministry of Finance (MoF), National Environment Commission, and BFL development partner organizations such as WWF.

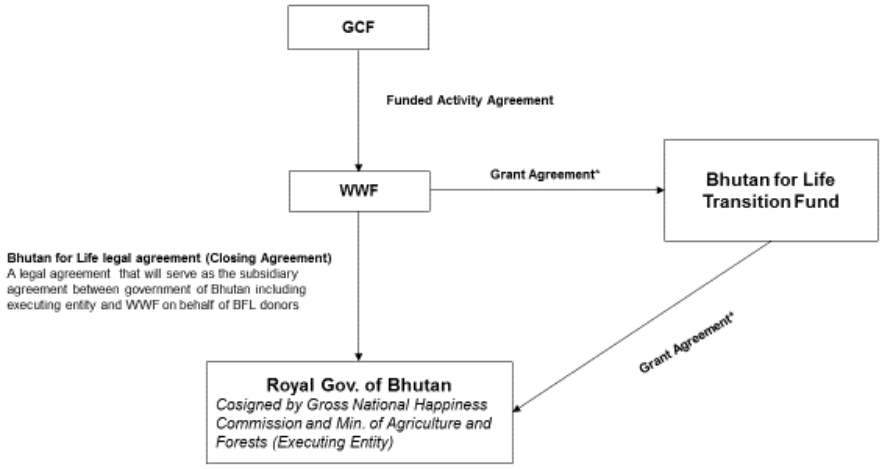
- A **BFL Operations Manual** will be finalized prior to closing and form part of the BFL closing agreement. The BFL Operations Manual will describe the governance and operation of the BFL institutions and serve as a common set of rules governing the BFL program, including disbursement conditions based on agreed milestones and indicators. Donor BFL funds will be managed through the establishment of: 1) a **BFL transition fund** that meets internationally accepted practice standards for conservation trust funds, and 2) a **BFL Project Coordination Unit (BFL PCU)** established within the Ministry of Agriculture and Forests (MoAF), which will be the project's Executing Entity. Other oversight bodies will include a policy level **BFL Project Steering Committee** that approves annual work plans and a technical level **BFL Strategic and Technical Committee** that provides technical backstopping to the BFL Project Coordination Unit.

Since the transition fund is an important part of the project finance for permanence approach, we propose that GCF funding be disbursed through the Accredited Entity to the Transition Fund on a bi-annual basis over the period of the GCF funding. Funds will be disbursed against evaluation of agreed BFL progress as per the below table

#	**BFL progress conditions for disbursement of GCF funding**
1	Annual monitoring and reporting on BFL Conservation Plan to ensure that: a. All Activities designated to occur in a given year (as specified in the plan) are implemented b. All Milestones and Indicator Targets relevant to a given year are achieved
2	No-net-loss of area under Protected Areas
3	RGOB budget allocation corresponding to a 20% real increase for the first year, and a 5.2% real increase for each subsequent year until the end of the Transition Fund period
4	RGoB ensures Bhutan Trust Fund for Environmental Conservation contributes at least 500,000 USD per year to support BFL activities for each year of 14 year transition fund period (this 500,000 USD is in addition to the RGOB budget increases specified in point (3) directly above.
5	Technical and financial reports submitted by each Protected Area
6	Each PA managing entity and central management meet their annual staffing goals as specified in agreed initial BFL staffing plan
7	Report of the activities and hectares of restored and reforested land

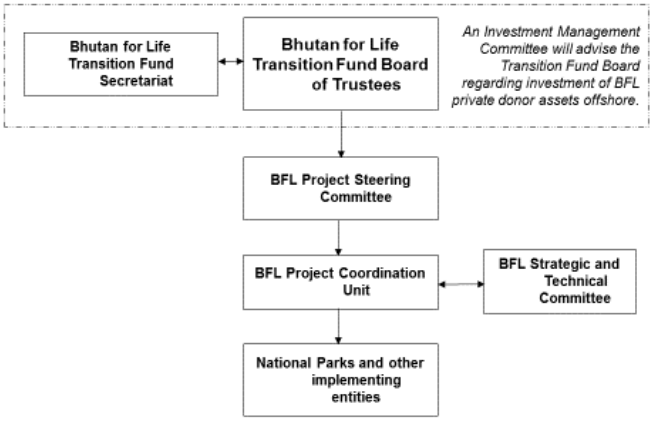
Once the GCF disburses the funding to the accredited agency, funds will be transferred to the BFL transition fund. Upon verification that all the above conditions have been met, the transition fund will disburse funding to the executive entity as per Bhutan regulations for the management of all foreign funding that requires (a) transferring the funds to the Gross National Happiness Commission (that also happens to be the country GCF DNA) that then disburses the funds to the Department of Public Accounts which releases funds to the executing agency, In case of BFL the major executing agency being the MoAF, based on the annual work plans and budgets submitted by the executing agencies and approval by the BFL transition fund Board. The below flowcharts depict this process

Bhutan for Life – Proposed Contractual Arrangements

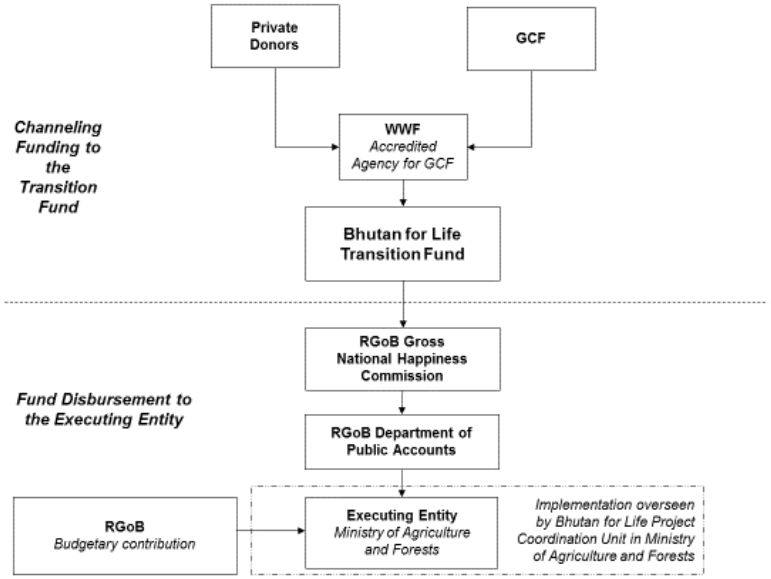


*Annual disbursement under the grant agreement are only made when the annual disbursement conditions for BFL are fulfilled

Bhutan for Life Implementation Arrangement



Bhutan for Life Funds Flow



More details on BFL institutional and implementation arrangements can be found in Annex 7: "Project Confirmation/Term Sheet"."

C.8. Timetable of Project/Programme Implementation

See Project timetable in Annex 12

D.1. Value Added for GCF Involvement

Worldwide, protected areas are public goods and part of the global commons, providing ecosystem services to local, national and international communities. Although entrance and other user fees are collected in many national parks, particularly in those that have high tourism potential, no country in the world has been able to manage its protected areas system as a financially self-sufficient endeavour, let alone turn a profit. In all cases protected area systems depend on public budgets and grant financing for most of their expenses. This is also the case in Bhutan, and GCF grant co-financing is critical to ensure the full funding of the Bhutan for Life project, even considering a range of other financing alternatives, including:

- **Alternative I: More government funding:** The Government of Bhutan is already extending to a maximum its own contribution to the project. A full 64% of BFL total costs (or 39% of the additional funding) will be provided from the RGoB public budget[16] (see table B.2 above). Moreover, the country has committed to pay 100% of the PAS annual recurring costs[17] by the end of the project life.

- **Alternative II: More grants from other sources**: Since early 2015, WWF has helped the RGoB in a worldwide campaign to raise grant funding for BFL from major foundations, environmental agencies and individual donors. We have achieved a target of $16.6 million that represents 14% of total BFL costs (or 23% of the additional funding), which is considered to be the limit of charitable contributions to BFL.

- **Alternative III: Loans**: Even highly concessional loans were not considered appropriate to finance BFL because, as stated above, Bhutan's PAs cannot repay loans given that managing a public PA is not an income generating activity, and because the country is already highly indebted. With a public debt to GDP ratio reaching 100% in recent years, the government is strongly opposed to increasing further its sovereign debt to finance environmental conservation.

For all these reasons, accessing GCF grant financing is critical to the implementation of BFL. Furthermore, (a) Bhutan is a small, landlocked, least developed country that qualifies for international grant funding, (b) the GCF grant would have a significant leverage ratio of 3.5dollars of co-financing for each dollar of GCF financing (or $ 1.7 dollars of co-financing for each dollar of GCF financing when considering only the additional financing), and (c) as discussed below (section E.2.1.), BFL is poised to become a model for enhancing climate and environmental benefits from other PAS around the world.

D.2. Exit Strategy

As opposed to many climate or development projects that are one shot initiatives with very uncertain continuity, the BFL approach is built around an explicit exit strategy. As explained elsewhere, the rationale of the BFL project is to provide a one-time transition fund to pay for the current gap in Bhutan's national funding of PAs. This is a 14-year, $43 million dollar gap, subject to the RGoB commitment to gradually increase its funding (starting in Year 1) until it takes up the full cost of sustainable and climate-wise management of the PAS by the end of BFL. To ensure this outcome, the RGoB and BFL stakeholders have agreed to a project design that includes:

- **Clear initial commitment to an exit strategy**: The exit strategy is part of the BFL project design and requires that all parties sign to it as part of the project negotiation. This agreement includes a MoU from the RGoB detailing its financial commitments to Bhutan's PAS during and after BFL (see Annex 4).

- **Front-loading the exit strategy**: The BFL financial model (see Annex 5) requires that, beginning the first year of BFL and every year thereafter, the RGoB increases its budgetary allocation to Bhutan's PAS. By

[16] In this document, the term 'RGoB public budget' includes funding from BTFEC as well.
[17] "Recurring costs" include operating costs, maintenance, and periodic replacement of vehicles and equipment. They exclude construction of or replacement of infrastructure.

BFL's last year, the country is almost fully paying for the sustainable management of its PAS and is ready to take full financial responsibility at the close of the project.

- **Helping the RGoB develop new sources of funding to manage the PAS.** BFL will collaborate with Bhutan's financial authorities to develop and put in place new sources of income for managing the PAS at international standards. Among others, BFL will look into the viability of:

    a. A fee or earmark on exports, which are expected to grow ten-fold in the next fifteen years, and to some extent will depend on the sustainable and climate-wise management of upper watersheds that are all inside Bhutan's protected areas.
    b. A fee or earmark on eco-tourism revenues, which are poised to grow significantly in the next ten years, as they are clearly related to international interest in the natural beauty of Bhutan. BFL should contribute to this growth, as the project includes investments in ecotourism infrastructure inside PAs, and providing capacity building for local populations to help them take advantage of new employment and income generating activities in the ecotourism sector.
    c. Initiating a park entry fee system for all parks in Bhutan. Currently it is free to enter national parks in Bhutan.
    d. As part of the national REDD+ Strategy currently in preparation, performance-based REDD+ payments, including ITMOs, for carbon sequestration in forests within or adjacent to the protected areas network.
    e. An earmark on a portion of a new fossil fuel tax that the RGoB is considering, as a way to price carbon emissions and raise revenues for climate related investments.

E.1. Impact Potential

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

E.1.1. Mitigation / adaptation impact potential

Mitigation impacts

BFL is designed to deliver major national and international mitigation impacts through improved management of land and forest areas, dissemination of renewable energy solutions among rural households and capacity building on sustainable, low carbon farming. Major mitigation impacts include:

1. **Mitigation through the long-term conservation of Bhutan's carbon sinks:** Through a host of activities to improve the management of Bhutan's protected areas (e.g. physical demarcation of PA borders, training and equipment for PA rangers, improved patrolling to combat illegal logging and illegal deforestation, and improved forest fire control), BFL will ensure that the current carbon stock in the PAS, estimated at approximately 206.2 million tons of CO_2eq, will be preserved in perpetuity. Note that this is not a claim of emission reductions or additional carbon sequestration, and BFL is not counting this in its mitigation figure of 35.1 million tons of CO2eq.

   Still we wanted to highlight this long-term conservation of Bhutan's carbon sinks as it makes part of the "... conservation, sustainable management of forests and enhancement of forest carbon stocks", all of which is part and parcel of REDD+ according to the UNFCCC, and has already triggered international financing for high forest-low deforestation countries like Bhutan[18]. (the information on sources and methods of measurement is provided below).

2. **Mitigation through natural growth of forests in PAs:** Different from other mature forests, Bhutan forests have been steadily growing since the 1990s, and this process has been well documented by local and international agency studies, as well as by independent academic studies[19] that related this natural forest growth to several drivers, including rural population migration to cities, warmer temperatures, and last but not least to effective protection of forests in protected areas. We expect this trend to continue with BFL investments, so that over the 14-year life of BFL, just by maintaining the annual forest growth of the last decades an additional 34.8 million tons of CO_2eq will be sequestered in PA forests as a result of protecting forests to allow for their natural growth. This outcome will be achieved by an array of BFL forest conservation activities, including combatting illegal logging, better controlling forest fires, disseminating climate-smart agriculture practices among local farmers, and providing efficient cook stoves to households living inside or in the vicinity of PAs (the information on sources and methods of measurement is provided below).

3. **Mitigation through reforestation of degraded forest and pastures:** Over the 14-year life of BFL, approximately 3,000 ha of deforested and/or degraded forests will be reforested, resulting in the additional sequestration of approximately 0.3 million tons of CO_2eq. The information on sources and methods of measurement is provided below.

4. **Mitigation through distribution of renewable energy solutions:** Solar panels, biogas and improved biomass stoves will be distributed to 10 % of the households living in PA. Through the 14 years' implementation of BFL this can result in emission avoided of approximately 0.1 million tons of CO_2eq. Still, to the extent that improved renewable energy solutions, will reduce deforestation we don't add this figure to BFL mitigation benefit, to avoid double-counting

See a more complete list of mitigation-related activities in sections C.3 – H and in Annex 5.

[18] See for or example Gutman P, and Aguilar-Amuchastegui, A (2012)

[19] See for example RGoB (2011) chapter 2; FAO (2015); van Noord (2016); Bruggeman et al (2016); Gilan H et al (2015); Ready C.s. et al (2016)

The question of BFL mitigation additionality in the short and long-term

Detailed estimations (see below) put BFL mitigation gains during its 14-year implementation period at 35.1 million tons of CO2eq (34.8 million tons of CO2eq from natural forest growth and 0.3 million tons of CO2eq from reforestation activities).

Because natural forest growth in PAs may continue, at least in the short term, without any major intervention, there might be questions about the mitigation additionality of BFL implementation. Leaving aside the moral of the world free-riding on a poor country's good environmental performance, the answer is in the long-term impact of failing to act now. While the threats to Bhutan's forests are low now, they are bound to grow in the near future propelled by increased demand for timber in urban areas, and the increasing incidences of illegal logging and forest fires (mainly in the southern Pas). Development is inevitable and large infrastructures including farm roads to connect remote villages to the country road network will also lead to increased pressure on forests. We have run several scenarios of what could happen to Bhutan's PA forest in a 14 year and 30-year horizon, with or without BFL, and what they show is that:

- In the short term --10 years or less – Bhutan forest may keep growing, even in the absence of BFL or a similar effort to improve the management of the country's PAs. So, in a 14-year horizon BFL mitigation additionality, could go from zero, to 28% to 86% of the BFL estimate of 34.8 MTCO2eq, (depending on different hypothesis of when forest deterioration accelerates its pace)

- On the other hand, in the long term --30 years or more-- there is no doubt that in absence of BFL or a similar effort to improve the management of the country's PAs, forest deterioration will be at work, so that by year 30 estimates of carbon loses in Bhutan PAs would amount to 140% to 320% of the BFL 14 year mitigation estimate of 34.8 MTCO2eq, That is, not only forests growth will stop, but, today's existing forest, would be shrinking.

With this gamut of figures available, the reason for preferring the 34.8 MTCO2eq as BFL 14-year mitigation target is that this is a facts-based figure that can be monitored on-the-ground and reported during BFL lifetime. All other figures, either depend on "counterfactual" scenarios or will only be available for on-the-ground monitoring years after the project ends.

Experience from many countries have shown that proactive conservation of resources is much cheaper than restoration therefore BFL provides a cheaper way of conserving the carbon stock of Bhutan and ensuring continuation of the current trend of forest increase and growth.

Adaptation impacts

In line with GCF's logic model and investment framework, BFL adaptation activities will reduce vulnerability and increase resilience of Bhutan's human population and natural environments, and will also increase opportunities for sustainable, low-carbon development in Bhutan. Overall, BFL adaptation result areas target (a) most vulnerable people and communities; (b) health and wellbeing, food and water security; and (c) ecosystem and ecosystem services. The adaptation measures include the following:

1. Direct improvement of community climate resilience inside PAs: Approximately 35,000 people living inside PAs, many of them among the poorest and most vulnerable groups in Bhutan's rural areas, will benefit from an array of adaptation and climate-smart conservation activities. These activities include: (a) improved information gathering and capacity building to address climate change impacts on agriculture and water resources; (b) biodiversity

conservation and restoration of crucial ecosystems; (c) climate resilient water basin management for climate resilience; (d) improved ecosystem services; (e) and new PA ecotourism infrastructure and nature based enterprises that will increase income and job opportunities in the area. A more complete list of activities is included in sections C.3 – H.1.2.c, and in Annex 5.

2. Direct improvement of community climate resilience in areas surrounding PAs (buffer zones): Approximately 110,000 people, living in rural areas in the proximity of PAs (less than 10 km outside PA borders), will benefit from an array of ecosystem-based adaptation activities. These activities include: (a) improved information gathering and capacity building to address climate change impacts in agriculture; (b) improved river basin management for climate resilience; (c) improved ecosystem services; (d) new income and job opportunities in ecotourism. A more complete list of activities is included in sections C.3 – H.1.2.c, and in Annex 5.

3. Direct improvements of ecosystem and ecosystem services: This is a cornerstone of BFL that will involve an array of activities to ensure the sustainability and resilience of ecosystem and ecosystem services in 51% of the country's territory. These activities include: (a) overhauling the infrastructure and human resources of Bhutan's protected areas; (b) numerous studies, policy development and training activities to improve understanding of impacts of climate change in various sectors, so as to factor climate change into the management of biodiversity in protected areas; and (c) improved control and monitoring activities and enhancement of infrastructure in PAs to expand and harness recreation and tourism potential. A more complete list of activities is included in sections C.3 – H.1.2.c, and in Annex 5.

5. **Indirect improvement of community climate resilience in Bhutan's rural areas at large:** Although difficult to quantify, a large number of people living in rural areas downstream of PAs (almost half of the country's population) will benefit indirectly from an array of BFL ecosystem-based adaptation activities inside PAs, but with impact well beyond PA borders, for example (a) improved information gathering and capacity building for addressing climate change impacts in natural resources management (b) improved river basin management for climate resilience; and (c) improved ecosystem services

See a more complete list of adaptation related activities sections C.3 – H and Annex 5.

E.1.2. Key impact potential indicator

GCF core indicators	*Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (Mitigation only)*	*Annual*	2.51 million tons of CO2eq
		14 Year Lifetime	35.1 million tons of CO2eq
	• *Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience);* • *Number of beneficiaries relative to total population, disaggregated by gender (adaptation only)*	*Total*	1. Approximately 35,000 people living in PAs (55% female)[20] will see major positive adaptation impacts 2. Approximately 110,000 people living in rural areas near PAs (55% female) will see significant positive adaptation impacts
		Percentage (%)	The above figures represent: 1 = 4% of the country's population 2 = 15% of the country's population

[20] Both the preponderance of matrilineal land tenure in Bhutan's rural areas, and a significant migration of male rural population to urban areas has resulted in a feminization of the country's rural areas.

Other relevant indicators	• BFL will result in the sustainable management of 51% of Bhutan's territory • BFL will permanently preserve the existing 1.2 million hectares of forest in the PAS that sequester approximately 206.2 million tons of CO_2eq • BFL will indirectly improve adaptation and ecosystem services flows to as many as 400,000 people (53% of the country's population) living in rural areas downstream of PAs • BFL will improve watershed conditions in 10 critical (ecologically, economically or culturally) catchments within the protected area network

Methodology to estimate mitigation impacts

As mentioned in section C.3 above, Bhutan is advancing the national REDD+ readiness program. This REDD+ readiness program will, by 2018 or 2019, deliver a tier 2 or tier 3 REDD+ baseline for the whole country and a monitoring and reporting system in compliance with UNFCCC guidelines. Once this framework is available, the BFL project will adopt it, re-estimate mitigation targets accordingly, and also adopt the country level monitoring verification and reporting standards.

In the meantime, all of Bhutan's official estimates of forest cover, forest cover changes and carbon stocks are based on tier 1 or tier 2 information from FAO FRA country reports (the most recent from 2015) and from forest cover studies conducted in Bhutan by the Ministry of Agriculture and Forests (the most recent of which is the Land Cover Mapping Project of the National Soil Service Center, which used high-resolution satellite imagery from 2007-2008 (ALOS) and considerable ground truthing). Based on these sources, estimates for the following mitigation impact figures were produced:

A. Estimates for mitigation impact 3 - Forests and carbon stock in in Bhutan's PAS (circa 2008-2010)

A Forest in PAS by type	B Hectares in PAS	C Cubic meters of wood (163 m^3 per ha)	D Wood Biomass Stock per m^3	E Total AG Biomass estimates m^3	F BG Biomass (Root to shoot ratio =0.372)	G Carbon content in MTC	H Tons of CO_2eq in PAS forests
Blue Pine	6,785.97	1,106,113	0.30	331,833.79	123,442.17	227,637.98	835,431.38
Broadleaved	551,692.42	89.925,864	0.49	44,063,673.59	16,391,686.57	30,227,680.08	110,935,585.89
Broadleaved with Conifer	20,153.48	3,285,017	0.45	1,478,257.76	549,911.89	1,014,084.82	3,721,691.30
Chir pine	14,292.21	2,329,630	0.39	908,555.79	337,982.75	623,269.27	2,287,398.23
Fir forest	152,720.89	24,893,505	0.40	9,957,402.03	3,704,153.55	6,830,777.79	25,068,954.49
Mixed Conifer	376,276.25	61,333,028	0.41	25,146,541.79	9,354,513.54	17,250,527.67	63,309,436.54
Total PAS	1,121,921.22	182,873,157		81,886,264.73	30,461,690.48	56,173,977.61	206,158,497.82
Total Bhutan	2,705,241.24						
% in PAS	41.47%						
Average tons of CO_2eq per ha							184

Legend:
Columns: C= B x 163 / E = C x D / F = E x 0.372 / G = half of (E + F) / H = G x 3.67

Sources:
Columns A and B : Bhutan's Minister of Agriculture and Forest, based on 2007-2008 ALOS Satellite imagery
Constants used in columns C, D , F, G, and H estimates from FAO (2015) "Forest Resource Assessment, Country Report Bhutan"

B. Estimates for mitigation impact 1 - Growth of carbon stocks in Bhutan's PAS

Concept	Tons of CO_2eq
A. Bhutan average annual CO_2eq emissions from forests in 2000	(-) 5,998,000
B. PAS average annual CO_2eq emissions from forests (A x 0.4147)	(-) 2,487,370
C. In 14 years of BFL (B x 14)	(-) 34,823,188

Sources:

A. From RGoB (2011) "Second National Communication to the UNFCCC" table 2.5. line B annual growth of CO2eq in the country forests circa year 2000

B. The percentage of Bhutan forests that are in PAs, as per table A

C. Estimates for mitigation impact 2 – Reforestation of 3,000 ha of degraded forests

Concept	Estimate
A. Average CO_2eq per hectare of PA mature forest	184 TCO_2eq/ha
B. Average growth time to maturity of tree species in Bhutan forests	15 to 20 years
C. We estimate that by the end of BFL reforestation plots will have achieved only half its full growth and hence, per hectare they will store	92 TCO_2eq/ha
D. Total BFL mitigation through reforestation (3,000 ha of reforestation x 92 CO_2eq per ha)	276,000 TCO_2eq

Sources:

A: From last line/column in table A

B: WWF Bhutan

C, D BFL project activities.

D: Is the total for BFL 14 years

Comparison with appropriate benchmark:

For Table A: Table A estimates of forest cover in Bhutan's PAs is consistent with the world benchmark, the FAO FRA country-wide tier 1 estimates (see FAO, 2015 "Forest Resource Assessment, Country Report Bhutan). Several recent academic reviews (Gilani et al (2015); Reddy, et al (2016) and Bruggeman et al (2016) give comparable estimates. Regarding carbon stocks in Bhutan's forest, FRA (2015) estimates more than double Table A estimates, so the latter can be seen as extremely conservative.

For Table B: Comparing Bhutan's Second National Communication to the UNFCCC figure for annual growth of CO_2eq in forests with the carbon stock estimated in Table A gives an annual rate of growth of 1.2% per year, which seems high compared with FRA (2015) and other studies that estimated annual growth of forest cover in Bhutan to be between 0.2% to 0.5 % per year (around 2000- 2010). But this may be due to the very low estimate of carbon stock used in Bhutan's Second National Communication to the UNFCCC (which was also the basis for the data in Table A. If, for example we compare Table B figures with the carbon stock estimates of FRA (2015), then the implicit forest rate of growth would be 0.5% per year, which is comparable with the forest growth estimates of FRA (2015) and Gilani (2016).

Methodology to estimate adaptation impacts

Beneficiary population figures cited in adaptation impacts 1, 2 and 4 are from (a) Bhutan's National Statistics Bureau 2005-2015 rural and district (Dzongkhag) population, (b) satellite imagery, and (c) the BFL program of activities. Adaptation impacts 3 and 5 are derived directly from the BFL program of activities. Further refinement of the beneficiary population figures, as well as monitoring and quantification of the impacts by community and gender, will be pursued during BFL implementation.

Comparison with appropriate benchmark: The above approach to quantifying the population that benefits from BFL adaptation activities is consistent with the discussion in other adaptation projects in the GCF portfolio (up to B14), and is also consistent with approaches recommended by several bilateral and multilateral funders of development and environment projects (e.g. GEF, USAID, WB, and ADB).

E.2. Paradigm Shift Potential

Degree to which the proposed activity can catalyze impact beyond a one-off project/programme investment

E.2.1. Potential for scaling up and replication (Provide a numerical multiple and supporting rationale)

On the one hand, with the goal of permanently boosting Bhutan's capacity and financing for the climate-smart management and conservation of 51% of the country's territory, BFL is already a full-scale country wide project, designed to make a major contribution to Bhutan's low-carbon, climate-resilient sustainable development path. On the other hand, as Bhutan's Prime Minster has stated, "Why just a Bhutan for Life? Why not an Earth for Life?" (see the Bhutan Prime Minister's TED talk here), suggesting that the BFC model can be replicated in many other countries.

Actually, WWF and its national and international partners are already involved in promoting, world-wide, the replication of the BFL approach – large scale public-private commitment to secure long term financing for sustainable management of protected areas. As of late 2016, there are well established cases showing positive results, such initiatives under development, and innovative ideas to further push the boundaries, including the following:

- Well established success stories of Brazil's Amazon Region Protected Areas (ARPA) program (see here); Canada's Great Bear Rainforest program (see here); and the Forever Costa Rica program (see here).
- In Colombia and Peru, government agencies, in collaboration with WWF, other NGOs and international funders, are designing BFL-type programs (see here).
- Recently, WWF and several leading charities began exploring how to move the BFL approach from a one-deal-at-a-time approach to a several-deals-and several-countries at the same time approach with more systemic knowledge sharing (see here).

We, the BFL partners, are convinced that the BFL project will achieve a paradigm shift for Bhutan – permanently protecting in a climate-smart way fully one-half of the country and helping it achieve its commitment to remain a carbon neutral nation, even in the face of continued economic growth. We also believe that the BFL approach has enormous paradigm shifting potential for replication in many other countries and can make significant contributions to forest and land use based mitigation and adaptation, with GCF having the opportunity to be a key financier and partner in Bhutan and potentially elsewhere .

E.2.2. Potential for knowledge and learning

Regarding knowledge and learning, consider that 75% of the 80+ activities in the BFL detailed work plan are devoted to the following: (a) Information gathering; (b) undertaking studies and plans; (c) capacity building and training for PAS staff and other government agencies; or (d) capacity building for and consultation with local populations. See the project description in section C.3 above, and also a detailed list of BFL activities in section H and Annex 5.

As Bhutan pushes ahead with the expansion of the country's hydro-meteorological and climate services,[21] with many of the new installations to be located in PAs, BFL will support these information gathering efforts and will invest in translating them into relevant knowledge and learning tools, available to PAS staff and local communities. The knowledge and learning tool will be available through the following activities:

Knowledge and learning activities with local communities

- Document, revive where necessary and promote continued use of traditional/indigenous systems related to conservation and climate resilience.
- Conduct community-based Climate Vulnerability and Capacity Assessment (CVCA) and implement ecosystem-based adaptation and climate-smart solutions based on CVCA results.
- Raise awareness and build capacity of local communities to mobilize the communities for sustainable and climate-resilient resource management practices, and implementation of community-based climate adaptation plans as citizen scientists.
- Build local capacity to implement climate-smart protection and management mechanisms for ten critical watersheds inside protected areas that will provide the greatest conservation, socio-economic, and climate resilience benefits.

Knowledge and learning activities with PAS staff

- Strengthen information management and monitoring systems in Bhutan's PAs to detect forest cover changes and ecological responses of forests and other natural resources to impacts of climate change.
- Develop climate-smart species conservation plans (including the human responses to climate change that may impact these species).
- Conduct mapping and analysis to track the rate and extent of habitat loss due to climate change and other anthropogenic causes, assess functionality of biological corridors, inventory of invasive species in PAs/BCs, and designate high biodiversity habitats, degraded lands, and climate refugia.

Knowledge and learning activities with RGoB infrastructure and rural investment agencies

- Enhance knowledge of climate change and its impact on various economic sectors based on climate change scenario modelling, conduct valuation of key ecosystem services, and build awareness and capacity of the government, academia, and research institutions to incorporate the findings into plans and policies.

International cooperation for knowledge and learning

- Through WWF, BFL will access a global network of experts including leading WWF scientists and partner organizations and programs. One particularly important collaboration is between BFL and the ADVANCE Partnership, created by WWF and Columbia University's Center for Climate Systems Research (CCSR), which is supported and staffed by NASA's Goddard Institute for Space Studies (GISS), home to one of the world's major climate models. ADVANCE was created to develop a new approach to generating climate science and information, moving from the current overwhelming supply of highly technical information to more targeted, useful information and insight to improve conservation and development planning, policy, and practice. In Bhutan, ADVANCE is working with National Environmental Commission (NEC) to develop new climate change projections based on the most recent downscaled global climate projections in the 2015 NASA Earth Exchange (NASA NEX) dataset, targeted at specific geographies and sectors in Bhutan. ADVANCE will work with key stakeholders and sectors in Bhutan through BFL to tailor these projections to ensure climate risks are explicitly considered. The information provided will thus be critical to the above.

[21] See RGoB-World Bank (2015)

E.2.3. Contribution to the creation of an enabling environment

Bhutan has already embraced a low-carbon and resilient development path. These concepts underpin the country's Gross Domestic Happiness approach to development (1972), they are enshrined in the 2008 constitution that commits to preserve 60% of the country under forests, permeate the country's integrated approach to natural resources management as exemplified in the Forest and Nature Conservation Act (1995) and in the Water Act (2011) and are reflected in commitments made under the UNFCC at COP15 and COP21. BFL will contribute technical and financial resources to putting these already existing enabling policies into practice in half of the country's territory, specifically the protected area system. In this regard, BFL will:

- Bring additional financing, knowledge, resources and capacity building to improve the work of public actors, namely staff from the PAS, the Ministry of Agriculture and Forests and other public agencies to design and implement the sustainable and climate-smart management of Bhutan's protected areas so that the PAs can deliver benefits to people and nature for posterity; and
- Bring financing, knowledge resources and capacity building to the private sector, particularly rural communities inside and in the vicinity of protected areas to help them mainstream climate adaptation into their farming practices, access new income and employment generation opportunities linked to low-carbon natural resources use (such as ecotourism in PAs), and improve their role in the participatory and gender sensitive management of Bhutan's natural resources.

E.2.4. Contribution to regulatory framework and policies

Bhutan has already made significant inroads in terms of regulatory and legal frameworks to drive investment in low emission development, including in the energy sector (Alternative Renewable Energy Policy, 2013), transport sector (Bhutan Transport 2040: Integrated Strategy Vision, 2013), water sector (Water act of 2011) and forest sector (Forest and Nature Conservation Act, 1995). The major contributions of the BFL project in this area will be:

- To improve climate responsive planning and development for the country's PAs, ensuring the climate-smart sustainable management of natural resources and ecosystem services in half of the country's territory.
- The upper watershed of all major rivers are in PAs, wo BFL will have significant positive impacts beyond the limits of PAs, facilitating the climate responsive planning and development of water resources and agriculture in the rest of the country.
- Several BFL activities will focus on enhancing the country's knowledge on climate change and its impact on various sectors of the economy, and will build awareness and capacity of the government, academia, and research institutions to use climate-related tools and findings when designing or updating sectoral plans and policies. This includes building PA management goals into the country's 5-year Development Plans, and the mainstreaming of ecosystem values into national policies.
- Lastly, BFL will help the RGoB to analyze options and develop new regulations to raise funds for the long term climate smart management of the country's natural resources.

Additional information on the contribution to regulatory frameworks and policies is included in the discussion of BFL activities in sections C and H.

E.3. Sustainable Development Potential

Wider benefits and priorities

E.3.1. Environmental, social and economic co-benefits, including gender-sensitive development impact

During BFL design, several stakeholder consultations focused on how to maximize BFL environmental, social and economic co-benefits beyond climate change and biodiversity protection, and how to contribute to the country's delivery on the 2030 UN Sustainable Development Goals. The table below shows how BFL co-benefits align with UN SDGs and targets. Comparing the table below with the 16 BFL milestones discussed in sections C and H shows which BFL qualitative and quantitative targets will deliver on these environmental and social co-benefits.

BFL will contribute to Bhutan achieving the following UN Sustainable Development Goals and targets (this excludes BFL's contribution to SDG 13 "Climate Action", which is a core benefit of this project that is discussed at length in other parts of this proposal).

BFL contributes to **SDG GOAL 1** "End poverty in all its forms everywhere", particularly to

- SDG Target 1.5 : By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

BFL contributes to **SDG GOAL 2** "End hunger, achieve food security and improved nutrition and promote sustainable agriculture", particularly to

- SDG Target 2.4 : By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

BFL contributes to **SDG GOAL 6** "Ensure access to water and sanitation for all", particularly to

- SDG Target 6.1 : By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- SDG Target 6.4 : By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
- SDG Target 6.5 : By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- SDG Target 6.6 : By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
- SDG Target 6.6 : By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

BFL contributes to **SDG GOAL 8** "Promote inclusive and sustainable economic growth, employment, and decent work for all", particularly to

- SDG Target 8.9 : By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

BFL contributes to **SDG GOAL 12** "Enable sustainable consumption and production patterns", particularly to

- SDG Target 12.2 : By 2030, achieve the sustainable management and efficient use of natural resources
- SDG Target 12.5 : By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- SDG Target 12.8 : By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

BFL contributes to **SDG GOAL 15** "Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss", particularly to

- SDG Target 15.1 : By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
- SDG Target 15.2 : By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
- SDG Target 15.4 : By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
- SDG Target 15.5 : Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
- SDG Target 15.7 : Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
- SDG Target 15.8 : By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
- SDG Target 15.9 : By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
- SDG Target 15.10 : Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation

E.4. Needs of the Recipient

Vulnerability and financing needs of the beneficiary country and population

E.4.1. Vulnerability of country and beneficiary groups (Adaptation only)

Bhutan's location, climate and topography make it highly prone to a range of hydro-meteorological hazards that will increase with climate change, including glacial lakes outburst floods (GLOFs), flash floods, riverine floods, landslides, cloudbursts, windstorms, and river erosion. Flooding is a recurrent phenomenon, especially during the monsoon season, and will be more severe with expected climate change. Moreover, most of the country's infrastructure (urban areas, hydropower plants, roads, and airports), fertile agricultural land, and over 70% of human settlements are located along main drainage basins, and are therefore at high risk of flooding. Some of the expected impacts of climate change in Bhutan[22] include the following:

Water: Bhutan is endowed with a number of rivers fed by glacial lakes originating from the medium to the high Himalayas, with long-term average annual flows of 73,000 million cubic meters per year. The major rivers provide water for human consumption, agriculture, hydropower, tourism and recreation. Tributaries and streams provide for all other uses with emphasis on water supply and irrigation. As temperature increases, although the monsoon-dominated annual precipitation cycle is expected to remain largely unchanged over South Asia, future decades are predicted to have drier and warmer winter months with reduced snow cover, while the summer/monsoon months are predicted to become wetter and warmer. The wetter monsoon months will coincide with accelerated glacial melting, causing river flows to increase even more, particularly during the rainy season.

[22] On climate change impacts in Bhutan see Gautam, M.R. et al (2013) ; Ahmed, M and Suphachalasai S (2014); and RGoB - World Bank (2015)

The seasonal pattern of flows over the year could become more erratic, and an increased volume of sediments will be carried by Himalayan rivers. At least 24 of Bhutan's 2,674 glacial lakes already pose a high risk of producing GLOF events. The melting ice from retreating glaciers is increasing the volume of water in glacial lakes and destabilizing the lakes. Also, future erratic and unpredictable rainfall patterns would reduce the ability of catchments to retain water, leading to increased runoff and enhanced soil erosion. The potential risk is mounting with respect to costly economic damage from GLOFs on key development sectors, such as agriculture, hydropower, and forestry.

Forest and other terrestrial ecosystems: Forests play an important role in the socioeconomic development of Bhutan. Bhutan's water resources are regulated and sustained through the country's rich forest cover that protects the fragile slopes while facilitating ground water recharge. Forests also protect watersheds and catchments crucial for generation of hydropower and are an integral parts of the farming systems. Predicted drier and hotter winters will increase forest fires, and the negative impacts of climate change on farming may motivate further deforestation.

Agriculture: According to the National Adaptation Program of Action (NEC 2006), climate change may cause crop failure and stress on livestock rearing, which will affect the rural poor who depend on crops and livestock. Occurrences of glacial lake outburst floods (GLOFs) due to glaciers retreating as temperatures increase would cause significant damage to cropland, death and injury to livestock, and eventually lead to food insecurity in the country. Considering that 31% of the agricultural land is located on slopes, the country is also likely to face more frequent landsides and increased land degradation.

Health: Malaria is an important vector-borne disease in Bhutan, especially in the southern lower elevation regions, and is likely to spread as suitable temperatures reach higher altitudes. Climate-related hazards such as GLOFs and landslides may also have an indirect negative impact on the health status of Bhutanese communities due to the resulting food insecurity.

Considering that Bhutan's economy heavily depends on hydropower, agriculture and forestry, with a majority of the population making a living from small scale farming, it is clear that the country's economic development and social well-being are highly vulnerable to climate change. Addressing Bhutan's adaptation risks may require some engineering and infrastructure solutions. However, Bhutan is particularly well-suited for ecosystem- and nature-based approaches to building resilience, as the country has a long conservation track record, a vast expanse of relatively unaltered ecosystems, and a challenging topography that limits the feasibility and cost-effectiveness of building structures.

The country's protected area network makes it a prime candidate for the BFL approach of climate-informed conservation to maintain key environmental services while providing the flexibility for ecosystems, people, and wildlife to adapt to increasing climate change impacts. This approach is recognized internationally, including in UNFCCC technical work, which is summarized in the following three tables. These tables include major reactive and proactive adaptation strategies for South Asia's natural resources, many of which are part of BFL programming.

Reactive and Anticipatory Adaptation Measures in Terrestrial Ecosystems
(from United Nations Framework Convention on Climate Change 2007)

Reactive Adaptation	Anticipatory Adaptation
• Improvement of management systems including control of deforestation, reforestation, and afforestation • Promoting agroforestry to improve forest goods and services • Development or improvement of national forest fire management plans • Improvement of carbon storage in forests	• Creation of parks and reserves, protected areas, and biodiversity corridors • Identification and development of species resistant to climate change • Better assessment of the vulnerability of ecosystems • Monitoring of species • Development and maintenance of seed banks • Including socioeconomic factors in management policy

Adaptation Options for Terrestrial Ecosystems
(adapted from Ahmed, M and Suphachalasai S (2014)

Area for Climate Change effects/Impacts	Adaptation Responses
Community-based forest fire control	• Capacity building program for forest managers, awareness building program for communities, fire prevention program for forest managers, and policy reform for effective and easy implementation
Programs of forest pathogen control	• Identification of pathogens, study of life cycle of pathogens, developing appropriate mechanisms, training of forest managers
Control of invasive species	• Research to control invasive species, control mechanism dissemination
Reduced rainfall and increased temperature results in more forest fires	• Awareness raising • Conservation/promotion of afforestation/reforestation program • Increase capacity and resources for forest fire prevention and control
Wildlife management in relation to climate stress	• Identification of wildlife impacted by high temperature and drought, habitat improvement, development and implementation of conservation plans
Vulnerable species conservation	• Identification of species, preparing and implementing management plans
High-altitude rangeland conservation	• Identification of the management area, preparing rangeland management plan, training of local communities
Management at the landscape level	• Identification of threatened flora and fauna, establishment of corridors and connectivity, identification of activities for their movement and dispersal, preparing and implementing landscape-level conservation plan
Management of at-risk biological resources of special value for local communities	• Identification of risk region and species at risk, preparing and implementing management plans with involvement of local and indigenous communities
Conservation of riverine forests	• Identification of appropriate forest types, preparing and implementing management plans with participation of local communities
Maintenance of biodiversity database	• Selection of pilot area, preparation of biodiversity databases, preparation and implementation of conservation plans
Payment for Ecosystem Services	• Analyze and implement new sources of income for adaptation and maintenance of ecosystem services • Establishment of forum for upstream and downstream stakeholder interaction to discuss PES options for the conservation of upstream resources
Awareness and capacity building of stakeholders	• Awareness building in communities and other local stakeholders on the potential climate hazards in the area, training communities to combat potential hazards
Policy development	• Incorporation of forest sector policies that foster climate adaptation and mitigation, joining sector adaptation activities with mitigation
Research and development for adaptation	• Identification of research issues, conducting research with involvement of local communities

E.4.2. Financial, economic, social and institutional needs

Financial needs of Bhutan
According to UN, World Bank and Asian Development Bank analyses, Bhutan is a lower middle income developing country with positive economic, social and environmental trends. However, Bhutan is faced with severe constraints due to its small size, landlocked location, extremely rugged terrain, and limited resources. With most of its population engaged in small farming and services, Bhutan's only two export sectors are hydropower sales to India and tourism.

In addition, Bhutan is heavily dependent on foreign loans and foreign aid to support its development. In recent years foreign aid (mostly from India) represented one quarter of Bhutan's government expenditure, or more than half of public investment, and about 10% of the country's GDP. Foreign lending was equivalent to 60% of the GDP, and debt services recently accounted for more than 10% of total exports (all figures from the World Bank Data website).

Given its financial situation, Bhutan would not be able to undertake the BFL project without an injection of private and public grants to bridge the current financial gap for conservation, which would give the country time to steadily increase its own revenue generation to meet its financial commitments for PAs management. Regarding the absence of alternative sources of financing, please see Section D.1, where the issue is thoroughly discussed.

E.5. Country Ownership

Beneficiary country (ies) ownership of, and capacity to implement, a funded project or programme

E.5.1. Existence of a national climate strategy and coherence with existing plans and policies, including NAMAs, NAPAs and NAPs

The BFL project significantly contributes to the country's identified priorities for low-emission and climate-resilient development. The table below shows the alignment of BFL with the country's UNFCCC NDC. This is the result of two years of project development, with the participation of all major government and non-governmental stakeholders (detailed in section 5.3. below):

BFL contributes to six of the nine mitigation strategies that Bhutan submitted to the UNFCCC in the Nationally Defined Contributions (RGoB, 2015)

BFL will make a significant contribution to the county's top mitigation strategy:

- Bhutan NDC Mitigation Strategy 1: Sustainable forest management and conservation of biodiversity to ensure sustained environmental services through:
  - Sustainable management of forest management units (FMUs), protected areas, community forests, forest areas outside FMUs, and private forests
  - Enhancing forest information and monitoring infrastructure through national forest inventories and carbon stock assessments
  - Forest fire management and rehabilitation of degraded and barren forest lands

BFL will also make contributions to the following four NDC mitigation strategies:

- Bhutan NDC Mitigation Strategy 4: Promote a green and self-reliant economy toward carbon-neutral and sustainable development
- Bhutan NDC Mitigation Strategy 5: Promote clean renewable energy generation
- Bhutan NDC Mitigation Strategy 6: Promote climate smart livestock farming practices to contribute towards poverty alleviation and self sufficiency
- Bhutan NDC Mitigation Strategy 7: Promote climate-smart agriculture to contribute toward achieving food and nutrition security

BFL contributes to seven of the ten adaptation strategies that Bhutan submitted to the UNFCCC in the Nationally Defined Contributions (RGoB, 2015)

BFL will make a significant contribution to the county's third adaptation strategy:

- Bhutan NDC Adaptation Strategy 3: Sustainable forest management and conservation of biodiversity to ensure sustainable environmental services

BFL will also contribute to the following six NDC adaptation strategies:

- Bhutan NDC Adaptation Strategy 1: Increase resilience to the impacts of climate change on water security through Integrated Water Resource Management (IWRM) approaches
- Bhutan NDC Adaptation Strategy 2: Promote climate resilient agriculture to contribute toward achieving food and nutrition security
- Bhutan NDC Adaptation Strategy 4: Strengthen resilience to climate change hazards
- Bhutan NDC Adaptation Strategy 7: Promote climate resilient livestock farming practices to contribute towards poverty alleviation and self sufficiency
- Bhutan NDC Adaptation Strategy 8: Enhance climate information services for vulnerability and adaptation assessment and planning
- Bhutan NDC Adaptation Strategy 9: Promote clean renewable and climate resilient energy generation

The BFL project is fully integrated with Bhutan's 2015 NDC, which is critical alignment with UNFCCC commitments. It is important to note that the idea of pursuing an initiative like BFL had been proposed in previous climate and environment plans, including:

- Bhutan's 2006 National Adaptation Programme of Action (NAPA), updated in 2012
- Bhutan's 2007 National Environment Protection Act
- Bhutan's 2007 National Forest Policy
- Bhutan's 2011 Second National Communication to the UNFCCC
- Bhutan's 2012 National Strategy and Action Plan for Low Carbon Development
- Bhutan's 2014 National Biodiversity Strategies and Action Plan

While designing BFL, Bhutan's programs and projects supported by international institutions (GEF, UNDP, World Bank, Asian Development Bank) have been extensively evaluated to ensure BFL is compatible and working in synergy with these initiatives.

Beyond BFL alignment with Bhutan's NDC and specific ongoing projects, BFL is also supported by the country's overall enabling policy. Environmental conservation is one of the four pillars of Bhutan's approach to development known as "Gross National Happiness", is enshrined in the country's constitution, and is central to the government's 11th Five Year Plan (2013-2018), its Vision 2020, and the 12th Five Year Plan (2018-2023) already under preparation.

The development of BFL also took into account Bhutan's emerging strategy for GCF investments, and BFL with its focus in the sustainable management of natural resources' in protected areas, handily complements the two other GCF projects proposal under development in Bhutan: one with the World Bank that will focus on in the transport sector of urban areas, and the other with UNDP that will focus on adaptation of farming outside protected areas in Bhutan.

E.5.2. Capacity of accredited entities and executing entities to deliver

Regarding the experience and track record of WWF (the AE) with respect to the activities that will be undertaken by BFL, we have over 50 years of experience working on environment and development issues around the world, and WWF is today the world largest conservation organization by budget, number of technical staff and number of active conservation projects. As described in other sections of this document, WWF has pioneered the BFL approach and has successfully partnered with governments and local stakeholders to implement it in the Brazilian Amazon. Moreover, the AE has, for almost two years, worked closely with Bhutan agencies and local stakeholders in developing BFL. Much more information on the track record of WWF with PAs, sustainable management, biodiversity conservation and climate change can be found on our website www.worldwildlife.org.

Regarding the experience and track record of the MoAF (the EE), and its Department of Forest and Park Services (DoFPS) with respect to the activities that will be undertaken by BFL, the DoFPS is one of the oldest and most reputable agencies in Bhutan. Since the establishment of the first PAs in 1960, the DoFPS has been responsible for planning, coordinating and implementing Integrated Conservation and Development Programs for each of Bhutan's PAs, and currently the DoFPS has technical teams covering the following areas:

- Species conservation and habitat management
- Protection and management of ecosystems
- Climate change adaptation and mitigation
- Integrated livelihood initiatives
- Application of PA management tools and mechanisms
- Anti-poaching

Regarding the execution of internationally supported conservation programs, the EE has a very strong trade record. In the last five years the MoAF, Department of Forest and Park Services has executed over 25 internationally supported projects.[23]

It is important to emphasize that the participation of WWF-Bhutan and the global WWF Network guarantees that BFL can mobilize, on short notice, world-class technical support as needed to supplement and foster the expanding capacity of the executing entities.

E.5.3. Engagement with NDAs, civil society organizations and other relevant stakeholders

The BFL concept was developed during 2015 and 2016 by two working groups, including technical and managerial staff from Bhutan's GCF NDA, the Gross National Happiness Commission, the Ministry of Agriculture and Forests, the Ministry of Finance, the Ministry of Foreign Affairs, Bhutan Trust Fund for Environmental Conservation, and WWF-Bhutan.

Furthermore, during 2015 and 2016, the office of the RGoB Prime Minster actively participated in these discussions, and the Prime Minister himself addressed the international community several times, explaining the goals of BFL and its potential for replication worldwide. This includes Prime Minister Tshering Tobgay's February 2016 TED talk "This Country Is Not Just Carbon Neutral. It Is Carbon Negative". In this 15 minute presentation, PM Tobgay discusses his country's sustainability commitment and highlights how the BFL project will contribute to it, all against the backdrop of Bhutan's outstanding landscapes. Rather than providing a dry transcript of the talk, we invite you to see this powerful presentation live here.

The table below includes type of stakeholders involved in BFL design process:

Stakeholder Category	Key Stakeholders
Field Level	1. Protected Area and Biological Corridors staff 2. District administrations 3. Local communities
National Level	1. Office of RGoB Prime Minister

[23] Details on these projects can be found in report, "A Profile of Donor Supported Projects in the Renewable Natural Resource (RNR) Sector 2015" available here

	2. Gross National Happiness Commission 3. Ministry of Agriculture and Forests 4. Ministry of Finance 5. Ministry of Foreign Affairs 6. National Environment Commission 7. WWF-Bhutan 8. Tourism Council of Bhutan
International Level	1. WWF 2. Private donors / funds 3. Bilateral donors 4. Multilateral donors / funds

National Level Stakeholder Engagement

Stakeholder dialogue on the potential for a project with the BFL approach began as early as 2012. When government authorities decided to proceed with this approach, the two working groups were created to bring together key national stakeholders. These working groups were organized as follows:

- Technical Working Group (TWG): A working group to develop the technical aspects of the long term conservation plan for Bhutan PAs, which is the foundation of the BFL project. The group was formed in 2014 with members from the Ministry of Agriculture and Forests (including staff from the Wildlife Conservation Division, Policy and Planning Division, Forest Resource Management Division, Nature Recreation, and Education Division), protected area managers, the Ugyen Wangchuck Institute of Conservation and Environment, and WWF-Bhutan.

- Strategic Planning Committee (SPC): A committee to develop the overall design and fundraising strategy of the BFL project was formed in 2015 with participants from the Ministry of Finance, Ministry of Foreign Affairs, Ministry of Agriculture and Forests, Cabinet Secretariat, Gross National Happiness Commission, Bhutan Trust Fund for Environmental Conservation, and WWF-Bhutan.

The key meetings and activities of these two groups and other national stakeholders are listed in the table below.

Activities	Timeline	Organized by	Stakeholders and main issues addressed
Stakeholder consultation on the Project Finance for Permanence approach and its relevance to Bhutan	July 2012	DoFPS	Project Finance for Permanence (PFP) concept introduced to the DoFPS WWF and DoFPS agreed to introduce the concept to RGoB stakeholders
Inception meeting	28 February, 2013	MoAF	PFP concept presented to RGoB stakeholders RGoB stakeholders agreed that MoAF and WWF will develop a concept for Bhutan PFP Task force formed to develop the concept

Conservation and Financial Planning Workshop	8-10 November 2014	MoAF	WWF Bhutan and MoAF agreed on the thematic areas for the conservation plan Preliminary costing undertaken
Stakeholder consultation on conservation plan and financial planning results	15-21 December 2014	MoAF	BFL concept, draft milestone document, and costing presented to the stakeholders Agreed that BFL should be a transition fund and not an endowment fund
Coordination meeting	10 April 2015	WWF	Agreed to present BFL concept to Ministers and Secretaries of key Ministries and Agencies
High level Stakeholders Consultation	9 May 2015	MoAF	Agreed to form a multi-sector Strategic Planning Committee (with representation from GNHC, MoF, MoFA, MoAF, BTFEC, Cabinet Secretariat and WWF Bhutan)
Review of milestones and cost estimates	11-18 April 2015	TWG	Agreed on the costing model and the size of the transition fund
Presentation to the Ministry of Agriculture and Forests	July 2015	DoFPS	Draft milestone and costing document presented to the MoAF MoAF recommended review of the documents
Conservation plan and financial planning finalization workshop	1-5 February 2016	DoFPS	Conservation plan and costing vetted and activities agreed
Presentation of BFL conservation plan and financial planning results	May 2016	MoAF	MoAF endorsed the BFL Conservation Plan and costing
Consultation with field staff and communities	May 2016	WWF	While the BFL Conservation Plan was developed with consultations with the field staff and communities, the final results were presented to the protected area field staff and communities for final review Field staff and communities endorsed the BFL conservation plan, with the recommendation to specify areas/communities for implementation of livelihood interventions

Field level consultations

Protected area staff participated, from the very beginning, in the discussions with the national TWG. Consultations involving district authorities and local communities were then conducted, with the participating community leaders representing populations living in and adjacent to the PAs. Although the project area is vast, covering one-half of the country, these consultations offered opportunities for discussions and feedback on the initial design of the project with potentially affected communities and beneficiaries. Attention was given to balanced gender representation in both the participants and issues discussed. One of the main concerns raised by the communities during these

consultations were regarding beneficiary selection in the implementation of BFL activities. During implementation the project will undertake a consultative process to ensure equitable distribution of project benefits. A summary of other discussions during recent field level consultations is provided below (full notes of the consultations are included in Annex 14).

Consultations with local communities in November-December 2016[24]

Location / date: Participants, including local authorities and agencies, local communities, CSOs, and the number of female, male and youth participants	Presentation and discussion format: a presentation of BFL, an initial open discussion and an invitation to form groups of female, male and youth to elaborate their views regarding key questions proposed by the BFL team, as well as space for the groups to raise other questions and issues.
Bumthang (October 20, 2016)	Key takeaways: 1. Considered nature very important as they depend on natural resources for their livelihoods. 2. Good level of understanding of environmental rules and regulations (especially those related to utilizing and harvesting natural resources) 3. Adequate awareness of the support they are receiving from the Parks (support received includes solar fencing, eco-tourism, supply of seeds, etc) 4. Good collaboration and coordination with Park staff 5. Key issues raised – crop damage by wildlife, need for alternative energy sources (substitute for fuel wood), illegal poaching of wildlife, alternative sources of livelihood 6. Key needs expressed – eco tourism and local product development, waste management, human wildlife conflict mitigation measures (solar fencing and compensation funds), promotion of non-wood forest products, capacity building, etc.
Tashigang (October 22, 2016)	Key takeaways: 1. Consider environment conservation very important. 2. Understand wildlife is an important element of the eco system. 3. Showed awareness of laws and rules related to harvesting of natural resources (but expressed need for alternatives for fuel wood) 4. Mentioned that overall welfare of the people has improved with support from Park Offices. 5. Engaged with the park staff in setting up community conservation groups 6. Expressed interest for the communities to play a bigger role in environmental education and waste management 7. Key issues raised – Human wildlife conflict, climate change and impeding natural disasters, drying of water sources, land degradation, pests and diseases, etc 8. Key needs expressed – alternative sources of energy, human wildlife conflict mitigation measures, product development and promotion of indigenous arts and

[24] All these sessions where recorded and transcripts are available from the BFL Technical working Group and the AE

	crafts, development of eco-tourism facilities, waste management, supply of seeds and seedlings, farming technologies (green houses),etc.
Gelephu (October 26, 2016)	Key takeaways: 1. Expressed the need to conserve environment since they depend on nature for their livelihood. 2. Expressed that people's awareness on the values and importance of conservation has elevated compared to the past. 3. Expressed interest to learn more about Park Management systems and engage more in conservation activities 4. Key concerns raised – natural disasters, impacts of developmental activities (mining and infrastructure), excessive harvesting of medicinal plants, human wildlife conflict, cross border poaching, access to drinking water, etc. 5. Key needs expressed – human wildlife mitigation technologies (including capacity building), improved access to drinking water, forest fire management, anti-poaching, improvement of eco-tourism facilities, etc.

Independent of these local consultations, Environmental and Social and Gender assessment consultants undertook additional suite of local consultations as reported in Annex 8 and 9.

E.6. Efficiency and Effectiveness

Economic and, if appropriate, financial soundness of the project/programme

E.6.1. Cost-effectiveness and efficiency

Financial structure

The BFL financial structure is adequate and reasonable in order to achieve the proposal's objectives, and the conservation plan of BFL. This includes addressing existing bottlenecks and/or barriers, providing the least concessionality, and preventing the crowding out of private and other public investment, as detailed below. In brief, BFL's financial structure and program of activities will pursue the following:

- Address two major bottlenecks in Bhutan's protected areas system: 1) short-term lack of funds to upgrade the management of PAs in the next 10 to 14 years; and 2) develop new, in-country sources of funding for PAs in the medium and long term.
- Not crowd out public or private financing. Regarding private financing, BFL includes approximately US $16.6 million of private financing (approximately 62% of the financing requested from the GCF). Regarding new public investment, BFL includes US $75.1 million of total investment (including $ 28 million of new investment) from the RGoB. Importantly, the RGoB funding commitment is scaled up year after year throughout the project life of BFL, so that by the end of BFL, the government has developed new sources of revenue to fully finance the PAS in the long term.

BFL effectiveness

BFL is expected to be highly effective in delivering the proposed results because Bhutan's system of protected areas is well established, the natural environment of PAs is largely intact, and the high capacity and competence of the existing PAS staff is recognized by national and international assessments (the latest review was the 2016

evaluation of Bhutan's PAs[25]). For over two years, the BFL team has discussed and planned the project activities with Bhutan's PAS staff and key stakeholders (see section E.5.3), and all these represent a solid base upon which the BFL project will build. This includes increasing human and financial resources to mainstream climate mitigation and adaptation into the management of more than half of the country's territory.

Regarding the country capabilities to undertake environmental projects, Bhutan's global environmental commitment and leadership has earned the country numerous international accolades, including the J. Paul Getty Award for Conservation Leadership and the MacArthur Award for Creative and Effective Institutions (MACEI).
Also, supporting the on-the-ground execution of BFL, WWF-Bhutan has almost 40 years of on-the-ground field experience in Bhutan, particularly with fostering environmental conservation and sustainable livelihoods.

Economic efficiency

Regarding economic efficiency, which is the ability to deliver results at the minimum possible cost, this project is the first of its kind in Bhutan, so the comparisons included below are based on figures from other countries and international literature.

- In section E.6.5, we estimate mitigation costs of US $0.84 per ton of CO_2eq additionally sequestered in Bhutan's PA forests during BFL's 14 year lifetime. This is one third of the US $5 per t$CO_2$eq often used as a reference in REDD+ projects.

  This estimate only considers incremental carbon sequestration as a result of the growth of PA forests during the 14 years of BFL implementation. We have not assigned a price to the conservation of the standing forest and the carbon therein, an issue that has repeatedly been raised in international REDD+ discussions regarding how to compensate "high forest cover-low deforestation" countries. We could, for example, compare BFL forest mitigation payments with the approach that Norway's NICFI program used to reward Guyana's forest conservation efforts. BFL is paying approximately 12 cents for each dollar compared to the NICFI-Guyana agreement approach.[26]
- Regarding efficiency of the adaptation expenditure, BFL budgets a 14 year total of (a) US $1,979 per direct beneficiary (population living inside PAs), or (b) US $422 per direct plus indirect beneficiary (population living inside PA plus population living within 10 km of the PA limit).[27] These figures compare favourably with the average costs of adaptation projects in the GCF portfolio and in the portfolio of other agencies (GEF, World Bank, and USAID).
- On a broader perspective, if we consider that the entire BFL budget is delivering increased resilience of ecosystems and ecosystem services, then BFL will spend approximately $427 dollars per km^2/year ($4.3 per ha/year) to achieve climate-smart, sustainable management of Bhutan's PAs. This is in the lower range of cost estimates for sound PA management, without including climate change related investments (Bruner et al. 2004, Verugdenhil et al. 2003, and Balmford et al. 2003). For comparison, the PAs in Southeast Asian countries are significantly under-managed and current spending is on average US $660 per km^2/year, and estimates of what it would take to properly manage them put the cost at US $985 per km^2/year (James et al., 1999).

E.6.2. Co-financing, leveraging and mobilized long-term investments (mitigation only)

BFL co-financing ratio: This ratio is presented in Section E.6.5. Overall, BFL leverage is 3.5 dollars of funding for each dollar of GCF funding or 1.7 dollars for each dollar of GCF funding if we only consider the additional funding above the baseline RGoB expenditure.

[25] See Ministry of Agriculture and Forests (2016)
[26] See discussion in Annex 6 and also Gutman and Aguilar Amuchastegui (2012)
[27] See section E.1.2. and E.6.5. for the source of these estimates

Potential to catalyze indirect and long-term low emission investment: With the goal of delivering sustainable and climate-smart management of half the country's territory, BFL has significant potential to catalyze direct and indirect and long-term low carbon investment in several areas, including:

- Directly through the RGoB commitment to increase, from year one of BFL, the public funding of PAs, and maintaining these higher levels of financing over the long term, including by earmarking new sources of revenue that will be explored and put in place during BFL; and
- Indirectly through new private sector investment in eco-tourism triggered by BFL investment in improved infrastructure and management in PAs.

E.6.3. Financial viability

Financial rate of return: Around the world, protected areas are managed as public goods, financed mostly from the public budget. This is also the case in Bhutan, and BFL is not a project meant to generate net revenues, so no attempt has been made to estimate a financial rate of return for the project.

Financial viability in the long run, beyond the GCF intervention: While Bhutan's PAs are not expected to generate net revenues, the RGoB and the BFL project are keenly aware that the current level of government financing is not enough to assure long term sustainable management of the country's protected areas. This realization is in fact central to the BFL project rationale: a one-time external financing boost will elevate the level of management and ecosystem services delivery of Bhutan's PAs, while at the same time the RGoB, with help from BFL, will develop and put in place new sources of sustainable revenue to pay for this improved level of PAS management in the long-term. To achieve this, we plan to monetize a small part of the financial benefits accruing in several sectors that depend on the ecosystem services provided by PAs, including water availability, eco-tourism, and carbon mitigation. This was described in detail in section D.2.

Economic rate of return: Estimating an economic rate of return requires knowledge of direct and indirect costs and benefits of the project in question. Usually direct costs are straightforward, as defined in the project budget, but all other costs and benefits may be difficult to estimate, particularly when public goods and new sectors are involved, and market signals are missing. This is the case for many climate and environment investments, including BFL. Nevertheless, in Annex 6 we provide an economic appraisal of the project based on available information. The summary results are described below and in Section F.1.

- **Economic internal rate of return (EIRR) on mitigation investment:** The costs are the BFL costs and the benefits are avoided emissions (increased sequestration), as measured by different estimates of opportunity costs or social cost of carbon (as explained in Annex 6). In all cases the ERR is above 20%.

- **Economic soundness of BFL adaptation investment:** Currently there is not enough quantitative information to estimate an ERR to adaptation investment in Bhutan. In its absence, Annex 6 compares BFL adaptation costs with figures from the recent ADB – UK study on adaptation impacts and costs in South Asia[8] and finds that BFL investment in adaptation are in the low range of ADB-UK suggested values, both in annual figures and on a per ha base.

- **Net present value (NPV) of BFL overall investment in protecting and enhancing the flow of Bhutan's ecosystem services:** For this estimate, in Annex 6, the costs are the total BFL costs, and the benefits are the fractions of ecosystem services provided by Bhutan's temperate forest landscapes that would be lost for lack of proper conservation management. Even at a high 12% per year discount rate the NPV of ES protected by BFL investment are over 900 million dollars in a 2050 horizon and near 400 million dollars during the 10 years of GCF financing engagement in BFL.

E.6.4. Application of best practices

BFL will apply best practices to address the primary challenges of climate change in Bhutan's protected areas system and corridors. These include increasingly frequent and intense extreme hazards such as droughts, floods, and landslides resulting from increasingly intense, variable precipitation patterns like the South Asian Monsoon, which regional evidence indicates is also beginning later and ending earlier; and slower-onset changes like increasing temperatures that over the coming decades will lead to significant shifts in vegetation growth patterns, wildlife migration, and a host of other impacts that will affect ecosystem services on which surrounding communities in and around PAs directly rely.

To address these climate change challenges, the project will rely on best practices in generating and applying climate risk information, particularly through WWF's ADVANCE partnership with climate scientists at Columbia University's Center for Climate Systems Research (CCSR) and NASA's Goddard Institute for Space Studies (GISS). ADVANCE seeks to greatly simplify the complexity and uncertainty in climate science by working directly with stakeholders to filter an overwhelming deluge of data into a much more useful stream of risk information. This information, including best available downscaled projections using NASA's NEX database of modeled 25 km resolution global future rainfall and temperature data, is already being generated in coordination with WWF-Bhutan and MoAF staff, and is being tailored to the decision-making needs of BFL. It will be specifically used to guide the various activities designed to be climate-resilient by outlining the existing trends and likely or potential future climate and its potential impact on the PA system. Additional planned assessments will rely on best practices and available technologies in determining how current ecosystem services surrounding populations directly rely on, including water supplies, sediment retention and flood control from forests, are likely to change based on the ADVANCE projections of future climates.

The Government and other local partners will rely on the considerable experience and expertise of the larger WWF network that has been implementing climate change adaptation projects and programs in communities in and around protected areas and programs for decades, including in nearby Nepal and India, resulting in considerable learning and best practices tailored to the mountainous ecosystems of the region. These include participatory approaches for vulnerability, adaptive capacity, and ecosystem services assessments; community and on-farm best practices for improved productivity and more efficient water use, soil and pest management, climate-resilient seed varieties, early warning systems, spring source protection plans, weather station installation and monitoring; and alternative livelihoods, among others.

E.6.5. Key efficiency and effectiveness indicators

GCF core indicators

Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation only)

(a) Total project financing is US $118.2 M, of which approximately 25% is on mitigation: **US $29.55 M**
(b) Total requested from GCF is US $26.5 M, of which approximately 50% is on mitigation: **US $13.25 M**
(c) Expected carbon sequestration during 14 years of project implementation: **35.1 MtCO_2eq**
(d) Estimated cost per tCO2eq (d=a/c): US $0.84 / t$CO_2$eq
(e) Estimated GCF cost per tCO2eq (e=b/c): US $0.38 / t$CO_2$eq

Methodology

Lines (a) and (b): We estimate that BFL mitigation expenses encompass 25% of the project total costs and half of the funding requested from the GCF. It is difficult, however, to separate mitigation, adaptation and ecosystem services costs precisely in BFL because the ecosystem based approach of many BFL activities involve multi-purpose delivery (such as forest fire fighting, land cover restoration and climate smart watershed management).

Line (c): This is from Section E.1.2, which includes a detailed methodological explanation.

Lines (d) and (e): d=a/c and e= b/c)

Comparison with appropriate benchmarks: The above dollar values per tCO_2eq sequestered are a fraction of the 5 dollars per tCO_2eq that has been used as a reference price in many forest carbon projects (such as the World Bank managed FIP and FCPF programs, Norway's NICFI program and Brazil Amazon's Fund).

Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (mitigation only)

BFL financing (millions of US dollars)	BFL total	BFL for mitigation
(a) Total cost	118.2	29.55
(b) Co-financing by RGoB and other multilateral and bilateral	91.7	16.3
(c) Requested from GCF	26.5	13.25
(d) Leverage ratio (line b/c)	3.46	1.26

Methodology

Lines (a), (b) and (c): These lines are from the BFL Cost Summary (see Section B.1.). This includes the same assumption, mentioned above, that 25% of the total BFL budget will be for mitigation activities.

Line (d): Line b/c

Comparison with appropriate benchmarks: The leverage ratios of 3.5 dollars and 1.3 dollars of leveraged funding for each dollar of GCF funding is significantly more than the average leverage ratio of the GCF portfolio of public projects (up to Board 15). It is also more than the average leverage ratio of other international climate funds that offer grant financing for forest carbon mitigation (such as CIF, FIP and NICFI).

Other relevant indicators (e.g. estimated cost per co-benefit generated as a result of the project/programme)	See discussion in Section E.6. above

F.1. Economic and Financial Analysis

Economic analysis narrative and rationale

The goal of BFL is to safeguard and enhance the ecosystem services that flow from Bhutan's protected areas, which encompass 51% of the country's territory. These ecosystem services significantly contribute to the country's low-carbon development path and its capacity to adapt to climate change, and could provide much more if properly managed. The economic rationale for the BFL approach is based on the following key points:

a) **The economic value of Bhutan's PAs is high:** Available estimates of the value of regulating ecosystem services flowing from forest landscapes in Bhutan's protected areas are on the order of US $1,264 to US $3,254 /ha/year, half of which are ecosystem services related to climate regulation.[28]

b) **The resources to invest in PA management are scarce:** As is the case in most countries around the world, the PA ecosystem services in Bhutan are mostly "public goods," which do not carry a price. Also, as much as half of these public goods may be global in nature, where beneficiaries are outside of Bhutan. Little to no money is collected from these beneficiaries, and almost all investment in PAS management comes from the RGoB, which currently spends US $1.80 to US $2 /ha/year on PAs.

The commitment by the RGoB to environmental conservation and climate action, and the overall healthy state of the country's PAs, form the basis for the BFL project[29] and also support the foundation of the BFL economic analysis and rationale. This includes the following:

c) A one-time external influx of approximately US $43 million in grants financing, to be spent over the 14-year lifetime of BFL, and the increased investment by the RGoB, can elevate the expenditure in Bhutan's PAs to approximately US $4 per/ha/year. This will help to improve PA management across the country, and help to ensure that PAS management is sustainable, climate-smart, and delivers increased flows of ecosystem services. This will also support climate mitigation and adaptation.

d) The BFL project helps the country identify, assess and access new sources of income linked to the ecosystem services provided by PAs, tourism sector and REDD+, so that by the end of BFL the RGoB will be capable of sustaining the new level of PAS management with its own resources.

Financial analysis and financial model narrative and rationale

The economic rationale for BFL included above is supported by a detailed financial analysis, conducted with the participation of staff of Bhutan's PAs and other national and local stakeholders. The financial analysis was conducted to identify needs, gaps, required resources, costs and the distribution of costs among current and potential funding sources (see section E.5.3 for stakeholder engagement and Annex 5 for the financial modelling).

At several times during the design of BFL, the financial analysis was discussed with international experts on PA management and with potential donors. The overall conclusions and rationale of the BFL financial analysis include the following:

- The budget and lifespan of BFL are adequate and cost-effective to achieve the expected results.
- The 14-year lifespan and 20 potential implementation sites (10 parks, 8 biological corridors, 1 botanical garden and central level) give BFL a lot of flexibility to reschedule activities to mitigate financial risks and still deliver on BFL goals.

[28] These are Kubisezewki et al (2013) low bound estimates for Bhutah's temperate forest landscapes. Regulating ecosystem services include air quality, biodiversity protection, biological control, climate regulation, erosion prevention, pollination, soil formation, and water purification. See Annex 6 for a more detailed discussion

[29] See the 2016 assessment of the state of Bhutan's PAs in Ministry of Agriculture and Forests (2016)

- A contingency built into the financial model will help mitigate the risk of cost overruns, inflation and exchange risks.
- The expected rate of growth of RGoB annual contributions is realistic.
- As stated in Section B, the choice of grants as the financial contribution requested from the GCF is appropriate considering that (a) the goal is to provide transitional financing for PA management and PAs are not managed as profit making activities, (b) Bhutan, the recipient country, is a landlocked least developed country with severe budgetary limitations, and (c) the GCF grant will be matched by public and private financing at a leverage ratio of US $3.5 (total project) and 1.7 (additional funds) for each US $1 from the GCF.

F.2. Technical Evaluation

This project focuses on a combination of interventions to enhance climate resilience in natural systems and the ecosystem services they provide, while also helping communities that rely on them to adapt to the impacts of climate change. Accomplishing this will require substantial investment in research and assessment to determine exactly what impacts communities and ecosystems already face, and what thresholds they are likely to face in the future. A number of activities aim to fill the information gaps, including assessing the climate vulnerability of communities and ecosystems, and current and future climate risk.

Historical weather station data is limited in Bhutan, both in terms of geographic scope (number of stations across the country) and years available, with data only recorded as far back as 20 years in most cases. Combined with the extreme topography that creates numerous micro-climates, assessing observed statistically significant trends in weather and climate in Bhutan is a challenging task. The National Adaptation Program of Action (NAPA) is a useful resource in filling part of this gap, but since it was produced in 2009 with only one downscaled climate model to determine future projections at 50 km resolution, there is a critical need for an update. Climate risk information from the ADVANCE partnership meets this need to some extent by further downscaling to 25 km using best available NASA data and representing a fuller range of potential future options by sampling from downscaled data from 21 models. Still, additional engagement through ADVANCE with specific sectors and project stakeholders will be necessary to assess exact system thresholds in the face of potential changes through scenario planning processes. This scenario planning processes would include, for example, determining which crops will survive a percentage decrease in rainy days, or how forest composition will change with a 2 degree C temperature rise and increase in number of hot days. This work will be critical to supporting the various climate-smart or climate-resilient management plans called for in numerous activities.

F.3. Environmental, Social Assessment, including Gender Considerations

The project will support activities in 10 protected areas (and the Royal Botanical Park), 8 Biological corridors, and some policy based activities at the National level. There are approximately 35,000 people (7,000 households) living within the protected area network and additional 110,000 people living in the vicinity of PAs, most of whom depend on natural resources for their livelihoods.

The proposed project has triggered the following WWF safeguards policies - Natural Habitat Policy, Indigenous Peoples Policy, Involuntary Resettlement Policy and Physical Cultural Resources standard

Natural Habitat: Overall, activities of the project will produce significant conservation benefits, and any potential adverse environmental impacts on human populations or environmentally important areas including forests, grasslands and other natural habitats are expected to be very limited. While there shall be no conversion or degradation of natural habitats, this policy has been triggered as a precaution to encourage the Executing Agency to

be more cautious when carrying out activities inside sensitive ecosystems such as construction work proposed for Park headquarters, park roads staff quarters, outpost/guard post, and visitor information centers.

Indigenous People: People in every valley/region in Bhutan can be considered indigenous people (IP), with almost every valley/region having distinct dialects. For example, the Jigme Singye Wangchuck National Park has two groups – the Monpas in Trongsa, and the Olep in Wangdue – who could both be considered IPs under WWF's Indigenous Peoples policy, given their distinct cultural practices and traditions. An initial assessment points out that their social and cultural identity, although distinct from dominant society, does not make them vulnerable or disadvantaged. Therefore, although this safeguard policy is triggered, a separate Indigenous Peoples Planning Framework or Indigenous People Plan is not considered to be warranted.

Involuntary Resettlement: There will be no new Protected Areas created under the project, and there will be no land acquisition or involuntary resettlement of individuals and/or families. Ecosystem restoration and improved land use and conservation planning (habitat management) may affect land use patterns of the communities. Therefore, although this safeguard policy is triggered, an involuntary resettlement plan is not considered to be warranted.

Pest Management: The Project will not support the procurement or use of pesticides or other agricultural chemicals, or lead to the increased use of such chemicals. The management framework will include guidance to this effect.

Physical Cultural Resources: The Protected Area Network in Bhutan has significant physical cultural resources, which are protected under the laws of the Government of Bhutan. These sites will remain protected, and any financing by the BFL project will ensure preservation of any such sites. Given that there may be some small civil works financed (such as eco-tourism facilities) by the project, the management framework includes the necessary environmental screening/assessment to address risks to the cultural/religious sites.

Overall BFL has been categorized a **B project**, as its potentially adverse environmental and social impacts are considered limited, site-specific, reversible and can be readily mitigated. Since the exact location of many activities to be financed by the BFL has not yet been decided, an Environment Social Management Framework (and Process Framework) was prepared (see Annex 8) to conform to WWF's Environment and Social Safeguard Integrated Policies and Procedures (SIPP).

To develop BFL ESMF the consultant organized a series of discussions with the communities of Protected Areas (PAs) and Biological Corridors (BCs) during which the perspectives and aspirations of the concerned communities were compiled. Additional Gewog (county) level consultation workshops were held in counties adjacent to PAs and BC. These community consultations were followed by discussions with relevant group of civil stakeholders including the Bhutan Ecological Society (ECS), Clean Bhutan, Loden Foundation, the Youth Development Fund (YDF), and the Royal Society for the Protection of Nature (RSPN).

Furthermore, the ESMF consultants discussed with BFL EE comprising: the Bhutan For Life development team; the Policy and Planning Division, the Conservation Division, Department of Forests and Parks Services and the management of 8 PAs and 4 BCs; all of them units of the Minister of Agriculture and Forestry. During the implementation of BFL, activity-specific mitigation plans should be prepared and disclosed to all stakeholders, including affected communities and Civil Society Organizations (CSOs) prior to initiation of the activity in question

Main findings and recommendations of the ESMF (taken from the executive summary of Annex 8**)**

In Bhutan, The National Environmental Commission (NECS) is the highest decision-making and coordinating body on all matters relating to the protection, conservation and improvement of the natural environment. Respective ministries

of the Government are the final authority for social issues that pertain to their mandate. The NECS has also delegated authority to issue environmental clearances (EC) for selected activities to technical authorities of the Dzongkhag Environment Committee. However, prior to the issuance of EC, clearances from other concerned agencies or communities may be sought and attached along with the application for EC. BFL executing entity has the responsibility to coordinate with relevant stakeholders and to seek required clearances. In order to ensure that other safeguard mechanisms as per the accredited entity safeguards taken care beyond the EC process, a tentative list safeguards responsibilities have been prepared and presented in the ESMF.

The ESMF proposes that for BFL activities that may pose an environmental impact should be managed through a process comprising Screening, Scoping, Baseline generation, Impact Assessment and Researching mitigation of impacts and preparation of Environment and Social Management Plan (ESMP). Screening, scoping and Initial Environment Examination (IEE) components of the EIA shall be applied during the design of the BFL activity(or activities to help select the siting, screening and scoping of the magnitude of the EIA in line with the Environment Assessment General Guideline published by Bhutan National Environmental Comission, supplemented by the AE safeguards

Social assessment for BFL activities that may pose an environmental impact will include identification of community groups or individual affected as a result of land use changes and restriction due to implementation of BFL project activities; specific mitigation measures to enable alternative livelihood options of the affected individuals and groups. It should also include obtaining free and prior informed consent (FPIC) from the affected parties. The ESMF contains a general list of restrictions, affected communities and recommended mitigation measure and responsibilities. However, these need to be further qualified and quantified as specific details emerge during the course of BFL project implementation.

Upon completion of the recommendations of the environmental and social assessments and obtaining all clearances and FPIC from the affected communities, the executing agency shall apply for the Environmental Clearance by filling up the IEE format for the relevant sector. The NEC or the Competent Authority, after review, will issue the environmental clearances with terms and conditions or recommend further work prior to issuance of the Environmental Clearance. The terms and conditions reflected in the environment clearance will have to be implemented as environmental and social safeguard measures.

Grievance Redress Mechanism (GRM) for BFL: Although BFL has been assessed as a “B” project, that will have minor and mostly beneficial environmental and social impacts, still the ESMF considered appropriate that BFL put in place institutional arrangements for addressing any grievances arising from the implementation of BFL activities. The GRM proposed by the ESMF includes an informal and a formal process.

- The informal process considers negotiation between disputing parties and/or with the involvement of a third party based on established customary norm of the communities.
- The formal process would involve several steps, namely (a) Receipt and register of the grievances (b) Sorting and processing grievances (c) Acknowledgment and follow-up; (d) Verification, Investigation, and Action

Compliance Monitoring The overall responsibility for implementing the ESMF and for monitoring the compliance of the Project’s environmental safeguard activities lies with the BFL Coordination unit at the MoAF, which will report to the BFL Steering Committee and inform other BFL major stakeholders as per the final BFL institutional arrangements.

The Environment and Social Safeguards Specialist stationed at the BFL Coordination unit shall provide technical support to PAs and BCs. and coordinate with the PAs and BCs in the preparation of environment assessment comprising of screening (eligibility), IEE and preparation of ESMP for specific field activities when required.

The National Counterpart for Environment and Social Safeguard at the MoAF, should collaborate with the BFL environmental and social expert to provide support to PAs and BCs in terms of environment assessment for field specific activities, preparation of ESMPs, monitoring of compliance and in reporting on overall safeguards to the BFL Board, Competent Authorities and to the NECs.

The grievances that are reported through the Grievance Redress Mechanism (GRM) should be monitored to track and assess the extent to which progress is being made to resolve them. The grievance data should also be analyzed and evaluated to make policy and/or process changes to minimize similar grievances in the future. Record should be maintained of each grievance and it resolution and BFL periodical reporting of BFL should include a section on grievance filed and grievance resolution

Monitoring at the field activity level: Self-regulatory monitoring should be adopted by the PA and BC management for the implementation of field activities that have triggered ESMP/IEE so as to check that the terms and conditions included in the environment clearances have been followed . Self-regulatory monitoring reports should be filed by PA and BC management on a monthly basis and should be available for ad-hoc inspection by BFL management, the Dzongkhag Environment Committee or the NECs.

Monitoring of compliance with country safeguard regulations will be done by the competent authority (CA) or the NECS

In order to facilitate compliance monitoring, the PA and BC, will submit an annual compliance report or as per time terms indicated in the BFL Coordination Unit which will submit to the CA or the NECS, whoever has issued the environment clearance (and the same report could be used to inform other BFL stakeholders). This compliance report will contain the number and name of the project activity for which EC has been issued; the terms and conditions mentioned in the EC and the status of implementation of these terms and conditions.

The CA or the NECS may conduct ad-hoc compliance monitoring visits to project sites to monitor compliance of the conditions specified in the EC and whether the implementation is as per existing environmental regulations and the provisions included in the Environmental and social safeguards. During such monitoring, the CA will issue recommendations or impose penalties as may be appropriate.

Capacity Building: To provide technical assistance and support the implementation of the ESMF by PAs and BCs managers as well as to support the local communities, a permanent Environmental and Social Safeguards Expert will be recruited to work at the BLF Coordination Unit. The MoAF shall appoint/designate a National Social and Environmental Safeguards Officer who will be the counterpart to the BFL ESS Expert. For informed consent to be achieved the issuance of community clearances should be based on a sound understanding of the impacts to the local environment and the communities (informed consent) before activities are implemented (prior consent). For this prior informed consent to happen, the representatives of the right holders -- mostly the Chair of CF or NWFP groups, Tshogpa and the Gup at the grassroots level --- should be trained in delivering prior informed consent. Hence the ESMF includes a capacity building and training program

Gender Mainstreaming

Design of the project has followed WWF's gender policy and principles, which are in line with the GCF Gender Policy's six fundamental principles. The project proponents have committed to designing a gender-responsive approach to work toward achieving gender equality in all spheres of the project. This will be pursued in a sustainable manner and contribute to more efficient protected areas system and associated biodiversity management as well as generating climate change adaptation and mitigation benefits. Bhutan does not have a specific gender policy, but both the National Commission for Women and Children (NCWC) and the Gross National Happiness Commission (GNHC) follow the provisions in the Constitution of Bhutan (2008), particularly Articles 7 and 9, which relate to the Fundamental Rights and the Principles of State Policy, respectively. Bhutan is also a signatory to the "Convention on the Elimination of Discrimination against Women" (CEDAW) and the "Convention on the Rights of the Child" (CRC). In addition, both the 10th Five-Year-Plan (2008-2013) and the 11th Five-Year-Plan include requirements for Bhutan's

development to effectively mainstream gender. The current Five-Year-Plan in particular includes the creation of a gender-responsive legal environment through the development of a Gender Equality Law.

Bhutan's commitment to promoting gender equality is included in two publications, namely *Bhutan Gender Equality Diagnostic of Selected Sectors* and *Gender Mainstreaming Guidelines*, both published in 2014. The *Bhutan Gender Equality Diagnostic of Selected Sectors* publication provides a general overview of gender issues and dimensions encountered within a number of sectors, namely the environment, energy, renewable natural resources and community forestry. However, knowledge gaps remain on the gender dimensions in these sectors. The BFL project area is vast and includes a wide range of communities within many different regions of the country, and these communities have different traditions, culture, gender dynamics, access, control and benefits over resources between men and women. Current estimates are that approximately 55% of those living within the country's PAs are women or girls due to prevalent work and migration patterns.

Consequently, a complete gender assessment in the project area was commissioned to an independent consulting, (see Annex 9). The assessment found that women are playing active roles in some of the established community forests within the project area. However, they are more burdened than men, as they are also responsible for household chores on top of participating in management of the local natural resources. Although there is significant representation of women in local resource management institutions, they do not often voice their opinions, as the decision making patterns of these institutions tend to be dominated by men. Therefore, the assessment recommends a strong emphasis on empowerment of women as part of the initiative, including targeted gender consultations throughout the project life. These recommendations have been factored into the design of project activities, and further mainstreaming will be ensured through the annual programming cycle of the BFL project. The final gender assessment report can be found in Annex 9.

Combined with existing gender-related documentation as mentioned above, the BFL project will serve as a robust repository of information, lessons learned and capacity building at the nexus of gender and the environment, climate change, community forestry, biodiversity and PAs management in Bhutan, especially since the project will be implemented over a 14-year period. Efforts will be made to see that other projects at the national and international level benefit from the experiences and lessons learned from the BFL project.

F.4. Financial Management and Procurement

WWF has comprehensive financial management and procurement policies, standards, and guidelines in place. The financial management and procurement of this project will be guided by these policies and guidelines as outlined in the *WWF Financial Management Guide* and *WWF Procurement Policy and Procedures* (these documents are available upon request).

All projects are audited following the WWF financial rules and regulations noted above and applicable audit guidelines and policies. A scheduled audit is used to determine whether the funds transferred to the executing entity were used for the appropriate purpose and in accordance with the approved project work plan and budget. A scheduled audit can consist of a financial audit or an internal control audit. The project will be subject to the audit guidelines as per the *WWF Audit - Organization, Policies and Procedures* (this document is available upon request).

BFL will follow WWF's financial reporting templates and formats which are in line with internationally recognized reporting standards.

The executing entity is required to implement the project in compliance with WWF rules and regulations, policies and procedures. In legal terms, this is ensured through the grant agreement signed between WWF-US (as the GCF

Accredited International Implementing Entity) and the executing entity. The GCF Project Document, which will include a detailed project budget and procurement plan, forms an integral and binding part of the grant agreement and governs the use of the funds.

Both the grant agreement and the project document require compliance. Prior to signature of the project document, the executing entity will undergo assessment by WWF Financial and Program Operations staff to assess whether the specific resources of the Executing Entity devoted to this project in terms of capacities, policies, procedures, and controls meet WWF's financial management and procurement standards.

Based on the assessment, WWF will evaluate compliance risks and work with the executing entity to identify and implement remedial measures when necessary. WWF will also develop a risk mitigation and monitoring plan to address any questions about the executing entity's ability to ensure proper use and financial management of GCF funds during any stage of the grant agreement.

During project implementation, WWF will provide oversight and quality assurance in accordance with its policies and procedures, and any additional specific requirements contained in the Grant Agreement. This may include, but is not limited to, monitoring missions, spot checks, facilitation and participation in project steering committee meetings, quarterly progress and annual implementation reviews, and audits at project level or at executing entity level on the resources received from WWF.

All GCF resources identified in the grant agreement will be provided to the executing entity. WWF advances cash funds on a quarterly basis to the executing entity for the implementation of agreed and approved project activities, in accordance with WWF standard financial management policies. The executing entity reports back expenditure via a financial report on a quarterly basis to WWF.

G.1. Risk Assessment Summary

Overall, the BFL project risks are moderate, as the project aims to upgrade the management of Bhutan's already-existing network of protected areas. We do not anticipate large-scale, significant, or irreversible adverse impacts associated with this project. The major concerns and mitigation strategies are included below. Additionally, the BFL environmental and social assessment, as well as management plan (including gender mainstreaming considerations), are discussed in section F.3 above and in more detail in Annexes 8 and 9.

G.2. Risk Factors and Mitigation Measures

Selected Risk Factor 1: Financial

Description	Risk category	Level of impact	Probability of risk occurring
1. Exchange rate fluctuations / L 2. Under funding / M 3. Under expenditure / M 4. Inflation and cost overruns/ M	Financial	Low (<5% of project value)	Medium

Mitigation Measure(s)

1. Bhutan's currency is pegged one to one to India's rupee, and India has only moderate fluctuations against major reserve currencies, which is expected to continue in the future. BFL will follow international fiduciary standards, maintaining funds in a dollar denominated account, and balances in local currency will not exceed estimated quarterly expenditures.
2. BFL's multi-party, single closing approach helps to ensure the security of external funding. Also, of government is committed to its funding, which will be tracked annually by BFL.
3. Disbursement will be subject to close monitoring of on-the-ground progress. The project duration, 14 years, allows for mid-course adjustments to the timing of activities without jeopardizing delivery of final results.
4. Use of best practices in BFL management, contingency funding, and measures to ensure sound financial management of non-disbursed funds.

See additional detail and discussion of the financial risks in Annex 5. *The proposed mitigation measures will lower the probability of such risks from medium to low*.

Selected Risk Factor 2: Technical and Operational

Description	Risk category	Level of impact	Probability of risk occurring
1. Falling behind schedule 2. Under delivery 3. Unexpected technical or operational surprises	Technical and operational	Medium (5.1-20% of project value)	Medium

Mitigation Measure(s)

- Strong capacity building and training component built into the BFL project
- Strong real-time monitoring with feedback built into the project design
- The project duration, 14 years, and the fact that it encompasses discrete improvements in over a dozen PAs, allows for reprogramming annual work plans without jeopardizing timely results

Proposed mitigation measures will lower the probability of risk occurring from medium to low

Selected Risk Factor 3: Environmental

Description	Risk category	Level of impact	Probability of risk occurring
1. Faster than anticipated environmental change 2. Extreme environmental events	Social and environmental	Low (<5% of project value)	Low

Mitigation Measure(s)

- Overall, the project is expected to have strongly positive net environmental impacts
- The project Environment Assessment and Mitigation Plan (see Annex 8) addresses potential environmental risks
- Strong real-time environmental monitoring and feedback is part of the BFL design

Selected Risk Factor 4: Social

Description	Risk category	Level of impact	Probability of risk occurring
1. Limited community interest in BFL activities 2. Individual or community conflict with PA management	Social and environmental	Medium (5.1-20% of project value)	Medium

Mitigation Measure(s)

- The project social assessment and mitigation plan (see Annex 8) will address expected social risks
- Strong communication, participatory and transparent consultation, including the application of Free Prior and Informed Consent (FPIC).
- The implementation phase of the project includes regular and inclusive consultations with affected populations and other stakeholders.

Proposed mitigation measures will lower the probability of this risk occurring from medium to low.

Selected Risk Factor 5: Gender Mainstreaming

Description	Risk category	Level of impact	Probability of risk occurring
Gender equity issues may arise due to points missed during consultations or project design, or weak capacity of	Social and environmental	Low (<5% of project value)	Low

Executing Entity to take pro-active measures to implement gender mainstreaming			

Mitigation Measure(s)

- A Gender Assessment is underway, and any necessary adjustments to project design based on its recommendations will be made (to be placed in Annex 9) to ensure that the project fully takes into account gender issues and the economic empowerment of women consistent with the GCF gender mainstreaming policy.
- In many rural areas of Bhutan, communities follow a matrilineal organization, and women are very active in community activities and decision making.
- Strong communication, capacity building, and training are part of the BFL design.
- The implementation phase of the project includes regular and gender inclusive consultations with affected populations and other stakeholders.

Other Potential Risks in the Horizon

NA

H.1. Logic Framework.

Please specify the logic framework in accordance with the GCF's Performance Measurement Framework under the Results Management Framework.

H.1.1. Paradigm Shift Objectives and Impacts at the Fund level[30]

Paradigm shift objectives	
Shift to low-emission sustainable development pathways	Supporting the conservation of 51% of the country's territory, BFL will make a transformational contribution to Bhutan's low-carbon, sustainable development path. It will achieve this by ensuring the long-term conservation and growth of the country's largest carbon sinks: Protected Areas' forests. Beyond Bhutan, BFL will provide a model to support similar paradigm shifts in other countries around the world.
Increased climate-resilience sustainable development	BFL will increase opportunities for climate resilience sustainable development among Bhutan rural population living inside and in the vicinity of PAs. It will achieve this through an array of activities, including information, capacity building and investments to disseminate usable and timely climate change information, reduce human-wildlife conflicts,capacity building on climate adaptive farming practices, and through the creation of new jobs in nature-based tourism.

Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions**
				Mid-term (if applicable)	Final	
Fund-level impacts						
M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks	Tons of carbon dioxide equivalent (TCO_2eq) sequestered	Standard tier 1 and 2 REDD+ MoV.	206.2 M tons of CO_2eq (2010 estimate)	Additional 12.5 million tons of CO_2eq	Additional 35.1 million tons of CO_2eq	When country-wide REDD+ MRV is in place, BFL MoV will adopt it
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	Number of direct and indirect beneficiaries: total, by gender, and as % of the country pop. Household survey to determine how the HH has benefit from BFL (e.g. what BFL activities were preferred by the HH, and elicit measures of how they have helped improve HH livelihood and adaptation to climate change	Periodic household surveys and reports	0	--	- Approx. 35,000 people living in PAs (55% female) major beneficiaries - Approx. 110,000 people living in rural areas near PAs (55% female) significant beneficiaries	Because BFL is a 14 years program, it has several intermediate targets other than mid-term

[30] Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that some indicators are under refinement):
http://www.gcfund.org/fileadmin/00_customer/documents/Operations/5.3_Initial_PMF.pdf

A4.0 Improved resilience of ecosystems and ecosystem services	Coverage/ scale of ecosystem and ES protected/ strengthened in response to climate variability and change	Annual reports periodical surveys and species census Bhutan METT+ [31] assessment	METT+ assessment of Bhutan's PAS as of 2016	1,975,000 ha. of PAS managed to high sustainability standards	1,975,000 ha. of PAS managed to high sustainability standards	Because BFL is a 14 years program, it has several intermediate targets other than mid-term

H.1.2.a Outcomes, (Goals) at Project/Programme level

Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
Project/programme Outcomes (Goals)	**Outcomes (Goals) that contribute to Fund-level impacts**					
M9.0 Improved management of land or forest areas contributing to emissions reductions	Tons of carbon dioxide equivalent (TCO_2eq) sequestered Hectares of land or forests areas under sustainable management or improved protection and management.	Standard tier 1 and 2 REDD+ MoV. Bhutan PAs' METT+ assessment reports	206.2 M tons of CO2eq (2010 estimate)	Additional 12.5 million tons of CO_2eq	Additional 35.1 million tons of CO_2eq	When country-wide REDD+ MRV is in place BFL MoV will adopt it
A6.0 Increased generation and use of climate information in decision-making	Number of plans using data and recommendations from climate change analysis	PA/BC management plans National Five Year Plans Supported Business Plans	0	--	10 2 70	Because BFL is a 14 years program it has several intermediate targets other than mid-term
A8.0 Strengthened awareness of climate threats and risk-reduction processes	Percent of target population aware of the potential impacts of climate change and range of possible responses	Periodic household surveys and reports	0	--	- 80% of all households within PAs	Because BFL is a 14 years program it has several intermediate targets other than mid-term
Socio-economic wellbeing of communities in and in the vicinity of PA system enhanced by climate informed natural resource management. Communities within PA system continue to live in harmony with nature	Number of direct and indirect beneficiaries: total, by gender, and as % of the country population Household survey to determine how the	Periodic household surveys and reports	0	--	- Approx. 35,000 people living in PAs (55% female) - Approx. 110,000 people living	Because BFL is a 14 years program it has several intermediate targets other than mid-term

[31] METT+ Management Effectiveness Tracking Tool, a M&E tool for PAs designed by WWF

	HH has benefit from BFL (e.g. what BFL activities were preferred by the HH, and elicit measures of how they have helped improve HH livelihood and adaptation to climate change				in rural areas near PAs	
Maintain stable and thriving populations of key species contributing toward national and global biodiversity goals. Maintain habitat and ecosystem diversity and contiguity.	Population of tigers in the wild Population of snow leopards in the wild	Periodical surveys of tigers Periodical surveys of snow leopards	103 (in 2015) 96 (in 2016)	113 96	123 96	

H.1.2.b Outputs (Milestones) at Project/Programme level

Outputs (milestones) that contribute to outcomes	Indicator	Reporting Frequency	Baseline (& year)	Cumulative Target (& year)	Means of Verification
1. From Year 2 onwards, forest quality and extent (at 1.1 million hectares) maintained within the PA network, thereby sequestering 240 million tons of carbon dioxide equivalent and increasing climate resilience through forest ecosystem conservation	Tons of carbon dioxide equivalent (TCO2eq)	Every 2 years	206.2 M tons of CO_2eq (2010 estimate	Additional 35.1 million tons of CO_2eq (Year 14,end of BFL)	Standard tier 1 and 2 REDD+ MoV. When country-wide REDD+ MRV is in place, BFL MoV will adopt it
2. By Year 4, degraded lands within the PA network are brought under climate-smart reforestation mechanisms to enhance the carbon stock (above and below ground) and increase climate resiliency	Hectares of degraded land under restoration	Every 2 years	0 (2017)	3,000 hectares (Year 14,end of BFL)	Standard tier 1 and 2 REDD+ MoV. When country-wide REDD+ MRV is in place BFL MoV will adopt it
3. By Year 8, all communities in PAs value, support, and engage in conservation initiatives including waste management	# of people voluntarily involved in conservation activities (sex-disaggregated data)	Every year, starting in Year 2	X individuals (2017)	X individuals (Year 8)	Annual Reports
4. From Year 7 onwards, all communities living within PAs use traditional knowledge, best available science and technologies to increase their climate and disaster resilience	# of HHs adopting climate adaptation mechanisms (sex-disaggregated data of beneficiaries)	Every year, starting in Year 2	X number of HHs (2017)	X HHs (Year 7)	Annual Reports

5. By Year 4, 80% of all households within PAs benefit from reduced human wildlife conflict as a result of adoption of appropriate policies, technologies and systems	# of HWC incidences when wildlife population is stable or increasing	Every 5 years, starting in Year 2	X (2017)	X (Year 14) (not cumulative)	Annual Reports
6. By Year 9, 80% of all households within PAs and neighboring areas have increased access to nature-based employment and income-generating opportunities including eco-tourism	# of HHs with increased income due to BFL activities (sex-disaggregated data of beneficiaries)	Every 2 years, starting in Year 2	X number of HHs (2017)	X number of HHs (Year 9)	Annual Reports
7. By Year 6, populations of tigers and snow leopards-two flagship species that represent major ecosystems-are increased or stable (tigers increased by at least 20% over 2015 levels, and snow leopards stable at 2016 levels)	Population of tigers in the wild	Every 5 years, starting in 2021 (b/c tiger survey done in 2020)	103 (2015)	123 (Year 6)	Survey report
	Population of snow leopards in the wild	Every 5 years, starting in 2022 (b/c snow leopard survey done in 2021)	96 (2016)	96 (Year 7)	Survey report
Outputs (milestones) that contribute to outcomes	**Indicator**	**Reporting Frequency**	**Baseline (& year)**	**Cumulative Target (& year)**	**Means of Verification**
8. By Year 6, information on the conservation status of 10 other high-profile, lesser known, endangered or endemic flora and fauna species established, and five climate-smart species conservation plans developed (in addition to those for tigers and snow leopards)	Number of conservation plans	Every 5 years	0 (Year 1)	10 (Year 14)	Conservation plans
9. By Year 2, Zero Poaching Framework and SMART/effective patrolling instituted in all PAs/BCs to prevent, combat, and monitor poaching, wildlife trade, and other illegal activities	Number of parks implementing SMART patrolling	Every year	1 (Year 1)	10 (Year 5)	Annual reports
10. By Year 6, at least one high conservation, economically and culturally valued stretch of river linked to a PA is designated as free-flowing and effectively managed for conservation and climate-resilience	Improved or stable river basin health as measured by River Basin Health Scorecard	Every 5 years, starting in Year 1	River Basin Health Scorecard score (Year 1)	River Basin Health Scorecard score (Year 6, Year 11)	River Basin Scorecard
11. By Year 6, key high-biodiversity and climate resilience value habitats (and areas that connect them) are under improved management (forests, lowland grasslands, and alpine meadows)	Hectares of habitat under improved management	Every 10 years, starting in 7	X (2017)	X (2023 or 2027) (not cumulative)	Reports & maps
12. By Year 7, National Five Year Plans and all PA management plans incorporate	Number of Plans incorporating natural capital valuation and	Every 5 years starting Year 2	0	10 PAs management plan, one BC	

natural capital valuation, key ecosystem services provided by PAs/BCs, and salient climate change risks and mitigation/adaptation strategies	key ecosystem services			plan and one national five year plan (by year 7)	
13. By Year 7, watershed conditions in 10 critical catchments within the protected area system improved for climate resilience, wildlife and socio-economic development	Number of watersheds with management plan	Every 2 years, starting in year 1	0 (Year 1)	10 (by year 7)	
14. By Year 6, the PA network is clearly demarcated, by Year 2 has climate-smart management plans, and by Year 2 has a system to track management effectiveness	Bhutan METT+ management effectiveness scores (1 for each of the 10 PAs, 1 for all BCs, and 1 for Royal Botanical Park)	Every five years, starting in Year 2	Bhutan State of Parks (2016)	Bhutan state of Parks (2030) – At least 80% cumulative score against METT+ indicators	Bhutan METT+ tracking reports from each PA

Outputs (milestones) that contribute to outcomes	**Indicator**	**Reporting Frequency**	**Baseline (& year)**	**Cumulative Target (& year)**	**Means of Verification**
15. By Year 5, PAs/BCs are equipped with adequate and competent staff, and by Year 10, all PAs/BCs are equipped with essential equipment and infrastructure	# of competent full-time PA network staff in place	Every year, starting in Year 1	380 (2016)	493 (Year 1) 556 (Year 2) 613 (Year 3) 673 (Year 4) 722 (Year 5)	Annual report
16. By Year 8, new sources of long-term sustainable financing for Bhutan's PAS have been developed, approved by the RGoB, implemented, and are producing funding that is flowing to the PAS	Increase Government funding level of PAS	Annually	3.4 M dollars per year (2016)[32]	4.7 M dollars per year by Year 5 5.2 M dollars per year by Year 8 5.9 M dollars per year by Year 107.1 M dollars per year by Year 14	Government budgets

[32] Comprised of US$ 2.9 M per year of central budget allocation plus US$ 0.5 M per year from the Bhutan Trust Fund for Environmental Conservation. These figures are all in 2017 dollars, so in years 5, 8, 10 and 14, the target values for those years will need to be adjusted for actual inflation since 2017.

H.1.2. c BFL Activities
(A more detailed list of 80+ activities and costs per activity is provided in Annex 5b

(Major) Activities	Description	Inputs	Description
1.1 Strengthen and update information management and monitoring systems to detect forest cover changes, and ecological responses of forests and other systems to impacts of climate change	Update and improve monitoring systems and information management on forest cover and ecological changes as responses to climate change to enhance early management measures to prevent forest loss and degradation	1.1.1: Every five years (from Year 1 onwards), conduct biodiversity inventory surveys, and every ten years (next in Year 7), conduct the National Forestry Inventory in PAs and BCs (includes strengthening and updating information management and monitoring systems to detect forest cover changes, climate change and ecological responses of forests and other systems to its impacts, and land cover mapping over time)	Operating budget to implement National Forestry Monitoring of 1200 monitoring plots and improve monitoring systems and reporting
1.2 Promote rural alternative energy technologies such as biogas and household solar system for communities living within PAs/BCs	Promote and provide initial investment for alternative energy technologies to communities in PAs/BCs to increase climate change mitigation and community resilience	1.2.1: From Year 2 to Year 6 (affecting 2% of the population living within PAs/BCs each year), identify priority sites for design, and implement rural alternative energies such as biogas and solar technologies for 10% of the population living within PAs/BCs	Provide technological equipment and training to 700 households
2.1 Implement climate smart restoration of the degraded land areas within protected areas system	Enhance ecosystem resilience to climate change through targeted restoration investments and build capacities on sustainable forest management practices in communities in PAs/BCs	2.1.1: Every ten years (starting in Year 1), field-truth degraded land areas within the PA network 2.1.2: Every year (starting in Year 4), implement climate-smart restoration in the mapped land areas 2.1.3: Every five years (starting in Year 1), incorporate sustainable and climate-resilient forest management practices (community forest management, rural timber suppliers, NWFPs, grazing) into PAs/BC management plans and communities training (see milestone 3 for related activities)	Operating budget for planning and implementation of active restoration activities Operating budget for participatory planning and training on climate-resilient forest management practices
3.1. Raise awareness, and build capacity of local communities to mobilize them for sustainable and climate-resilient resource management practices, implement community-based climate adaptation plans and as citizen scientists	Build capacities and awareness of communities as citizen scientists and on sustainable land use and resource management practices and provide support for their implementation in pilot communities	3.1.1: Every year (starting in Year 2), train and mobilize youth from PA communities as citizen scientists and volunteer groups in all PAs/BCs 3.1.2: Every four years (starting in Year 3), build local stewardship of park resources and mobilize communities for sustainable and climate-resilient resource management practices (community forest management, rural timber suppliers, grazing) in PAs/BCs 3.1.3: Every year (starting in Year 1), conduct conservation awareness and education programs in all PAs/BCs	Training for citizen scientists and volunteer groups Training on sustainable land use practices and provide implementation support (e.g. tools, improved varieties) Development of communications material, training of non-formal educational trainers and community capacity building
3.2 Engage local communities in PA management and provide local alternative employment	Engage communities and build capacity in PA planning and management activities and provide alternative local income	3.2.1: Every year (starting in Year 1), involve and engage local communities in the planning and decision-making of PAs 3.2.2: Every year (starting in Year 1), all PAs/BCs implement effective waste management programs based on existing	Conservation awards program Waste management programs (advocacy,

opportunities related to park management	opportunities related to PA management	regulation and waste management frameworks 3.2.3: Every year (starting in Year 1), provide local employment opportunities to local communities in activities related to park management (informants, local guides, cooks, campsite managers)	basic infrastructure, clean-up campaigns) Training on basic park management knowledge (informants, park service, visitor service, surveys etc.)
4.1 Conduct community-based Climate Vulnerability and Capacity Assessment (CVCA) and implement ecosystem-based adaptation and climate-smart solutions based on CVCA results and plan priorities	Conduct CVCAs, develop adaptation plans for communities in PAs and BCs and implement selected demonstration projects on climate-smart agriculture and disaster risk reduction in critical watersheds	4.1.1: Every 10 years (starting in Year 2), conduct community-based Climate Vulnerability and Capacity Assessment (CVCA) and surveys of human responses to climate change, and develop adaptation plans for communities in all PAs/BCs 4.1.2: From Year 2 to Year 7 (for five villages in Year 2, and six villages per year from Year 3 to Year 7), based on CVCA results, implement ecosystem-based adaptation and climate-smart, organic agriculture approaches and technologies, in priority demonstration sites in critical watersheds (representing 10% of the population living within PAs/BCs) (This relates to Activity 12.3) 4.1.3: From Year 2 to Year 7 (for five villages in Year 2, and six villages per year from Year 3 to Year 7), based on CVCA results, design and implement stormwater management, disaster risk reduction, preparedness, and response measures in priority demonstration sites in critical watersheds (representing 10% of the population living within PAs/BCs) (This relates to Activity 12.3) 4.1.4: Every ten years (next in Year 2), develop, raise awareness, and build capacity to implement community-based climate adaptation plans and green recovery and reconstruction (This relates to Activity 12.3)	Training of park staff Operating cost for community consultations and interviews Consultancy to compile results and facilitate the development of the adaptation plans, including training plans Equipment, training and inputs for 70 demonstration projects Capacity development to implement community-based climate adaptation plans and green recovery and reconstruction, including watershed management
4.2 Document, revive where necessary and promote continued use of traditional/indigenous systems related to conservation and climate resilience	Study and promote traditional land use schemes and production systems that show the potential to enhance climate resilience of communities and reduce human pressures on vulnerable ecosystems	4.2.1: Document (every four years; next in Year 1), revive where necessary and promote (every four years; next in Year 5) continued use of traditional/indigenous systems related to conservation and climate resilience	Operating budget to document traditional/indigenous systems
5.1 Reduce human wildlife conflict in and around protected areas through adoption of appropriate policies, technologies and systems to enhance community resilience	Study, design and promote mitigation measures to reduce human wildlife conflict in and around protected areas and reduce related adverse impacts on wildlife and community wellbeing	5.1.1: Every five years (next in Year 1), conduct nationwide research studies to increase understanding of the causes of human wildlife conflict (including conflicts arising from human responses to climate change) for specific PAs/BCs and the effectiveness of various interventions, and assess and map HWC hotspots 5.1.2: Every five years (next in Year 1), update the Human Wildlife Conflict Mitigation	Consultancies, surveys, consultations and maps to increase understanding of human wildlife conflict Implementation of mitigation measures in 20 conflict hotspots Capacity building of community leaders and provision of equipment

		Strategy and propose amendments for relevant policies 5.1.3: By Year 2, implement cost-effective and innovative human wildlife conflict mitigation mechanisms such as alternative crops, rainwater harvesting, habitat enrichment, and biological barriers within PAs/BCs and buffer zones 5.1.4: Build capacity for (every two years; next in Year 2) and equip (every four years; next in Year 2) Gewog Environment Conservation Committees (GECCs) to combat human wildlife conflict 5.1.5: From Year 2 to Year 6, install appropriate physical barriers in human wildlife conflict hotspots within PAs/BCs and buffer zones 5.1.6: Every five years (next in Year 3), strengthen and expand community-based crop and livestock insurance schemes for human wildlife conflict in PAs/BCs and buffer zones	to combat human wildlife conflicts
6.1 Promote ecotourism, sustainable harvesting, local processing of select commercially viable NWFPs, and nature based local enterprises to enhance community resilience to climate change impacts through alternative income generation	Study, promote, build capacities and provide start-up investment for alternative income schemes based on ecotourism, sustainable extraction and value adding processing of viable and climate resilient NWFPs and other nature based enterprises to enhance community resilience	6.1.1: Every five years (next in Year 1), develop ecotourism strategy and recommend policies that promote nature-based tourism and enterprises in the PAs, and buy-in from tour operators 6.1.2: By Year 2, create ecotourism and nature-based business models for all PAs based on sound market assessments, conservation gains, planning, and multi-stakeholder engagement 6.1.3: From Year 4 to Year 9, implement ten ecotourism enterprises in partnership with the private sector and local communities 6.1.4: From Year 4 to Year 10, design and develop eco-tourism infrastructure (treks and trails) in six PAs, and expand such infrastructure in the other four PAs 6.1.5: From Year 3 to Year 7 (at the rate of six implemented per year), implement 30 nature-based local enterprises in PAs/BCs (focusing on unique selling points of individual PAs/BCs) 6.1.6: From Year 1 to Year 5, build capacity of local communities on entrepreneurial skills, marketing, and financial management 6.1.7: By Year 1, conduct commercial viability, climate-resilience, and sustainability assessment of NWFPs inside PAs/BCs 6.1.8: From Year 2 to Year 8, implement sustainable harvesting and local processing of selected commercially important NWFPs	Consultancies for strategy development, market analysis, business planning and joint ventures Construction of eco-tourism infrastructure (e.g. trails, wildlife viewing facilities) Capacity building of communities (general entrepreneurial skills, hospitality, customer service, guides, sanitation etc.) Consultancy for guidelines for 5 commercially viable new NWFPs Sustainable harvesting operational plans for communities (including benefit sharing) Capacity building of government staff on CITES enforcement and trade regulations Capacity building for communities on sustainable harvesting, marketing, local processing Input support (basic infrastructure, equipment, production inputs, on demand)

			Operating cost for business development and negotiations
7.1 Develop climate-smart species conservation plans (including the human responses to climate change that impact these species) based on assessments of population, behavior, habitat and climate vulnerability	Conduct comprehensive assessments of high-profile species to develop conducive and climate-smart conservation plans that address direct and indirect pressures and enhance resilience of existing populations	7.1.1: Every five years, conduct population estimates for tigers (next in Year 4) and snow leopards (next in Year 5) 7.1.2: Every five years, conduct prey-based assessments for tigers (next in Year 4) and snow leopards (next in Year 5) 7.1.3: Every two years (next in Year 1) for tigers and snow leopards, assess dispersal, territory, home range size, and (every ten years, next in Year 1) climate vulnerability using habitat modeling, and assess viable populations in relation to area and prey 7.1.4: Every five years, develop climate-smart species conservation plans (including the human responses to climate change that impact these species) for tigers (next in Year 5) and snow leopards (next in Year 1)	Equipment and operating budget for population and prey assessments Radiotelemetry Genetic study including capacity building Tiger and snow leopard climate vulnerability assessments Operating budget for conservation plan development
8.1 Assess the conservation status of ten endangered or endemic flora and fauna species and develop climate-smart conservation plans for five of them	Improve the data availability and knowledge of lesser known important and endangered species to develop targeted and climate-smart conservation plans	8.1.1: From Year 1 to Year 5 (at the rate of two surveys per year), design and conduct surveys for ten other high-profile, lesser known, endangered or endemic flora and fauna species, groups, or families of species 8.1.2: From Year 2 to Year 5, document and list conservation status of ten other high-profile, lesser known, endangered or endemic flora and fauna species, and update species list 8.1.3: From Year 2 to Year 7, develop climate-smart species conservation plans for five other high-profile, lesser known, endangered or endemic flora and fauna species	Population estimates for elephant, golden langur, takin, rufous-necked hornbill, musk deer Survey for herpetofauna, invertebrates, and endemic floral species Status of white-bellied heron, Himalayan black bear, mahseer Operating costs for conservation plan development
9.1 Implement SMART patrolling in all PAs/BCs, and strengthen poaching and illegal wildlife trade enforcement agencies, inter-agency cooperation, informant networks, and bilateral cooperation	Strengthen capacities at the local and national level to combat poaching and illegal wildlife trade and reduce human pressures on wildlife populations	9.1.1: Every two years (next in Year 2), build capacity of enforcement agencies including customs, postal, police, and Green Bench under the judiciary system 9.1.2: Every year (starting in Year 2), implement inter-agency cooperation mechanism across enforcement and partner agencies 9.1.3: Every year (starting in Year 3), strengthen and expand informant network and communication systems 9.1.4: Every year (starting in Year 1), strengthen bilateral cooperation and information-sharing to combat transboundary and regional wildlife trade 9.1.5: By Year 2, develop Zero Poaching Framework for Bhutan (and update every 5 years) 9.1.6: Train (every two years, starting in Year 3) and equip (every five years, next in Year 4) park staff on detection, effective anti-	Capacity building of enforcement agencies on illegal wildlife trade issues Organization and facilitation of annual coordination meetings of task force members Training of informant trainers, staff and local informants (detection, intelligence, CSI, reporting) and provision of informant basic equipment Consultancy to design Zero Poaching Framework Software, operating budget, training and equipment for SMART patrolling in all PAs/BCs

		poaching operations, and crime scene investigation Activity 9.7: Every year (starting in Year 1), implement SMART patrolling in all PAs/BCs Activity 9.8: In Year 1, conduct technology feasibility assessment, and each year (starting in Year 2) ensure appropriate technology to combat poaching and other illegal activities in PAs is in place	Consultancy and provision of technology packages (et. UAVs, real-time camera traps, CCTV cameras, metal detectors etc.)
10.1 Conduct mapping and analysis to track the rate and extent of habitat loss due to climate change and other anthropogenic causes, assess functionality of BCs (including their future feasibility under climate change), inventory of invasive species in PAs/BCs and designate high biodiversity habitats, degraded lands, and climate refugia	Improve the knowledge and data availability on habitat changes, impacts of climate change and invasive species to provide for informed designation of biological corridors and climate refugia	10.1.1: By Year 2, conduct nationwide mapping and analysis, and designate high biodiversity habitats, degraded lands, and climate refugia 10.1.2: By Year 3, conduct functionality studies of BCs (including their future feasibility under climate change) and delineate them 10.1.3: Every three years (starting in Year 1), conduct inventory of invasive species in PAs/BCs, and every year (starting in Year 2) control their spread 10.1.4: Every three years (starting in Year 3), track the rate and extent of habitat loss from habitat fragmentation and degradation due to climate change and other anthropogenic causes	Assessments, mapping and field truthing Consultancies to develop invasive species inventories and provide recommendations on control measures Equipment and operating budget for invasive species controlling based on inventory studies
10.2 Implement restoration of lowland grasslands, alpine meadows, wetlands, riparian areas, floodplains and other key wildlife habitats based on climate information to reduce climate change impacts and provide habitat for wildlife and limit impacts on human well-being and infrastructure	Increase climate change resilience of valuable ecosystems and wildlife habitat to ensure the provision of crucial ecosystem services for human well-being through targeted restoration measures	10.2.1: Every two years, based on climate change impacts information, implement restoration to enhance quality and resilience of lowland grasslands (next in Year 2) and alpine meadows (next in Year 1) 10.2.2: Every year (starting in Year 1), manage salt licks, snags and waterholes, and manage and enhance climate-resilience of wetlands and Ramsar Sites, including enrichment planting (using climate information wherever relevant) 10.2.3: Every year for smaller rivers (starting in Year 1), and every five years for big rivers (starting in Year 1), manage river banks, riparian areas and floodplains, including limiting encroachment into these critical habitats, to reduce climate change impacts and provide habitat for wildlife and limit impacts on human well-being and infrastructure	Operating budget and equipment to implement habitat restoration, enrichment planting and improved management practices
10.3 Conduct training and provide equipment to monitor and respond to forest fires	Enhance the capacity to monitor and respond to forest fires to prevent or minimize adverse impacts and deforestation	10.3.1: Conduct training every two years (starting in Year 1), and provide equipment every five years (starting in Year 1) to monitor and respond to forest fires	Community training and provision of basic equipment
10.4 Develop and apply green and climate-resilient design and construction principles in and around PAs	Pilot and promote climate resilient infrastructure with minimal ecological impact	10.4.1: By Year 1, develop green and climate-resilient design and construction principles (e.g. those that respond to increasing extreme hazards such as floods and extreme storms), and every 3 years	Consultancy to develop design and construction principles Capacity building of park managers, engineers, agencies involved

		(starting in Year 2), apply them to all infrastructure in and around PAs	
11.1 Designate a high conservation, economic and culturally valued stretch of river as free flowing and create institution and build local capacity to manage the stretch effectively reducing climate change impacts and increasing ecological and downstream community resilience	Provide for sound and climate-smart watershed protection in critical sites to enhance conservation, ensure the reliable provision of hydrological services and downstream socio-economic and resilience benefits	11.1.1: By Year 2, conduct necessary hydrological, biological, sociocultural, and economic assessments 11.1.2: By Year 3, conduct multi-stakeholder consultations within the catchment of the proposed free-flowing river 11.1.3: By Year 5, evaluate and identify protection and management mechanisms for the free-flowing river that will provide the greatest conservation and community climate resilience benefits 11.1.4: Every 3 years (starting in Year 5), build capacity of individuals and organizations who will be implementing management mechanisms for the free-flowing river 11.1.5: Every year (starting in Year 6), implement protection and management mechanisms for the free-flowing river (including stakeholder consultations) to reduce climate change impacts and increase ecological and downstream community resilience.	Consultancies to assess freshwater species distributions, migratory paths of freshwater fish, riverine habitats, climate change impacts, and social and cultural values associated with river systems Stakeholder consultations Management plans (meetings, consultations, analysis, documentation) Capacity building and awareness campaigns Riverbank protection (e.g. erosion control, Best Management Practices, nature-based flood control)
12.1 Build local capacity to implement climate-smart protection and management mechanisms for ten critical watersheds inside protected areas that will provide the greatest conservation, socio-economic, and climate resilience benefits	Provide for sound and climate-smart watershed protection in critical sites to enhance conservation, ensure the reliable provision of hydrological services and downstream socio-economic and resilience benefits	12.1.1: By Year 3, identify and prioritize ten critical watersheds within PAs for drinking water and irrigation, using the national river basin and climate change assessments, and other tools (focusing on quality, quantity, and timing of flows) 12.1.2: By Year 4, evaluate and identify protection and management mechanisms for ten critical watersheds that will provide the greatest conservation, socio-economic, and climate resilience benefits 12.1.3: From Year 5 to Year 8 (three watersheds for each of the first three years, and one in Year 8), implement climate-smart protection and management mechanisms for ten critical watersheds (including stakeholder consultations) 12.1.4: Every ten years (next in Year 2), build capacity of individuals and organizations who will be implementing climate-smart protection and management mechanisms for ten critical watersheds Activity 12.5: From Year 6 to Year 14, establish foundation for payment for ecosystem services (PES) schemes (e.g. park entry fees, water) in the protected areas	Assessments and consultations for prioritization Installation of weather stations in all PAs to improve meteorological and hydrological monitoring and data availability Implementation of participatory spatial land planning processes (including consultations, GIS, field verification) Implementation of climate smart sustainable land management practices in prioritized watersheds (BMP for soil and water conservation, agro-forestry, nature-based flood control) Livelihood improvement programs (climate-smart agriculture) Implementation of stormwater management (rainwater harvesting, irrigation channels, drinking water pipe systems)

			Capacity development Feasibility assessments and facilitation and structuring of PES agreements
13.1 Enhance knowledge on climate change and its impact on various sectors based on climate change scenario modelling, valuation of key ecosystem services and build awareness and capacity of the government, academia, and research institutions to use the tools and findings to incorporate it in the relevant plans and policies	Ensure that climate and ecosystem service data is collected regularly, analyzed, included in relevant plans and policies, and applied to decision-making in climate-sensitive sectors by the government, academia, the private sector and communities	13.1.1: By Year 2, model climate change scenarios, and predict impacts of climate change on Bhutan's biodiversity, freshwater resources and economy 13.1.2: By Year 5, conduct and update valuation of key ecosystem services and scenario planning (climate and development) in all PAs/BCs (one assessment per PA, and a single assessment across the BCs) 13.1.3: In Year 6, incorporate findings of the natural capital valuation, key ecosystem services, and climate change assessments into the 13th National Five Year Plan (for 2023-2028), and into the respective PA and BC plans 13.1.4: Every two years (starting in Year 6), build awareness and capacity of the government, academia, and research institutions to use the tools and findings (associated with the natural capital valuation, ecosystem services, and climate change assessments) for decision-making 13.1.5: Every five years (starting in Year 6), review and propose amendments on relevant existing policies based on findings of key ecosystem services valuation	Consultancy to model climate change scenarios Systematic study on impacts of climate change on biodiversity, migratory patterns, phenological changes in PAs (including mapping) Valuation studies of ecosystem services Stakeholder workshops and capacity building for government and for academia Development of education material on tools, teaching materials, workbooks Workshops for parliament members (environmental committees) Publications and policy briefs
14.1 Develop climate-smart PA and BC management plans synching with National Five Year Plan cycles	Develop climate-smart management plans that provide for adaptive and informed management based on sound scientific knowledge	14.1.1: Every five years (starting in Year 2, and synching with National Five Year Plan cycles), develop climate-smart PA and BC management plans	Conduct biodiversity inventories, socio-economic surveys and consultations for management plan development
14.2 Carry out participatory zoning and physically demarcate all PAs/BCs	Implement participatory zoning and demarcation that takes into consideration climate refugia, connectivity and ecological representation	14.2.1: By Year 6, physically demarcate all PAs/BCs, and provide ongoing maintenance 14.2.2: Every ten years (next in Year 1), carry out participatory zoning (including revisions) for each PA/BC	Workshops for participatory zoning Equipment, material and operating budget for physical demarcation
14.3 Strengthen existing information management systems, and evaluate PA/BC management effectiveness using Bhutan Management Effectiveness Tracking Tool (Bhutan METT+) approach	Strengthen capacities on data collection, analysis and information management to improve baseline knowledge and enhance effective management planning	14.3.1: Every two years (starting in Year 1), strengthen existing information management systems for improved data collection and standardized reporting 14.3.2: Every year (next in Year 1), conduct monitoring of PA programs and activities 14.3.3: Every five years (next in Year 1), evaluate PA/BC management effectiveness using Bhutan METT+ approach 14.3.4: Conduct a periodic 3-year review (first in Year 4), a midterm internal evaluation (Year 9), and a final internal evaluation (Year 14) for Bhutan for Life	Training of park staff on data collection, data analysis and software use Monitoring operating budget METT assessment 3-year review Mid-term internal evaluation Final internal evaluation

15.1 Build capacity of the PAs staff for effective protected areas management, research (including climate change and its impacts), and biodiversity monitoring	Assess the capacity needs and provide tailored capacity building to park staff and managers on topics related to climate change, biodiversity conservation, ecosystem service enhancement and effective PA management	15.1.1: Every five years (starting in 2016), conduct and institute competency-based human resources needs and training needs assessments 15.1.2: Every year (starting in Year 1), carry out capacity development programs based on the training needs assessment 15.1.3: Every year (starting in Year 1), implement staffing plan in all PAs/BCs (and achieve full staffing in all PAs/BCs by Year 5)	Capacity needs assessment Capacity development program (including e.g. climate change adaptation, visitor management, research skills, monitoring, computer skills, leadership, etc.) Implement staffing plan
15.2 Provision of staff, infrastructure, vehicles and equipment to effectively patrol the PAS and prevent illegal deforestation	Ensure that all PAs have sufficient staff, infrastructure, vehicles and equipment to ensure effective management and prevention of illegal deforestation and forest fires	15.2.1: Every year (starting in Year 1), implement infrastructure plan (including maintenance) in all PAs/BCs (and achieve full infrastructure in all PAs/BCs by Year 10) 15.2.2: Every year (starting in Year 1), procure vehicles and equipment (including maintenance) for all PAs/BCs (and achieve full vehicles and equipment in all PAs/BCs by Year 7)	Build HQ buildings, range office compounds, staff quarters, guard posts, guest houses, and visitor information centers Operating budget for maintenance of existing and new infrastructure Purchase and maintenance of 4-wheel drives, motorcycles, DCM lorries Field equipment (binoculars, boots, rain gear, sleeping bags, sleeping mats etc.) Office equipment (computers, printers, telefax, furniture, audio-visual equipment etc.) General operations (utilities, office supplies)
16.1 Development, lobbying and implementation of new sustainable financial mechanisms	Support the development and implementation of in-country financial mechanisms to ensure financial sustainability of the PA system	16.1.1 Development, lobbying and implementation of new sustainable financial mechanisms	Feasibility assessments Design of legal proposals and agreements Operating budget for consultations and political lobbying

Please note that the Major Activities are not part of Annex 5B (costs and funding details).

H.1.2. d BFL Activities to deliver on the 16 Outputs (milestones) (A more detailed list of 80+ activities and costs per activity is provided in Annex 5b)
Milestone 1. From Year 2 onwards, forest quality and extent (at 1.1 million hectares) maintained within the PA network, thereby securing the storage of 240 million tons of carbon dioxide equivalent and increasing climate resilience through forest ecosystem conservation
Activity 1.1: Every five years (from Year 1 onwards), conduct biodiversity inventory surveys, and every ten years (next in Year 7), conduct the National Forestry Inventory in PAs and BCs (includes strengthening and updating information management and monitoring systems to detect forest cover changes, climate change and ecological responses of forests and other systems to its impacts, and land cover mapping over time)
Activity 1.2: From Year 2 to Year 6 (affecting 2% of the population living within PAs/BCs each year), identify priority sites for design, and implement rural alternative energies such as biogas and solar technologies for 10% of the population living within PAs/BCs
Milestone 2. By Year 4, degraded lands within the PA network are brought under climate-smart reforestation mechanisms to enhance the carbon stock (above and below ground) and increase climate resiliency
Activity 2.1: Every ten years (starting in Year 1), field-truth degraded land areas within the PA network
Activity 2.2: Every year (starting in Year 4), implement climate-smart restoration in the mapped land areas
Activity 2.3: Every five years (starting in Year 1), incorporate sustainable and climate-resilient forest management practices (community forest management, rural timber suppliers, NWFPs, grazing) into PAs/BC management plans and communities training (see milestone 13 for related activities)
Milestone 3. By Year 8, all communities living within PAs value, support, and engage in conservation initiatives, including waste management and climate change adaptation
Activity 3.1: Every year (starting in Year 2), train and mobilize youth from PA communities as citizen scientists and volunteer groups in all PAs/BCs
Activity 3.2: Every four years (starting in Year 3), build local stewardship of park resources and mobilize communities for sustainable and climate-resilient resource management practices (community forest management, rural timber suppliers, grazing) in PAs/BCs
Activity 3.3: Every year (starting in Year 1), conduct conservation awareness and education programs in all PAs/BCs
Activity 3.4: Every year (starting in Year 1), involve and engage local communities with special emphasis to women, youth, poor and disadvantaged group in the planning and decision-making of PAs
Activity 3.5: Every year (starting in Year 1), all PAs/BCs implement effective waste management programs based on existing regulation and waste management frameworks
Activity 3.6: Every year (starting in Year 1), provide local employment opportunities to local communities with special emphasis to women, youth, poor and disadvantaged group in activities related to park management (informants, local guides, cooks, campsite managers)

Milestone 4. From Year 7 onwards, all communities living within PAs use traditional knowledge, best available science, and technologies to increase their climate and disaster resilience
Activity 4.1: Every 10 years (starting in Year 2), conduct community-based Climate Vulnerability and Capacity Assessment (CVCA) and surveys of human responses to climate change, and develop adaptation plans for communities with special emphasis to women, youth, poor and disadvantaged group in all PAs/BCs
Activity 4.2: From Year 2 to Year 7 (for five villages in Year 2, and six villages per year from Year 3 to Year 7), based on CVCA results, implement ecosystem-based adaptation and climate-smart, organic agriculture approaches and technologies, in priority demonstration sites in critical watersheds (representing 10% of the population living within PAs/BCs) (This relates to Activity 12.3)
Activity 4.3: From Year 2 to Year 7 (for five villages in Year 2, and six villages per year from Year 3 to Year 7), based on CVCA results, design and implement stormwater management, disaster risk reduction, preparedness, and response measures in priority demonstration sites in critical watersheds (representing 10% of the population living within PAs/BCs) (This relates to Activity 12.3)
Activity 4.4: Every ten years (next in Year 2), develop, raise awareness, and build capacity to implement community-based climate adaptation plans and green recovery and reconstruction (This relates to Activity 12.3)
Activity 4.5: Document (every four years; next in Year 1), revive where necessary and promote (every four years; next in Year 5) continued use of traditional/indigenous systems related to conservation and climate resilience
Milestone 5. By Year 4, 80% of all households within PAs benefit from reduced human wildlife conflict as a result of adoption of appropriate policies, technologies and systems
Activity 5.1: Every five years (next in Year 1), conduct nationwide research studies to increase understanding of the causes of human wildlife conflict (including conflicts arising from human responses to climate change) for specific PAs/BCs and the effectiveness of various interventions, and assess and map HWC hotspots
Activity 5.2: Every five years (next in Year 1), update the Human Wildlife Conflict Mitigation Strategy and propose amendments for relevant policies
Activity 5.3: By Year 2, implement cost-effective and innovative human wildlife conflict mitigation mechanisms such as alternative crops, rainwater harvesting, habitat enrichment, and biological barriers within PAs/BCs and buffer zones
Activity 5.4: Build capacity for (every two years; next in Year 2) and equip (every four years; next in Year 2) Gewog Environment Conservation Committees (GECCs) to combat human wildlife conflict
Activity 5.5: From Year 2 to Year 6, install appropriate physical barriers in human wildlife conflict hotspots within PAs/BCs and buffer zones
Activity 5.6: Every five years (next in Year 3), strengthen and expand community-based crop and livestock insurance schemes for human wildlife conflict in PAs/BCs and buffer zones
Milestone 6. By Year 9, 80% of all households within PAs have increased access to nature-based employment and income-generating opportunities including eco-tourism, enhancing their resilience to climate change
Activity 6.1: Every five years (next in Year 1), develop ecotourism strategy and recommend policies that promote nature-based tourism and enterprises in the PAs, and buy-in from tour operators

Activity 6.2: By Year 2, create ecotourism and nature-based business models for all PAs based on sound market assessments, conservation gains, planning, and multi-stakeholder engagement
Activity 6.3: From Year 4 to Year 9, implement ten ecotourism enterprises in partnership with the private sector and local communities
Activity 6.4: From Year 4 to Year 10, design and develop eco-tourism infrastructure (treks and trails) in six PAs, and expand such infrastructure in the other four PAs
Activity 6.5: From Year 3 to Year 7 (at the rate of six implemented per year), implement 30 nature-based local enterprises in PAs/BCs (focusing on unique selling points of individual PAs/BCs)
Activity 6.6: From Year 1 to Year 5, build capacity of local communities with special emphasis to women, youth, poor and disadvantaged group on entrepreneurial skills, marketing, and financial management
Activity 6.7: By Year 1, conduct commercial viability, climate-resilience, and sustainability assessment of NWFPs inside PAs/BCs
Activity 6.8: Every five years (starting in Year 2), implement sustainable harvesting and local processing of selected commercially important NWFPs
Milestone 7. By Year 6, populations of tigers and snow leopards - two flagship species that represent major ecosystems - are increased or stable (tigers increased by at least 20% over 2015 levels, and snow leopards stable with 2016 levels)
Activity 7.1: Every five years, conduct population estimates for tigers (next in Year 4) and snow leopards (next in Year 5)
Activity 7.2: Every five years, conduct prey-based assessments for tigers (next in Year 4) and snow leopards (next in Year 5)
Activity 7.3: Every two years (next in Year 1) for tigers and snow leopards, assess dispersal, territory, home range size, and (every ten years, next in Year 1) climate vulnerability using habitat modeling, and assess viable populations in relation to area and prey
Activity 7.4: Every five years, develop climate-smart species conservation plans (including the human responses to climate change that impact these species) for tigers (next in Year 5) and snow leopards (next in Year 1)
Milestone 8. By Year 6, information on the conservation status of ten other high-profile, lesser known, endangered or endemic flora and fauna species established, and five climate-smart species conservation plans developed (in addition to those for tigers and snow leopards)
Activity 8.1: From Year 1 to Year 5 (at the rate of two surveys per year), design and conduct surveys for ten other high-profile, lesser known, endangered or endemic flora and fauna species, groups, or families of species (including at least one aquatic species)
Activity 8.2: From Year 2 to Year 5, document and list conservation status of ten other high-profile, lesser known, endangered or endemic flora and fauna species (including at least one aquatic species), and update species list
Activity 8.3: From Year 2 to Year 7, develop climate-smart species conservation plans for five other high-profile, lesser known, endangered or endemic flora and fauna species

Milestone 9. By Year 2, Zero Poaching Framework and SMART/effective patrolling instituted in all PAs/BCs to prevent, combat and monitor poaching, wildlife trade, and other illegal activities
Activity 9.1: Every two years (next in Year 2), build capacity of enforcement agencies including customs, postal, police, and Green Bench under the judiciary system
Activity 9.2: Every year (starting in Year 2), implement inter-agency cooperation mechanism across enforcement and partner agencies
Activity 9.3: Every year (starting in Year 3), strengthen and expand informant network and communication systems
Activity 9.4: Every year (starting in Year 1), strengthen bilateral cooperation and information-sharing to combat transboundary and regional wildlife trade
Activity 9.5: By Year 2, develop Zero Poaching Framework for Bhutan (and update every 5 years)
Activity 9.6: Train (every two years, starting in Year 3) and equip (every five years, next in Year 4) park staff on detection, effective anti-poaching operations, and crime scene investigation
Activity 9.7: Every year (starting in Year 1), implement SMART patrolling in all PAs/BCs
Activity 9.8: In Year 1, conduct technology feasibility assessment, and each year (starting in Year 2) ensure appropriate technology to combat poaching and other illegal activities in PAs is in place
Milestone 10. By Year 6, key high biodiversity and climate resilience value habitats (and areas that connect them) are under improved management
Activity 10.1: By Year 2, conduct nationwide mapping and analysis, and designate high biodiversity habitats, degraded lands, and climate refugia
Activity 10.2: By Year 3, conduct functionality studies of BCs (including their future feasibility under climate change) and delineate them
Activity 10.3: Every three years (starting in Year 1), conduct inventory of invasive species in PAs/BCs, and every year (starting in Year 2) control their spread
Activity 10.4: Every three years (starting in Year 3), track the rate and extent of habitat loss from habitat fragmentation and degradation due to climate change and other anthropogenic causes
Activity 10.5: Every two years, based on climate change impacts information, implement restoration to enhance quality and resilience of lowland grasslands (next in Year 2) and alpine meadows (next in Year 1)
Activity 10.6: Every year (starting in Year 1), manage salt licks, snags and waterholes, and manage and enhance climate-resilience of wetlands and Ramsar Sites, including enrichment planting (using climate information wherever relevant)
Activity 10.7: Every year for smaller rivers (starting in Year 1), and every five years for big rivers (starting in Year 1), manage river banks, riparian areas and floodplains, including limiting encroachment into these critical habitats, to reduce climate change impacts and provide habitat for wildlife and limit impacts on human well-being and infrastructure
Activity 10.8: Conduct training every two years (starting in Year 1), and provide equipment every five years (starting in Year 1) to monitor and respond to forest fires

Activity 10.9: By Year 1, develop green and climate-resilient design and construction principles (e.g. those that respond to increasing extreme hazards such as floods and extreme storms), and every 3 years (starting in Year 2), apply them to all infrastructure in and around PAs
Milestone 11. By Year 6, at least one high conservation, economic and culturally valued stretch of river linked to a PA is designated as free-flowing and effectively managed to continue to provide important ecosystem services for conservation and climate-resilience of local communities
Activity 11.1: By Year 2, conduct necessary hydrological, biological, sociocultural, and economic assessments (considering freshwater species distributions, migratory paths of freshwater fish, riverine habitats, climate change impacts, and social and cultural values associated with river systems)
Activity 11.2: By Year 3, conduct multi-stakeholder consultations within the catchment of the proposed free-flowing river
Activity 11.3: By Year 5, evaluate and identify protection and management mechanisms for the free-flowing river that will provide the greatest conservation and community climate resilience benefits
Activity 11.4: Every 3 years (starting in Year 5), build capacity of individuals and organizations who will be implementing management mechanisms for the free-flowing river
Activity 11.5: Every year (starting in Year 6), implement protection and management mechanisms for the free-flowing river (including stakeholder consultations) to reduce climate change impacts and increase ecological and downstream community resilience.
Milestone 12. By Year 7, watershed conditions in ten critical catchments within the protected area network (one per PA) are improved for climate resilience, wildlife and socio-economic development
Activity 12.1: By Year 3, identify and prioritize ten critical watersheds within PAs for drinking water and irrigation using the national river basin and climate change assessments, and other tools (focusing on quality, quantity, and timing of flows) following the Kuri Chu approach and using the ADVANCE results and the other two basin assessments covered by the Department of Forests
Activity 12.2: By Year 4, evaluate and identify protection and management mechanisms for ten critical watersheds that will provide the greatest conservation, socio-economic, and climate resilience benefits
Activity 12.3: From Year 5 to Year 8 (three watersheds for each of the first three years, and one in Year 8), implement climate-smart protection and management mechanisms for ten critical watersheds (including stakeholder consultations)
Activity 12.4: Every ten years (next in Year 2), build capacity of individuals and organizations who will be implementing climate-smart protection and management mechanisms for ten critical watersheds
Activity 12.5: From Year 6 to Year 14, establish foundation for payment for ecosystem services (PES) schemes (e.g. park entry fees, water) in the protected areas
Milestone 13. By Year 7, National Five Year Plans and all PA/BC management plans incorporate natural capital valuation, key ecosystem services provided by PAs/BCs, and salient climate change risks and mitigation/adaptation strategies
Activity 13.1: By Year 2, model climate change scenarios, and predict impacts of climate change on Bhutan's biodiversity, freshwater resources and economy
Activity 13.2: By Year 5, conduct and update valuation of key ecosystem services and scenario planning (climate and development) in all PAs/BCs (one assessment per PA, and a single assessment across the BCs)

Activity 13.3: In Year 6, incorporate findings of the natural capital valuation, key ecosystem services, and climate change assessments into the 13th National Five Year Plan (for 2023-2028), and into the respective PA and BC plans
Activity 13.4: Every two years (starting in Year 6), build awareness and capacity of the government, academia, and research institutions to use the tools and findings (associated with the natural capital valuation, ecosystem services, and climate change assessments) for decision-making
Activity 13.5: Every five years (starting in Year 6), review and propose amendments on relevant existing policies based on findings of key ecosystem services valuation
Milestone 14. By Year 6 the PA network is clearly demarcated, by Year 2 has climate-smart management plans, and by Year 2 has a system to track management effectiveness
Activity 14.1: Every five years (starting in Year 2, and synching with National Five Year Plan cycles), develop climate-smart PA and BC management plans
Activity 14.2: By Year 6, physically demarcate all PAs/BCs, and provide ongoing maintenance
Activity 14.3: Every ten years (next in Year 1), carry out participatory zoning (including revisions) for each PA/BC
Activity 14.4: Every two years (starting in Year 1), strengthen existing information management systems for improved data collection and standardized reporting
Activity 14.5: Every year (next in Year 1), conduct monitoring of PA programs and activities
Activity 14.6: Every five years (next in Year 1), evaluate PA/BC management effectiveness using Bhutan METT+ approach
Activity 14.7: Conduct a periodic 3-year review (first in Year 3), a midterm internal evaluation (Year 5), and a final internal evaluation (Year 14) for Bhutan for Life
Milestone 15. By Year 5, PAs/BCs are equipped with adequate and competent staff, and by Year 10, all PAs/BCs are equipped with essential equipment and infrastructure
Activity 15.1: Every five years (starting in 2016), conduct and institute competency-based human resources needs and training needs assessments
Activity 15.2: Every year (starting in Year 1), carry out capacity development programs based on the training needs assessment
Activity 15.3: Every year (starting in Year 1), implement staffing plan in all PAs/BCs (and achieve full staffing in all PAs/BCs by Year 5)
Activity 15.4: Every year (starting in Year 1), implement infrastructure plan (including maintenance) in all PAs/BCs (and achieve full infrastructure in all PAs/BCs by Year 10)
Activity 15.5: Every year (starting in Year 1), procure vehicles and equipment (including maintenance) for all PAs/BCs (and achieve full vehicles and equipment in all PAs/BCs by Year 7)
Milestone 16. By Year 8, new sources of long-term sustainable financing for Bhutan's PAS have been developed, approved by the RGoB, implemented, and are producing funding that is flowing to the PAS
Activity 16.1: Development, lobbying and implementation of new sustainable financial mechanisms

H.2. Arrangements for Monitoring, Reporting and Evaluation

BFL progress will be closely monitored on the ground by the Royal Government of Bhutan, WWF, and third party organizations. Each protected area manager will submit activity based technical and financial reports annually to the BFL transition fund board through the project coordination unit. In addition, the BFL team will collect and analyze data to assess the impact of the program based on the set of BFL indicators with specific reference to measuring anticipated climate change mitigation and adaptation benefits.

Every five years, protected areas and biological corridor effectiveness will be evaluated using the Management Effectiveness Tracking Tool (Bhutan METT+), one of the most widely used systems to assess protected area management effectiveness around the world. The methodology is a rapid assessment based on a scorecard that includes all six elements of management identified by the International Union for the Conservation of Nature. METT+ has been adapted specifically for the context in Bhutan. In addition to these regular assessments, the Bhutan for Life initiative will undergo a periodic review of progress and results. An internal review of the initiative will be conducted in Year 3. A midterm evaluation in Year 5, and a final evaluation in Year 10 for the GCF funding will be conducted. An overall final evaluation of the initiative will be carried out in Year 14. The project will comply with all the relevant GCF policies on monitoring, reporting and evaluation arrangements.

Monitoring and results reporting on BFL progress will be facilitated by establishing a strong baseline. The 2016 evaluation of the state of Bhutan's protected areas (see Annex 10 "Bhutan State of Parks 2016") reports on the baseline situation in the country, and was conducted using METT+. Since METT+ will be used by BFL, there will be direct and clear comparisons to this report with respect to baseline and progress.

I. Supporting Documents for Funding Proposal

☒	NDA No-objection Letter
☒	Feasibility Study
☒	Integrated Financial Model that provides sensitivity analysis of critical elements (xls format, if applicable)
☒	Confirmation letter or letter of commitment for co-financing commitment (If applicable)
☒	Project/Programme Confirmation/Term Sheet (including cost/budget breakdown, disbursement schedule, etc.) – *see the Accreditation Master Agreement, Annex I*
☒	Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Plan (If applicable)
☐	Appraisal Report or Due Diligence Report with recommendations (If applicable)
☒	Evaluation Report of the baseline project (If applicable)
☒	Map indicating the location of the project/programme
☒	Timetable of project/programme implementation

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

ANNEXES IN THIS PROJECT DOCUMENT

Annex 1: References

Annex 2: NDA No-objection Letter

ANNEXES IN SEPARATE FILES

Annex 3: Environmental and Social Report Disclosure

Annex 4: Letter of commitment for co-financing

Annex 5: Cost tables, financial model, project feasibility and sensitivity analysis

Annex 6: Economic analysis

Annex 7: Project Confirmation/Term Sheet

Annex 8: Environmental and Social Impact Assessment and Management Plan

Annex 9: Gender Mainstreaming Analysis

Annex 10: Baseline – RGOB 2016 “Bhutan, State of Parks Report”

Annex 11: Map indicating the locations of the project

Annex 12: Timetable of project implementation

Annex 13: AE response to GCF secretariat review

Annex 14: Transcript of BFL consultations held with local communities

RGoB (2007) “National Forest Policy”

RGoB (2008) “Dzongkhag Population Projections 2006-2015” National Statistics Bureau

RGoB, (2011) “Second National Communication to the UNFCCC” National Environmental Commission, RGoB

RGoB, (2012) “11th Five Year Plan (2013 – 2018)”, RGoB, GNHC

RGoB (2012) “National Strategy and Action Plan for Low Carbon Development”

RGoB (2014) National Biodiversity Strategies and Action Plan, Ministry of Agriculture and Forests”

RGoB (2015) Intended Nationally Determined Contribution” RGoB,

RGoB, Ministry of Agriculture and Forests (2016) “Bhutan State of Parks 2016”. Department of Forests and Park Services, MoAF, RGoB.

RGoB (2016) “Statistical Yearbook of Bhutan 2016” Bhutan National Statistics Bureau

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RGoB - World Bank (2015) “Modernizing Weather, Water and Climate Services” A road Map for Bhutan” World Bank Group, Washington DC.

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Van Norad, h (2016) “REDD+ and Carbon Assessment Sub-Consultancy” UNDP/GEF/LDCF Project on enhancing sustainability and climate Resilience of Forest and Agricultural Landscapes and Community Livelihoods in Bhutan (Draft Report June 24th. 2016)

Vreugdenhil, D. (2003) “Modelling the Financial Needs of Protected Area Systems: An Application of the "Minimum Conservation System" Design Tool, Presentation at the Vth World Parks Congress.

World Bank (2013) “Bhutan Gender Policy Note” World Bank Group, Washington DC

World Bank (2014) “Bhutan: Country Snapshots” World Bank Group, Washington DC

World Bank (2015) “Bhutan Development Update” World Bank Group, Washington DC

World Bank (2016) “Bhutan Country Snapshot” World Bank Group, Washington DC

World Bank (2016) “Bhutan REDD Readiness. Annual Country Progress Reporting” World Bank Group, Washington DC

Annex 2: NDA No-objection Letter

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Gross National Happiness Commission

GNHC/DCD/GCF/2017/ 680.

March 17, 2017

Mr. Howard Bamsey
Executive Director
Green Climate Fund, 175 Art Center-daero
Yeonsu-gu, Incheon 22004, Republic of Korea

Sub: Funding Proposal for the GCF by WWF regarding a project on *Bhutan for Life*

Dear Mr. Bamsey

We refer to the Bhutan for Life as included in the funding proposal submitted by WWF to us on February 3, 2017.

The undersigned is the duly authorized representative of Gross National Happiness Commission, the National Designated Authority of Bhutan. Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

Bhutan for Life is a long-term, innovative and sustainable initiative; the first of its kind in Asia. Since Bhutan for Life is a priority initiative, the government of Bhutan also commits to the Government's co-financing as detailed in the funding proposal.

By communicating our no-objection, it is implied that:

a) The government of Bhutan has no-objection to the project as included in the funding proposal;
b) The project as included in the funding proposal is in conformity with Bhutan's national priorities, strategies and plans;
c) In accordance with the GCF's environmental and social safe guards, the project as included in the funding proposal is in conformity with relevant national laws and regulations;

We also confirm our national process for ascertaining no-objection to the project as included in the furding proposal has been duly followed. We acknowledge that this letter will be made publicly available on the GCF website.

Yours sincerely,

(Thinley Namgyel)
Secretary of GNHC & GCF NDA