



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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PART I: PROJECT INFORMATION

Project Title:	Manas Integrated River Basin Management Project (M-IRBM)		
Country(ies):	India and Bhutan	GEF Project ID:	10033
GEF Agency(ies):	World Wildlife Fund	GEF Agency Project ID:	G0017
Other Executing Partner(s):	India: Central Water Commission, Ministry of Water Resources, River Development and Ganga Rejuvenation, Ministry of Environment Forests and Climate Change, and Assam State Government agencies (Assam Water Resources Department (AWRD), Assam State Disaster Management Authority (ASDMA), Assam Forest Department, Bodo Territorial Council Bhutan: National Center for Hydrology and Meteorology, Ministry of Agriculture and Forests, Ministry of Home and Cultural Affairs, National Environment Commission, and Gross National Happiness Commission	Submission Date:	March 9, 2018
GEF Focal Area(s):	International Waters	Project Duration (Months)	48
Name of parent program:	N/A	Agency Fee (\$)	807,688

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in US\$)	
		GEF Project Financing	Co-financing
IW-1 Program 1 – Foster cooperation for sustainable use of transboundary water systems and economic growth.	GEFTF	3,589,725 (40%)	20,000,000
IW-1 Program 2 – Increase the Resilience and flow of Ecosystem Services in the Context of Melting High Altitude Glaciers	GEFTF	5,384,587 (60%)	30,000,000
Total Project Cost		8,974,312	50,000,000**

**Indicative; details regarding co-financing are awaited from the key Ministries of Govt of India and Departments of Govt of Assam

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To enhance resilience to climate change and sustainability of ecosystems services in the glacier-fed India-Bhutan transboundary Manas River Basin, through improved transboundary cooperation to facilitate integrated ecosystem-based river basin management						
Project Components	Financing Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
Component 1 – Strengthening institutional frameworks for	TA	Outcome 1.1 – Strengthened enabling environment (SAP, TDA, NAPs) for transboundary	Output 1.1.1 – Transboundary Diagnostic Analysis (TDA) developed, including projections on	GEFTF	2,104,697	6,050,000

improved India-Bhutan cooperation and future strategic Integrated Management of the Manas River Basin		and national strategic river basin management, through transparent and participatory process	<p>climate change impacts and vulnerability assessments</p> <p>Output 1.1.2 – Strategic Action Program (SAP) for the Manas River Basin developed, including priority actions related to disaster risk mitigation, for government consideration / adoption</p> <p>Output 1.1.3 - Existing relevant action plans at the national level strengthened / updated with recommendations from the TDA-SAP process for the management of the Manas River Basin, including strategies for financial sustainability</p>			
		Outcome 1.2 - Strengthened institutional arrangements for enhanced management of the Manas River Basin	<p>Output 1.2.1 – Enhanced institutional arrangements for the implementation of the TDA / SAP recommendations at binational and national levels (e.g. TRAMCA / national / binational inter-ministerial committees)</p> <p>Output 1.2.2 – Strengthened capacities in existing national and binational institutions on Integrated River Basin Management to implement TDA / SAP recommendations</p>			
		Outcome 1.3 – Strengthened institutional capacities and mechanisms for preparedness and response to natural hazards	<p>Output 1.3.1 – Strengthened capacity for Glacial Lake Outburst Flood (GLOF) vulnerability modeling / forecasting / mitigation strategies addressing impacts of</p>			

			<p>climate on glacial-fed river systems</p> <p>Output 1.3.2 – Strengthened capacity of stakeholders at national and subnational level on ecosystem-based adaptation and disaster risk preparedness and response</p>			
<p>Component 2– Improved basin scale information and knowledge sharing for better decision making in ecosystem-based management and risk reduction</p>	TA	<p>Outcome 2.1– Increased generation and sharing of river basin data and information (to inform better decision making per Component 1)</p> <p>Outcome 2.2 – Generated knowledge to improve planning and decision-making for improved ecosystem-based management and risk reduction</p>	<p>Output 2.1.1 -Information systems strengthened for effective data compilation and sharing, including the development of harmonized monitoring protocols</p> <p>Output 2.1.2 - Strengthened collaboration and engagement between Government, local communities and civil society for effective information sharing</p> <p>Output 2.2.1 - Hydrological modelling to establish correlation between rainfall, GLOFs, and discharges (piloting a real time data sharing program)</p> <p>Output 2.2.2- Best practices documented on GLOF vulnerability assessments, GLOF mitigation, water and sediment quality monitoring, early warning and flood forecasting</p> <p>Output 2.2.3 - Targeted research on economic analysis of Manas River Basin ecosystem services, flow dependencies, and socio economic and cultural vulnerability assessments</p>	GEFTF	1,109,392	9,000,000
<p>Component 3 – Field demonstrations</p>	TA	<p>Outcome 3.1 – Demonstration pilots for risk reduction, adaptive</p>	<p>Output 3.1.1 – Risk mitigation measures</p>	GEFTF	4,478,178	28,150,000

to test innovative resilience solutions on the ground and possible mechanisms for up-scaling in glacial basins		management, and improved resilience	<p>identified / implemented for selected glacial lakes</p> <p>Output 3.1.2 – On-the-ground adaptive management measures related to upstream watersheds, landslides, and erosion risk and sedimentation reduction, ecological treatment of flood plains and river banks¹</p> <p>Output 3.2.1 – Management plans of prioritized riparian wetlands developed / implemented through multi-stakeholder engagement</p> <p>Output 3.2.2 – Field investigations to ascertain the geomorphic scenario vis-à-vis hydrology at the stretch of Manas and old channels² where sediment clogging has occurred</p> <p>Output 3.2.3 – Approaches identified for restoring abandoned channel of Manas, e.g. decongesting the mouth (at the point of bifurcation of Manas into Beki & Manas) to restore natural conditions of the Manas river channel</p>			
Component 4 – Knowledge management and effective	TA	Outcome 4.1 – Project knowledge and lessons learned disseminated, including participation in	Output 4.1.1 – Project results and knowledge products developed and	GEFTF	854,697	4,800,000

¹ This will likely target 100 km stretch of Manas, smart agriculture for sustainability and increased resilience in at least 500 km² of the basin area with 100,000 people. Interventions could include assessments and piloting of technologically sound, ecologically sustainable and affordable green infrastructure as well as use of reclaimed lands, ponds and wetlands etc. for bank stabilization, erosion control, sediment/ boulder management; This could also include social approaches like creation of village task **forces and** implementing community managed water level monitoring mechanisms and creation of model flood resilient villages.

² Including Manas-Hakua and other tributaries like Sukhanjan, Sukhanteklai, and Kanamakra to revitalize whole 850 km² of the Manas National Park

project Monitoring and Evaluation		<p>IW:LEARN and other relevant networks and initiatives</p> <p>Outcome 4.2 – M&E to inform adaptive management</p>	<p>disseminated nationally, regionally, and to international IW community</p> <p>Output 4.1.2 – Participation in IW:LEARN conferences (at least two regional and one international conference), including GEF International Waters Conferences, and other networks and initiatives related to the Himalayan region / glacier melting topic</p> <p>Output 4.2.1 – Project monitoring (involving nodal ministries, State Departments, other stakeholders) to inform adaptive management for successful delivery of project results</p> <p>Output 4.2.2 – Project mid-term and final evaluations developed (involving nodal ministries, State Departments, other stakeholders) and disseminated, and adaptively incorporated back into project planning</p>			
Subtotal					8,546,964	48,000,000
Project Management Cost (PMC)				GEFTF	427,348	2,000,000
Total Project Cost					8,974,312	50,000,000

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
GEF Agency	WWF GEF Agency	Grant & In-kind	1,050,000
CSO	WWF India / Bhutan	In-kind	200,000
Government	India / Bhutan National and State Government	Grants & In-kind	48,750,000
Total Co-financing			50,000,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
WWF-US	GEFTF	Regional (India and Bhutan)	IW	N/A	8,974,312	807,688	9,782,000
Total GEF Resources					8,974,312	807,688	9,782,000

E. PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested? Yes ☒ No ☐ If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: \$218,000 Agency Fee: \$18,000							
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
WWF-US	GEFTF	Regional	IW	N/A	200,000	18,000	218,000
Total PPG Amount					200,000	18,000	218,000

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	1 Number of freshwater basins

PART II: PROJECT JUSTIFICATION

1. Project Description.

The Eastern Himalayas Ecoregion Complex stretches across Bhutan, Northeastern India, parts of Nepal and a small portion of the territory of Myanmar, in South Asia. This mountain range is drained by the Ganges-Brahmaputra basin, boasting mighty peaks, valuable freshwater resources, rich temperate forests, tall grasslands, savannas, alpine meadows, and a unique and rich biodiversity. Cross border protected areas dot the landscape with very notable ones being located along the Manas River on the border between Bhutan and India, which has been devastated by glacial lake outburst flooding and remains vulnerable.

The Manas River Basin is the largest in Bhutan, flowing north to south for 272 km (169 miles) in Bhutan and 104 km (65 miles) in the Indian State of Assam before joining the Brahmaputra and eventually joining the Indian Ocean. Originating at over 7,500 m (24,600 ft) in the glacial systems of the Himalayas Range to near sea-level, the river system services an extremely rich diversity of ecosystems and key wildlife including tigers and elephants, and two critical national parks in Bhutan – the Royal Manas National Park (108,370 hectares) and the Manas Wildlife

Sanctuary (391,000 hectares), which is also a recognized UNESCO World Heritage Site. The overall catchment spans 41,350 km² (15, 970 mi²), both in eastern Bhutan and northeast India.

The region's mountain indigenous communities have lived closely with nature for centuries, with many of them thriving in isolation. Their livelihoods and traditions deeply depend on natural resources, making conservation an integral part of their lives; river floodplains serve as a source of livelihoods, protein, and water. There are highly varying stages of socioeconomic development within and across these countries, with poverty being an important factor. A significant proportion of the Eastern Himalaya's rural population lives well below the poverty line, subsisting on an integrated farming system of crop agriculture, livestock rearing, and use of non-timber forest products. Development is an urgent need but is hindered by the steep slopes and narrow valleys.

The overarching threat to the entire region is climate change, especially for fragile ecosystems and poor and marginalized people. Unpredictable rainfall, changes in seasonal patterns, increases in the frequency and severity of extreme events, such as floods and droughts, and a seriously increasing risk of transboundary disasters are aggravating poverty for millions of people, lead to environmental degradation, and trigger key sources of conflict, such as migration and competition within and between states over dwindling water resources and crops. Rivers become blocked by landslides and then burst into flood, glacial lakes are ready to burst, downstream lowland rivers breach their embankments in floods, and thousands of people risk loss of life and many more loss of livelihoods.

This project represents a first joint attempt to address this increasing transboundary water risk to livelihoods, food security, life, property, and infrastructure in the rapidly changing Eastern Himalayas. The project will build trust and confidence in binational basin cooperation toward a shared vision for priority strategic actions, test pilot sub-basin measures and policies to reduce the cross-border risks, increase resilience of communities and ecosystems, and share knowledge as expressed in the 2011 Bhutan Climate Summit Ministerial Declaration to prepare for scaling up successful measures and policies as global warming worsens.

The Global Environment Problem

The rivers flowing from Bhutan into India have changed dramatically in the last decade and a half. Himalayan rivers which used to be well fed in the months of June and July now run dry. Transboundary rivers originating in the sub-Himalayan areas are also running low until stronger rainfalls produce devastating floods. These transboundary changes in flood, drought, and damaging downstream sedimentation are new and poorly understood. They follow from repeated floods that have resulted in the dumping of a huge amount of sediment and silt while destroying infrastructure. This has changed the slope of the riverbeds, making them far less steep, slowing down flow, and carving new channels. The massive sand, stone, and debris flows choke the transboundary waters and floodplains rendering them deserts infertile for subsistence agriculture, further reducing ecosystem services from the alluvial areas. While floodplains used to recover fertility in 3-5 years after large floods, now they are still infertile after 15 years. In some basins infertile floodplains stretch downstream into India more than 20 kilometers. Floods also trigger breaching of floodplain embankments.

As river flows become less regular with extremes of drought and flood, the people living downstream move away from the river into the forests and steeper land, leading to deforestation and encroachment and more soil erosion. Not only are the channels changing but the steeper land is now undergoing major changes as well. Their sources of water are no longer easily accessible. A change in Himalayan river systems has, therefore, now triggered changes in the population distribution, density, migration and occupations of the people that live beside them with increased poverty. The region is also short of energy, and reduced flows associated with droughts mean reduced hydropower operations.

Glacial Lake Overflow Floods (GLOFs), intensive cloud bursts and Landslide Dam Outburst Floods (LSDOFs) have all contributed to flooding and sedimentation in the region. A warming climate has produced GLOFs in the Pho Chhu region of Bhutan in the 1990s and the damaging LSDOF from Tsatichu Lake in 2004. Not only warming and melting per se but avalanches, earthquakes, and heavy rains may trigger the outbursts from glacial lakes and landslide dammed rivers. Of the many glacial lakes in Bhutan that continue to grow in size, recent studies have

identified 24 in Bhutan with high potential for dangerous outbursts that not only have an immediate impact on local communities, but also more long-term ecological and socio-economic impacts downstream in India that rely on the Brahmaputra River.

The biologically diverse cross border and downstream protected areas are also under severe threat of degradation from more frequent flooding. In fact, the Bhutan and India national parks straddling the Manas river suffered severe damage in recent 2016 floods with action needed to prevent catastrophic damage to the biological diversity and habitat as well as life and property downstream in the Indian state of Assam. The priority transboundary concerns involve increased flooding, droughts, and damaging sedimentation that pose serious risks to life, livelihoods, property, and globally significant biodiversity in vulnerable protected areas. Perturbations in rainfall associated with a warming and changing climate are also a shared transboundary concern accelerating glacial melting and landslides that pose risks of devastating glacial lake and landslide dam lake outbursts.

In summary, the Manas River is under multiple stressors including increased transboundary floods, droughts, and sedimentation that clog riverbeds and ruin valuable floodplain farm land with infertile deposits while destroying globally significant biodiversity and habitat, loss of life, loss of floodplain livelihoods, and loss of property / infrastructure. Additional indirect threats include increased landslides that temporarily dam rivers, glacial melt lakes increasing in size, outbursts from the previous two sources that increase risks of catastrophic floods, a changed precipitation regime that induces more frequent droughts, migration of people from settlements to steeper land accelerating deforestation, more soil erosion, deepening poverty, less access to drinking water, and reduced food security. Projected increases in droughts will also translate to less hydropower generated in an area that is already short of energy. The cumulation of all these stressors severely threaten any hope for a sustainable future for the transboundary Manas River basin and the delivery of many ecosystem services that support the socio-economic livelihoods of millions of citizens in India and Bhutan.

Root Causes and Barriers

The three most significant root causes and barriers threatening a sustainable Manas River include: 1) lack of an integrated river basin management plan for the transboundary Manas River; 2) absence of a bilateral cooperation framework for on transboundary management of Manas River basin, and; 3) significant gaps in knowledge and data to inform management of the Manas River, and how climate change will impact the high altitude glacial-fed Manas River basin.

Integrated transboundary management:

The governments of both India and Bhutan recognize the importance of river management and have taken positive steps toward strengthening existing management systems at the state and national level. Unfortunately, the impacts of climate change on the region have been significant, including less predictable seasonal monsoon rains and sustained heat waves, straining existing management systems. Additionally, the primary focus of river management for both countries tends to be for hydropower, irrigation, and reducing the risks of droughts, flooding, erosion, and landslides. Yet, each of these issues is managed by separate state and national government agencies with very little integration. Further, the complexities of transboundary river systems like the Manas River add additional layers of government management and bureaucracy in both Indian and Bhutan. Lastly, the poorly understood impacts of climate change for the region are testing the limits of each of these management units - often each with their own, and often different, management responses. The need for an integrated river basin management plan for the Manas River is a critical first step not only within both countries, but also between the two countries to ensure long-term sustainability of the transboundary river system.

Bilateral Cooperation for basin management:

The governments of India and Bhutan maintain strong cooperation across many issues along their shared border. Relevant to the transboundary Manas River includes the 2011 Climate Summit for a Living Himalayas, a high-level meeting that brought together leaders from Bangladesh, Bhutan, India, and Nepal, to identify key issues and

priorities on climate change adaptation in the eastern Himalayas. There are also several ongoing bilateral dialogues, such as the Indo-Bhutan Track II Dialogue, a biannual bilateral meeting among senior officials and heads of state of each country to discuss a broad range of topics that has included hydropower development, economic issues, and the environment. There is also the Indo-Bhutan Cooperation Directorate under India's Central Water Commission. More specific to the Manas River basin, the two governments established the Trans-boundary Manas Conservation Area (TraMCA) cooperative agreement in 2013, a 6,500 km² region of high biodiversity that combines protected areas from each country. Despite a strong record of bilateral cooperation, none of the current cooperative mechanisms between the two governments is in direct support of transboundary Manas River Basin. Instead, a mosaic of piecemeal agreements, dialogues, and committees manage some aspects of the Manas River. There are no mechanisms currently in place to facilitate cooperation or joint-management specifically for an integrated management of the Manas River basin.

Likewise, small demonstration projects to illustrate sustainable management of embankments, channels, and floodplains while protecting life and property have been infrequent and lack practical operational knowledge and inclusive transparent dialogue with local communities. Better understanding of the factual situation and new realities facing these transboundary basins and development of trust among cross-border and different levels of government (from national to state to local as well as joint technical committees between the countries) remains a difficult barrier to overcome.

Knowledge and Data Gaps:

The Manas River Basin is home to a highly complex environment that spans many unique ecosystems, from the high-altitude glaciers down to the low plains of the Manas River basin. While concerted efforts to improve the understanding of this environment and similar ones in the region are ongoing, there are still many unknown factors that are severely limiting sustainable management of the river system and its watershed.

Land under receding glaciers, including hillsides, can be very susceptible to mass erosion. The highly active geomorphology of the Himalayas with accelerated sedimentation from the young mountains, the sensitive steep slopes, and vulnerable valley floodplains poses a real danger to human settlements. Coupled with steep topography and the need for development including better roads for access to reduce poverty both upstream and downstream result in risks of soil erosion and landslides; mining can also disturb channels and basins which contribute to sedimentation. The remote nature of these basins also represents a root cause of lack of attention because of the difficulty of working there for some organizations. Lack of information on many specific aspects of landslides, glacial lake melting, sustainable land management and road construction/maintenance practices, and types of measures to prevent landslides and reduce risks of glacial lake outbursts and landslide damming of rivers, are the main barriers for mitigating risk along the Manas River Basin. The remote nature of the region has prevented documentation of the numerous human pressures that threaten the integrity of this mountain ecoregion and contribute to accelerated sedimentation.

The impacts of climate change on the Eastern Himalayas are also not well understood. In recent years several noted reports have presented contradictory information about the status of glaciers in Bhutan. And global models continue to predict a great deal of uncertainty associated with climate change projections. While some hydro-meteorological databases do exist, they are often not well maintained, unanalyzed and lack harmonized monitoring procedures to inform future decision making.

Underpinning the poor understanding of the complex geomorphology, ecology, and range of ecosystem services of the Manas River basin is a limited data availability collection, monitoring, and dissemination within and among Bhutan and India. The lack of monitoring ecosystem service provisioning makes ecosystem-based approaches for management impossible. Filling these basic knowledge gaps on riverine ecosystem services, and filling data gaps in monitoring and dissemination, are critical steps for the future of a thriving Manas River basin in both countries.

2) the baseline scenario or any associated baseline projects;

As already identified, three of the most significant barriers threatening a sustainable Manas River include: 1) lack of an integrated river basin management approach to manage the transboundary Manas River; 2) absence of bilateral cooperation on transboundary management of Manas River basin, and; 3) significant gaps in knowledge and data to inform management of the Manas River. Both Governments, NGOs, and academic partners have invested time and resources to address some of these issues. Unfortunately, many of the investments have been spread too thin across the country and/or have been focused on siloed issues, lacking integration. Specifically, for the transboundary Manas River, there exist only a handful of baseline activities, only further highlighting the strong need for GEF support.

Transboundary Baselines:

2011 Climate Summit for a Living Himalayas: The most important baseline opportunity to leverage is the 2011 Climate Summit for a Living Himalayas. The Climate Summit was a high-level meeting that brought together leaders from Bangladesh, Bhutan, India, and Nepal, to identify key issues and priorities on climate change adaptation in the eastern Himalayas. The Summit concluded with a “Framework of Cooperation” that targeted food security, freshwater systems, biodiversity, and energy security. Within the freshwater systems objective, the goals aimed to: a) Enhance practices that will minimize climate change induced disasters; b) Promote water efficiency and water efficient techniques - including modern and traditional methods; c) Increase knowledge sharing of climate change adaptation, and; d) Improve the regions understanding of the impacts of climate change on water resources. While the Climate Summit was seen as a success, the momentum of the Summit has lost pace in recent years. Efforts to renew the political will captured in the Framework for Cooperation document, particularly around freshwater systems, will be essential for promoting sustainable river basin management of the transboundary Manas River.

Trans-boundary Manas Conservation Area (TraMCA): The Trans-boundary Manas Conservation Area (TraMCA) is a cooperative agreement signed in 2013 for management of a 6,500 km² region of high biodiversity formed at the boundary of India’s Manas Tiger Reserve and Bhutan’s Royal Manas National Park. This transboundary protected area is home to flagship species like tigers, elephants, rhinos, pygmy hog, Bengal Florican, hispid hare and more than 1500 other species of mammals, birds and vascular plants. While freshwater management is not specifically identified as a priority in this joint-managed area, the biodiversity that calls TraMCA home relies on the Manas River to survive. The TraMCA joint managed area is a unique opportunity to build off a successful and on-going collaboration.

Flood Management JGE & JTT: A Joint Group of Experts (JGE) and a Joint Technical Team (JTT) on flood management was constituted between India and Bhutan starting in 2004. The JGE/JTT discuss and assess the probable causes and effects of the recurring floods and erosion in the southern foothills of Bhutan and adjoining plains in India and recommend to both Governments appropriate and mutually acceptable remedial measures. The last meeting of this group was held in January 2016, suggesting opportunities to strengthen the groups’ meeting frequency as well as expand the focus to include considerations on the impacts of climate change.

ICIMOD: The International Centre for Integrated Mountain Development is a regional learning and knowledge sharing center of the Hindu Kush Himalayas serving Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. Of the many relevant program’s under ICIMOD’s management is the *Support to Rural Livelihoods and Climate Change Adaptation in the Himalaya* (Himalica) initiative. Himalica aims to support poor and vulnerable mountain communities in the Hindu Kush Himalaya to mitigate and adapt to climate change. Himalica is an integral part of ICIMOD’s Regional Programme on Adaptation to Climate Change, which has dual objectives to enhance resilience and support adaptation by vulnerable communities. Its expected key results are: a) to enhance the capacities of national and regional stakeholders for improving livelihood development through more sustainable and efficient use of natural resources and the protection of the environment in the Himalayas, and; b) to reduce poverty among mountain people through increased resilience by unlocking new livelihood opportunities, and promoting more equitable approaches to development.

At the state and national level, both India and Bhutan have several key initiatives that serve as opportunities to build off for a successful transboundary Manas River basin intervention. In the State of Assam, the 2015-2020 Assam

State Action Plan on Climate Change (ASAPCC) serves as a key planning initiative to guide future interventions. Managed by the Department of Environment, Government of Assam, India, the ASAPCC is a set of well-researched and formulated mitigation and adaptation strategies specific to the state to respond effectively to the possible impacts of climate change. Surface water resources management is a key element of this strategy, and identifies several priorities including establishing an Assam State Water Resource Council and improvements in water use efficiency.

In Bhutan, the most significant initiative underway is the development of the 12th Five Year Plan (2018 – 2023). The socio-economic development plans are a critical national planning process that is also supported by India. As an example, the 11th Five Year Plan facilitated over 675 projects, including 595 small development projects. As a key implementation strategy for Bhutan's Gross National Happiness (GNH), Five Year Plans address Ecological diversity and resilience and living standards as two examples of the nine GNH indicators that potentially interest with improved river basin management. Other relevant government baselines include the National Disaster Managements Strategy Framework, the NAPA-directed Enhancing Hydrological Network for Water Resources Assessment and Improvement of Flood Information/GLOF Early Warning System project, Strengthening Meteorological Network Coverage and Enhancing Weather and Climate Information Services, Integrated Watershed Management, Geo-scientific Studies and Risk Assessment of Geo-hazards, Enhanced Disaster Preparedness, Response and Relief Capacity.

3) the proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project;

While the identified baselines within and between India and Bhutan are underway, the initiatives can be complemented by stronger collaboration and joint action. Integrated approaches across the boundaries using a basin approach supported by strong data and empowered staff resources and stakeholder engagement will enhance the benefits of on-going investments in the basin. On top of these issues, climate change is proposed to have a major impact to the region, only exacerbating many of these problems. On the positive side though, the current work presents a very unique opportunity for a GEF International Waters (IW) Focal Area Intervention. Specifically, the proposed project is very well aligned with two GEF-6 IW Focal Areas Programs – *Program 1: Foster cooperation for sustainable use of transboundary water systems and economic growth*, and; *Program 2: Increase the Resilience and flow of Ecosystem Services in the Context of Melting High Altitude Glaciers*.

Under IW-1 Program 1, the project proposed to strengthen current coordination mechanisms such as the Climate Summit Secretariat in support of promoting the Framework of Cooperation to improve joint-management of the Manas River Basin. The project will also strive for renewed political commitment and a shared vision and improved governance and ecosystem-based management of the Manas River. This will be achieved through on-the-ground demonstration projects, a Transboundary Diagnostic Assessment and subsequent Strategic Action Programme for the transboundary Manas River, and improved knowledge, capacity, and water management network facilitated by IW:LEARN. Under IW-1 Program 2, the project will address several of the many threats impacting the Manas River, including improving knowledge of the hydrologic systems that feed the Manas, including the high-altitude glaciers in the Eastern Himalayas. The project will also improve GLOF forecasting and monitoring other dangerous results of melting glaciers to promote adaptive management measures.

Collectively, the project aims to catalyze sustainable management of transboundary water systems by supporting multi-state cooperation to enhance resilience to climate change and sustainability of ecosystems services in the glacier-fed India-Bhutan transboundary Manas River Basin, through improved transboundary cooperation to facilitate integrated ecosystem-based river basin management. Specifically, the proposed project aims to achieve this objective with the following four components that address the specific gaps and barriers previously identified, while also leveraging existing baselines in India and Bhutan:

Component 1 – Strengthening Institutional Framework for improved India-Bhutan cooperation and future strategic Integrated Management of the Manas River Basin.

Component 2 – Improved basin scale information and knowledge sharing for better decision making in ecosystem-based management and risk reduction.

Component 3 – Field demonstrations to test innovative resilience solutions on the ground and possible mechanisms for up-scaling in glacial basins.

Component 4 – Knowledge management and effective project monitoring and evaluation.

Component 1 aims to build an Institutional Framework for strengthened management of the Manas River Basin. Expected outcomes of this component include:

- 1) Knowledge gaps filled to enable production of a transboundary Diagnostic Analysis (TDA), and informing a Strategic Action Program (SAP) for Indo-Bhutan Manas River Basin, incorporating best information available through a transparent and participatory process. This framework will include projections on the impacts of climate change (landslides, floods, and other disasters), vulnerability assessments (including identification and prioritization of risk parameters), and could also include risk reduction options like early warning systems and zoning, as well as capacity building and knowledge exchange programs for Government institutions like SDMA and WRD Assam, including BTC as well as community based organizations on both sides of the boundary. Business cases for scaling up future investments will also be considered, and can be developed through joint surveys and research by relevant technical departments within the Government of India, Royal Government of Bhutan, Assam state government, and multiple stakeholders.
- 2) Strengthened institutional arrangements and cooperation frameworks for enhanced cooperation on the management of the Indo-Bhutan Manas River Basin. This will build on existing institutional arrangements and cooperation frameworks such as the Transboundary Manas Conservation Area Action Plan (TRAMCA), and potential new arrangements such as national and binational inter-ministerial coordinating Committees.
- 3) Strengthened institutional capacities and mechanisms for preparedness and response to natural hazards. This will include the strengthening of capacities for Glacial Lake Outburst Flood (GLOF) vulnerability modeling / forecasting / design of mitigation strategies addressing impacts of climate on glacial-fed river systems, and strengthening stakeholder capacities at national and subnational level (CWC, Assam WRD, Assam SDMA, Assam State FD, BTC, BB, GNHC, NEC, NCHM, MoAF, MoHCA and others) on ecosystem based adaptation and disaster risk preparedness and response.

Component 2 is focused on producing data and information and filling knowledge gaps for strategic cooperation on glacier-fed river basins that feed into a Manas River transboundary assessment and action plan. Expected outcomes of this component include:

- 1) Key river basin data and information generated and shared for better decision-making on the Management of the Manas River Basin, including information systems for effective data generation and sharing.
- 2) Knowledge filled to strengthen planning and decision-making for improved ecosystem-based management and risk reduction, including a hydrological modelling exercises to establish correlation between rainfall, GLOFs, and river discharges. A pilot to share real time data will be implemented, including the participation of governments and communities, including water release data from upstream infrastructure for better disaster response mechanism design and integration of existing flood forecasting models and alter systems for better flood management.

Component 3 of the project is largely focused on field demonstrations to test innovative resilience solutions on the ground and possible mechanisms for up-scaling in glacial basins. Expected outcomes of this component include:

- 1) Demonstration pilots for risk reduction, adaptive management, and improved resilience

2) Strategy for rejuvenation of riparian wetlands and paleo/old channels, including Manas-Hakua, as a response to flood vulnerability preparedness, to demonstrate role of wetlands in flood management and livelihood enhancement. Revival of abandoned Manas-Hakua channel will not only act as a cushion in flooding season but also reduce the banks erosion (in Beki River), which is severe in the southern part of the Beki-Manas river system (within Indian territory). Knowledge creation and rejuvenation of old Paleo channels, including Manas-Hakua and other tributaries (passing through Manas National Park) such as Sukhanjan, Sukhanteklai, and Kanamakra, will revitalize 850 square kilometers of Manas National Park in India.

Component 4 underpins the previous components with robust knowledge management and effective project monitoring and evaluation to ensure timely project success. Expected outcomes in this component include: 1) Project knowledge and lessons learned disseminated, including participation in IW:LEARN activities (funded by 1% of project budget), and; 2) M&E to inform adaptive management.

The management plans and pilots are expected to demonstrate pathways to not only enhance water security for species in Manas National Park, but also reduce the threat from frequent flooding, reduce disaster vulnerabilities of local communities, and enhance drinking water security as well as livelihoods (fisheries, eco-tourism). On the institutional side, Assam WRD, Assam SDMA, Assam State Forest Department, BTC will benefit from various technical studies/interventions/training (especially on GLOFs and risk mitigation, green infrastructure for disaster risk reduction) being carried out under this project. It is expected that various pilots will demonstrate and validate a model which could be applied for better management of this transboundary basin.

4) incremental cost reasoning and expected contributions from the baseline, the GEF TF, and co-financing;

The glacial-fed India-Bhutan transboundary Manas River is a critical resource for both human livelihoods and important global biodiversity. GEF funding will be critical to successfully achieving integrated ecosystem-based management to sustain ecosystem services and increase resilience to climate change. Significant barriers and major gaps remain that continue to keep management of ecosystem services of the Manas River siloed within each country, and will benefit from a coordinated approach between the two countries. As the impacts of climate change become more apparent, these management challenges will become more difficult and insurmountable. Worse, there is still much that is unknown about the current glacial-fed Manas river system making current management hard, but also preventing any baseline measurements from being made to monitor against as climate change continues to worsen. Capacity to understand the science and make decisions, as well as to manage and implement water resource management interventions, sets a dire scene for the future of the Manas River.

Fortunately, several national bilateral initiatives are in place to serve as a baseline for a GEF investment. The most significant of these include the 2011 Climate Summit for a Living Himalayas, the Trans-boundary Manas Conservation Area (TraMCA) is a cooperative agreement signed in 2013, the Joint Group of Experts (JGE) and a Joint Technical Team (JTT) on flood management, ICIMOD, the Assam State Action Plan on Climate Change (ASAPCC) and Bhutan's Five-Year Plan process. Each of the above baselines represents complimentary investments from the two governments and civil society organizations, including WWF India and WWF Bhutan. The anticipated value of all these investments is approximately \$50,000,000 of in-kind and grant cofinancing.

Collectively, a GEF International Waters project is being proposed with four strategic components that build off the identified baseline programs to fill the most critical gaps and barriers. Specifically, project Component 1 will build off the existing coordination mechanisms to strengthen the institutional frameworks for improved India-Bhutan cooperation and future strategic collaboration. In Project Component 2, the project will support existing efforts from government agencies and civil society organizations to generate knowledge for improved decision making on glacier-fed river basins. Project Component 3 will build off current national level efforts with field demonstrations to test innovative resilience solutions on the ground with mechanisms established for up-scaling across the Manas River basins and potentially other glacial-fed river basins. And lastly, with Project Component 4, the project will build off current knowledge management and effective project monitoring and evaluation systems at the national level and

through GEF Agency expertise as well as the IW:LEARN community to ensure successful project delivery and sharing of lessons learned to inform future GEF investments.

Without the GEF intervention, the current initiatives will remain siloed. The Manas River will continue to be seen as only a source of economic opportunity at the cost of environmental degradation and habitat loss. Key species such as tigers, elephants, and rhino populations will continue to decline as their habitat and main source of freshwater is diverted, dammed, and unsustainably managed. Worse, the millions of inhabitants in the Manas River Basin will become more and more prone to floods and droughts. Sedimentation, erosion, landslides, and GLOFs will become more frequent, increasing the number of lives lost. The opportunity for a GEF International Waters investment is absolutely critical for averting almost certain disaster.

5) global environmental benefits (GEFTF);

Not only will this project yield environmental benefits for a considerable population of Bhutan and Indian citizens, a sustainably managed Manas River will also have benefits for globally important biodiversity in the river basin, as well as improved water quality and quantity downstream into the Indian Ocean. The project will play a critical role in promoting collective management of the glacial-fed Manas River Basin, a global transboundary water system, with implementation of a full range of reforms and investments contributing to sustainable use and maintenance of freshwater ecosystem services.

The project will enhance the generation and sharing of data at national and binational level, filling existing gaps and allowing the development of a transboundary diagnostic of the river basin that will inform a strategic framework, which in turn will allow for better alignment of existing national plans. This framework, together with the strengthening of binational structures and national competent institutions in charge of the management of the river basin, will result in a more effective cooperation between Bhutan and India. By enhancing dialogue between the two country governments at several levels, between governments and civil society, and by introducing resilience measures at the local level, threats to basin will be reduced.

The project is focused on the natural and human induced hazards exacerbated by current and projected impacts of climate change in the basin (especially glacial melt), and will increase data, information and tools for better assessments, monitoring and decision making on hazards, differentiated socioeconomic vulnerability, and disaster risks. The project will pilot measures for restoring freshwater ecosystem goods and services and disaster risk mitigation in order to reduce vulnerability to climate variability and climate related risks, and increase ecosystem resilience. These innovative pilots will represent an example for scaling-up climate resilience and coping strategies for different population groups in other priority areas of the river basin.

6) innovation, sustainability and potential for scaling up:

The project is designed with a major emphasis on using innovative demonstration projects to promote ecosystem-based river management. Additionally, due to the unique challenges of glacial-fed river systems, the project will rely on innovative solutions to measure and monitor seasonal river health high in the Eastern Himalayas, including using the latest in remote sensing and satellite imagery. Adaptive management to the impact of climate change in the region will also require ingenuity and innovation. Unique threats to the region such as GLOFs will require innovative solutions.

As the project is building off major baseline programs from the two governments, the intention is for the impact of the project to be absorbed by government colleagues over the long-term for sustainable results. Fostering a strong enabling environment for cooperation among the two countries and capacity building are both critical for the sustainability of this project and will be made top priorities. Further, as an GEF International Waters project, the project aims to actively engage in the IW:LEARN community and ensure technical government staff are given as many opportunities as possible to learn from other river basin management practitioners around the world.

Specifically, in Bhutan, the project will also benefit from the Bhutan for Life (BFL) sustainable conservation financing initiative, a long-term financing platform to ensure project results survive over the long-term.

2. Stakeholders. Will project design include the participation of relevant stakeholders from civil society organizations (yes X /no ☐) and indigenous peoples (yes X /no ☐)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

The project will be designed and implanted through consultations, reviews and guidance from multi stakeholder groups including Civil Society, community user groups/beneficiaries and centre/state government departments of both the countries. The following Government agencies will be the key stakeholders from the Government at the State level – Water Resources Department, District authorities, Bodo Territorial Council, State Disaster Management Authority and the Forest Department. Below is a table containing key stakeholders to be engaged during detailed project design.

Institution/Organization	Description/Engagement	Engagement
India		
Central Water Commission	Technical Organization in the field of Water Resources, and is presently functioning as an attached office of the Ministry of Water Resources, River Development and Ganga Rejuvenation, for the Government of India.	Primary stakeholders and project partners, will be supporting project design
Ministry of Water Resources, River Development and Ganga Rejuvenation	Responsible for laying down policy guidelines and programmes for the development and regulation of country's water resources.	
Ministry of Environment Forests and Climate Change	Responsible for the planning, promotion, co-ordination and overseeing of environmental and forestry programmes and policies	Will provide technical expertise towards project design
National Disaster Management Authority	Mandate to establish the policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters.	
India State level, Assam		
Water Resource Department (WRD)	Responsible for measures around flood (control) management, drainage, water logging and river bank erosion problems.	Will be periodically engaged (based on stakeholder engagement plan to be developed during detailed project development) Inputs incorporated into the project design
Assam Water Research and Management Institute (AWRMI)- under WRD	Geo-technical institution that supports hydrological modeling, supports data research and development activities, as well as capacity building.	
Assam State Disaster Management Authority (ASDMA)	Responsible for disaster risk reduction, response, and relief in Assam. Includes preparation of Disaster Management Plans at State, District, Village and Departmental level.	
Assam Integrated Flood and Riverbank Erosion Risk Mitigation Program (AIFRERMP)- under Flood and River Erosion Management Agency of Assam (FREMAA)	Protection of Strategic sites (urban, suburban, and productive rural) through Flood and Riverbank Erosion Management (FREM).	
Brahmaputra Board	Preparation and Implementation of Master Plans, in association with States, for management of flood bank erosion and drainage, and development and utilization of water resources of the Brahmaputra Valley.	
Brahmaputra and Barak Basin Organization, Central Water Commission	Issues flood forecasts, provides guidance to States in technical matters on different aspects of river and flood management in the country.	
Department of Environment and Forest, Government of Assam (DEF, Assam)	Responsible for conservation of areas with rich biodiversity.	

Bodoland Territorial Council (BTC)	Mandate includes Flood Control and Irrigation projects.	
All Bodo Students Union (ABSU)	Student Union to protect cultural heritage. Political movement demanding a separate State.	
Village Land Management and Conservation Committee (VLMCC)	Mandate covers village land resources, including wetlands, vegetative cover, and grazing reserves.VLMCC has an advisory role in land diversion/de-reservation of land.	
Centre for North Eastern Studies and Policy Research (C-nes)	Research institution.	
Academic Institutions	Iit Guwahati is one of the strongest institutions for knowledge and data for the Brahmaputra –Manas river system. Guwahati University is an important academic stakeholder with a clear mandate of research and development.	
Civil Society Organisations	Aaranyak is a local Civil Society NGO working to foster biodiversity conservation in Northeast India through research, environmental education, capacity building and advocacy for legal and policy reform in the area of ecological security.	
Bhutan		Primary stakeholders and project partners, will be supporting project design
National Center for Hydrology and Meteorology	Responsible for hydro-meteorological data collection, archiving, analysis and dissemination. The center is also the apex agency coordinating weather and flood forecasting (including flood early warning services).	
Ministry of Agriculture and Forests	The ministry responsible for Bhutan’s Natural Resource Management, Agriculture and Livestock.	
National Environment Commission	Autonomous agency mandated to oversee environment policies, issues and laws, and coordinate inter-sectoral environment programmes in the country. The commission monitors the impact of development on the environment and aims to put in place the necessary controls, regulations and incentives to private and public sectors to achieve sustainable development through judicious use of natural resources.	
Gross National Happiness Commission (Planning Commission)	The broad functions of the Planning Commission and its Secretariat are to formulate overall development strategies and coordinate sectoral activities, policies and programmes, and formulate Five-Year Plans and programmes. The Planning Commission is also responsible for aid management, co-coordinating inter-ministerial development programmes, and monitoring and evaluating programmes at the macro-level. It is also the role of the Commission to ensure timely implementation of the Plans according to specified objectives and priorities.	
Watershed Management Division (WMD) – Department of Forests and Park Services	Primarily responsible for managing watersheds throughout the Country. Mandate involves developing and implementing Watershed Management Plans for catchment areas, as well as the Basin level.	Will be periodically engaged (based on stakeholder engagement plan to be developed during detailed project development) Inputs incorporated into the project design
Ministry of Home and Cultural Affairs	The Ministry of Home and Cultural Affairs oversees the preservation, promotion, development, and protection of the culture and heritage of Bhutan. Provides some guidance on matters related to disaster management, and coordinates and monitors cross-sectoral issues related to local governance, culture, disaster management, and law and order in the country.	
Department of Disaster Management, Ministry of Home and Cultural Affairs	All disasters fall within the department’s purview, from geologic and weather related events (mandate from Disaster Management Act of 2013).	

3. Gender Equality and Women's Empowerment. Are issues on gender equality and women's empowerment taken into account? (yes X /no ☐). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

Gender equality and women's empowerment are important to the long-term success of all WWF GEF projects. The project will follow all WWF and GEF guidelines during project design to ensure full compliance. This will include a gender assessment and action plan during full project development to inform the project's design and routine monitoring on the success of implementation of the assessment's recommendations during project monitoring, reporting, and independent evaluations.

4. Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

Risks	Rating	Preventive Measures
Lack of stakeholder interest can lead to decreased transboundary cooperation for the Manas River	M	While a constant concern for any transboundary project, the project management unit will keep a close on any issues that may hinder a timely delivery of the project and manage as necessary. WWF offices in both countries will continue to monitor the situation and feed into project steering committee level decisions on the direction of the project should an issue arise. The project will address main operational challenges identified, such as limited institutional capacities and insufficient mechanisms and platforms for coordination. The project will promote an improved knowledge base, awareness raising of threats, and an effective means for coordination and institutional strengthening to ensure effective stakeholder participation.
Low national capacity or interest to commit to integrated river basin management in the two countries.	L	The 2011 Climate Summit and 2013 TraMCA are solid foundations for both governments that have been in effect for several years. Capacity constraints are an ongoing issue, but also provided an opportunity for renewed training in emerging areas such as climate change adaptation. The project also aims to engage civil society and other non-government actors that can serve as additional capacity resources after the project ends.
Increased frequency of extreme weather events, such as floods and droughts that can lead to project delays and impacts on project outputs.	M	Adaptive management will be implemented through project management in the case of delays to project activities due to extreme weather events.

5. Coordination. Outline the coordination with other relevant GEF-financed and other initiatives.

In order for the proposed project to be successful, it will be critical that it is closely coordinated with other GEF and non GEF-financed initiatives. To ensure close coordination, the project will maintain effective coordination with a wide range of stakeholders in the region during full project development and on an on-going basis during project execution and will ensure organization of specific activities such as meetings, field visits, workshops to for exchange of experience of relevant stakeholders. With respect to other GEF and non-GEF financed initiatives, close coordination will be ensured during full project development to identify areas of collaboration and mutual support with the below initiatives but with full intent to coordinate with other existing and emerging opportunities as they arise.

Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (World Bank & Asian Development Bank): This \$48.5 million project aims to protect the livelihood of about a million Indian citizens along the Brahmaputra River from floods and erosion. The project will strengthen flood and riverbank erosion risk management systems and establish community-based disaster management groups.

Enhancing Sustainability and Climate Resilience of Forest and Agricultural Landscape and Community Livelihoods (GEF-UNDP): This \$13.9 million project aims to operationalize an integrated landscape approach through strengthening of biological corridors, sustainable forest and agricultural systems, and build climate resilience of community livelihoods in Bhutan. This project has recently begun implementation and will be a valuable partner for coordination to ensure leveraging opportunities for collaboration when possible during full project development and execution.

Reducing Climate Change-induced Risks and Vulnerabilities from Glacial Lake Outburst Floods in the Punakha-Wangdi and Chamkhar Valleys (GEF-UNDP): This \$3.4 million GEF funded project's objective was to reduce climate change-induced risks of Glacial Lake Outburst Floods (GLOFs) in the Punakha-Wangdi and Chamkhar Valleys in Bhutan. The project ended in late 2013 but lessons learned and trained government staff from the project will still be a valuable stakeholder to advise the development of this current proposed project.

ICIMOD Himalica: This EU funded initiative's goal was to support poor and vulnerable mountain communities in the Hindu Kush Himalaya (Bangladesh, Bhutan, Myanmar, Nepal and Pakistan) to mitigate and adapt to climate change. The project was completed in the end of 2017 and will be a valuable resource to gain lessons learned and technical expertise to inform the current proposed project's development.

Bhutan for Life (BFL): BFL is an innovative funding initiative by Royal Government of Bhutan and WWF that aims to provide a sustained flow of finance to maintain the country's PAs and BCs in perpetuity. The goal of BFL is to "mobilize, in a single agreement, all the governmental, financial and other commitments needed to develop Bhutan's protected areas system and maintain it in perpetuity. The project will join forces with the BFL for its sustainable financing component, providing direct inputs into identifying and establishing new domestic streams of financing. BFL presents an unprecedented opportunity to build on a sustainable financing platform that will ensuring the proposed project's results have a sustainable long-term vision.

The project will also seek coordination with international finance institutions' investments (such as World Bank, EIB and EBRD) that work in the central Asia region on climate change mitigation and within the context of melting glaciers.

6. Consistency with National Priorities. Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes X /no ☐). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

As an integrated river basin management project, the project is highly consistency with several national priorities in both India and Bhutan. The project is most clearly aligned with the *2011 Climate Summit Framework* for Cooperation that specifically identifies freshwater services as one of four priorities. The project will also support national and state level climate change adaptation planning. The project will build off the *2015-2020 Assam State*

Action Plan on Climate Change, which is a state level planning strategy under India's *National Action Plan on Climate Change*. In Bhutan, the project will be working directly in support of its *National Adaptation Programme of Action (NAPA)*. The project will have a direct impact on habitat conservation for globally important biodiversity. Specifically, the project will be consistent with Bhutan's *2014 National Biodiversity Strategies and Action Plan (NBSAP)* and India's *2014 National Biodiversity Action Plan (NBAP)*.

7. Knowledge Management. Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

As a GEF IW project, the project team, government staff, and other relevant project partners will participate in IW:LEARN activities including IW workshops, trainings, webinars, International Waters Conferences, as well as share experience notes, lessons learned and other project communications material. This will be funded as 1% of the overall project budget (~US\$8,500).

The project will also engage with other networks and opportunities by which it could benefit and contribute lessons learned, particularly related to the Himalayan region and related to glacier melting. This could include coordination with initiatives such as the UNESCO Project "The impact of glacier retreat in the Andes: International Multidisciplinary Network for Adaptation Strategies," the UNESCO Project "Addressing Water Security: Climate Impacts and Adaptation responses in Africa, Asia and Americas (2014-2018)," or the Snow Glacier and Water Resources within the framework of International Hydrological Programme (IHP VIII, 2014-2021) "Water Security: Responses to Local, Regional and Global Challenges." During Project Development, a specific set of activities will be designed to ensure identification of any relevant global and regional efforts linked to the Himalayan region and glacier melting topics. Specific knowledge management activities will be done to ensure adequate learning from those initiatives and to share experiences with relevant stakeholders, including the analysis, documentation and sharing of best practices, the organization of meetings, workshops and field visits for exchange of experiences, and joint learning networks for relevant stakeholders, amongst others.


PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE(MM/dd/yyyy)
Mr. Nikunja Kishore Sundaray	GEF OFP, India and Joint Secretary to the Government of India	Ministry of Environment, Forest and Climate Change (India)	03/19/2018
Mr. Rinchen Wangdi	GEF OFP, Bhutan and Director, GNHC	Gross National Happiness Commission (Bhutan)	03/09/2018

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Herve Lefeuvre, WWF-US		03/09/2018	Isabel Filiberto	+1 (202) 779 6942	Isabel.filiberto@wwfus.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required **GEF Project Agency Certification of Ceiling Information Template** to be attached as an annex to the PIF.