



## **Climate Resilience in the Nakambe Basin**

### **Part I: Project Information**

#### **GEF ID**

9318

#### **Project Type**

FSP

#### **Type of Trust Fund**

LDCF

#### **Project Title**

Climate Resilience in the Nakambe Basin

#### **Countries**

Burkina Faso

#### **Agency(ies)**

UNDP

#### **Other Executing Partner(s):**

National Council for Environment and Sustainable Development (CONEDD)

**Executing Partner Type**

GEF Agency

**GEF Focal Area**

Climate Change

**Taxonomy**

Demonstrate innovative approaches, Influencing models, Deploy innovative financial instruments, Stakeholders, Focal Areas, Climate Change, Climate Change Adaptation, Community-based adaptation, Mainstreaming adaptation, Private sector, Climate information, Ecosystem-based Adaptation, Least Developed Countries, Livelihoods, Disaster risk management, Climate resilience, Climate Change Mitigation, Agriculture, Forestry, and Other Land Use, Land Degradation, Sustainable Land Management, Income Generating Activities, Sustainable Agriculture, Drought Mitigation, Private Sector, Financial intermediaries and market facilitators, SMEs, Communications, Awareness Raising, Beneficiaries, Civil Society, Community Based Organization, Type of Engagement, Information Dissemination, Partnership, Local Communities, Gender Equality, Gender results areas, Access to benefits and services, Capacity Development, Gender Mainstreaming, Gender-sensitive indicators, Sex-disaggregated indicators, Women groups, Capacity, Knowledge and Research, Learning, Adaptive management, Integrated Programs, Commodity Supply Chains, Smallholder Farmers, Food Systems, Land Use and Restoration, Food Value Chains, Smallholder Farming, Landscape Restoration, Food Security in Sub-Saharan Africa, Resilience to climate and shocks, Diversified Farming, Gender Dimensions, Small and Medium Enterprises, Strengthen institutional capacity and decision-making

**Rio Markers****Climate Change Mitigation**

Climate Change Mitigation 0

**Climate Change Adaptation**

Climate Change Adaptation 1

**Duration**

60In Months

**Agency Fee(\$)**

419,540

**A. Focal Area Strategy Framework and Program**

<b>Objectives/Programs</b>	<b>Focal Area Outcomes</b>	<b>Trust Fund</b>	<b>GEF Amount(\$)</b>	<b>Co-Fin Amount(\$)</b>
CCA-1	Promote Innovation and Technology Transfer for Sustainable Energy Breakthroughs	LDCF	3,500,000	9,000,000
CCA-2	Demonstrate Mitigation Options with Systemic Impacts	LDCF	500,000	8,000,000
CCA-3	Foster Enabling Conditions for Mainstreaming Mitigation Concerns into Sustainable Development Strategies	LDCF	416,210	3,628,179
<b>Total Project Cost(\$)</b>			<b>4,416,210</b>	<b>20,628,179</b>

**B. Project description summary**

**Project Objective**

To increase the resilience of Nakanbé basin communities by safeguarding lives and livelihoods from droughts and floods.

<b>Project Component</b>	<b>Financing Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>GEF Project Financing(\$)</b>	<b>Confirmed Co-Financing(\$)</b>
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<b>Project Component</b>	<b>Financing Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>GEF Project Financing(\$)</b>	<b>Confirmed Co-Financing(\$)</b>
1. Planning and management of short as well as long-term climate risks	Technical Assistance	Build capacity of the Directorate General for Nakambe Water Agency (DG-EAN) and communities on the use of climate & hydrological information/services for extreme climate risk management	<p>1.1 The capacity of the DG-AEN, ANAM, DGRE, AGROMET and communities are strengthened in terms of collecting and analysing climate change vulnerability and risks ;</p> <p>1.2 Harmonized vulnerability assessment is carried out and a suitable adaptation strategy is developed for the Nakanbé River environment to increase community resilience;</p> <p>1.3 A communication and institutional framework is available to disseminate warnings to rural populations in five vulnerable communes (Kaya, Ziniaré, Zitenga, Absouya and Korsimoro);</p> <p>1.4 At least seven hydrologists, five civil protection workers, four meteorological maintenance technicians and 10 provincial government officers are equipped to develop and implement flood/drought forecast and manage disasters.</p>	LDC F	1,330,335	10,000,000

<b>Project Component</b>	<b>Financing Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>GEF Project Financing(\$)</b>	<b>Confirmed Co-Financing(\$)</b>
2. Increasing the resilience of communities to climate-induced risks and variability	Investment	Climate risk Management and sustainable forestry practices adopted by smallholder farmers.	<p>2.1 Ecosystem-based adaptation initiatives, including bank terracing and plant buffers, are established to rehabilitate riverbanks and reduce soil erosion in five priority sub-catchments of the Nakanbé;</p> <p>2.2 Livelihood grants provided to at least five local structures in the Nakanbé basin to set up micro-enterprises for livelihood diversification;</p> <p>2.3 Climate resilient varieties of drought/flood resistant seeds are disseminated to selected farmers, supported by seasonal climate forecasts;</p> <p>2.4 Community-based enterprises are established and strengthened for women's and youth groups to access financing and credits, market products and manage value chains in the Nakanbé basin.</p>	LDC F	2,654,875	8,000,000

<b>Project Component</b>	<b>Financing Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>GEF Project Financing(\$)</b>	<b>Confirmed Co-Financing(\$)</b>
3. Knowledge Management and Monitoring & Evaluation	Technical Assistance	Effective Knowledge Management and Monitoring and Evaluation strategy	Tools for M&E and KM are developed and implemented	LDC F	247,300	1,000,000
<b>Sub Total (\$)</b>					<b>4,232,510</b>	<b>19,000,000</b>
<b>Project Management Cost (PMC)</b>						
					LDCF	1,628,179
					<b>Sub Total(\$)</b>	<b>1,628,179</b>
<b>Total Project Cost(\$)</b>					<b>4,416,210</b>	<b>20,628,179</b>

**C. Sources of Co-financing for the Project by name and by type**

<b>Sources of Co-financing</b>	<b>Name of Co-financier</b>	<b>Type of Co-financing</b>	<b>Amount(\$)</b>
Government	The Ministry of Agriculture and Hydraulic Facilities (MAAH)	In-kind	10,289,091
Government	Nakambe Water Agency (DG-AEN)	In-kind	912,310
Government	National Meteorological Agency (ANAM)	In-kind	6,660,000
Donor Agency	Agence Italienne pour la Coopération au Développement Project for the strengthening of population's resilience to food insecurity in Centre Nord and Sahel (P2RPIA-CNS project).	In-kind	2,016,778
Others	UNCDF	Grant	250,000
GEF Agency	UNDP	Grant	500,000
<b>Total Co-Financing(\$)</b>			<b>20,628,179</b>

**D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds**

<b>Agency</b>	<b>Trust Fund</b>	<b>Country</b>	<b>Focal Area</b>	<b>Programming of Funds</b>	<b>NGI</b>	<b>Amount(\$)</b>	<b>Fee(\$)</b>
UNDP	LDCF		Climate Change		No	4,416,210	419,540
<b>Total Grant Resources(\$)</b>						<b>4,416,210</b>	<b>419,540</b>

**E. Non Grant Instrument**

**NON-GRANT INSTRUMENT at CEO Endorsement**

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Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

**F. Project Preparation Grant (PPG)**

PPG Required

**PPG Amount (\$)**

150,000

**PPG Agency Fee (\$)**

14,250

Agency	Trust Fund	Country	Focal Area	Programming of Funds	NGI	Amount(\$)	Fee(\$)	
						<b>Total Project Costs(\$)</b>	<b>0</b>	<b>0</b>

**Core Indicators**

**Indicator 3 Area of land restored**

<b>Ha (Expected at PIF)</b>	<b>Ha (Expected at CEO Endorsement)</b>	<b>Ha (Achieved at MTR)</b>	<b>Ha (Achieved at TE)</b>
0.00	585.00	0.00	0.00

**Indicator 3.1 Area of degraded agricultural land restored**

<b>Ha (Expected at PIF)</b>	<b>Ha (Expected at CEO Endorsement)</b>	<b>Ha (Achieved at MTR)</b>	<b>Ha (Achieved at TE)</b>

**Indicator 3.2 Area of Forest and Forest Land restored**

<b>Ha (Expected at PIF)</b>	<b>Ha (Expected at CEO Endorsement)</b>	<b>Ha (Achieved at MTR)</b>	<b>Ha (Achieved at TE)</b>
	585.00		

**Indicator 3.3 Area of natural grass and shrublands restored**

<b>Ha (Expected at PIF)</b>	<b>Ha (Expected at CEO Endorsement)</b>	<b>Ha (Achieved at MTR)</b>	<b>Ha (Achieved at TE)</b>

**Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored**

<b>Ha (Expected at PIF)</b>	<b>Ha (Expected at CEO Endorsement)</b>	<b>Ha (Achieved at MTR)</b>	<b>Ha (Achieved at TE)</b>

**Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment**

	<b>Number (Expected at PIF)</b>	<b>Number (Expected at CEO Endorsement)</b>	<b>Number (Achieved at MTR)</b>	<b>Number (Achieved at TE)</b>
<b>Female</b>		16,140		
<b>Male</b>		16,140		
<b>Total</b>	0	32280	0	0

**PART II: Project JUSTIFICATION**

**1. Project Description**

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF

The following changes have been made to the objective and Outcome 1 and 2 statements to simplify and update the baseline results as well as the Risks and Barriers. The changes are as follows:

	<b>Statements at PIF approval</b>	<b>Statements at CEO endorsement</b>	<b>Observations</b>
<b>Barriers</b>	<p><b>Barrier #1:</b> The Nakambe River Agency and other relevant national actors have limited knowledge and means to generate hydro-meteorological information.</p> <p><b>Barrier# 2:</b> Inexistence of community disaster risks early warning system in the Nakambe Basin.</p> <p><b>Barrier #3:</b> weak resilience capacity of communities.</p> <p><b>Barrier #4:</b> Increased risks on water availability caused by anthropogenic and climatic factors.</p>	<p><b>Barrier #1:</b> The Nakanbé River Agency and other relevant national actors have limited knowledge and means to generate hydro-meteorological information.</p> <p><b>Barrier# 2:</b> The Nakanbé basin lacks a functional community disaster risk early warning system.</p> <p><b>Barrier #3:</b> Policy and legislation are inadequate and institutions have weaknesses.</p> <p><b>Barrier #4:</b> Communities' resilience is weak.</p> <p><b>Barrier #5:</b> Institutions lack financial capacity to adapt to climate change at the national level.</p> <p><b>Barrier #6:</b> Financial capacity to adapt to climate change at the local level is weak.</p>	<p>The barriers were revised and expanded to address the changes in the context since the approval of the project. These barriers were also identified following in-depth consultations with beneficiaries and stakeholders and other desk reviews.</p>

**Risks**

**Risk #1:** Capacity of community (organisation, illiteracy) to sustainably manage the investment and results.

**Risk #2:** Social resistance hinder the adoption of new resilient practices

**Risk #3:** Potential Environmental & social safeguards

**Risk #1:** Theft and vandalism could affect early warning and climate monitoring equipment.

**Risk #2:** Security in the targeted areas could worsen and jeopardize the project implementation

**Risk #3:** Environmental and social risks might arise.

**Risk #4:** Requisite human resources and data are unavailable.

**Risk #5:** Local IT and telecommunications

infrastructure is weak (e.g., international bandwidth and local mobile telecommunications networks),

**Risk #6:** Limited institutional capacity may make it difficult to tackle all project components effectively and simultaneously

**Risk #7:** Adverse climatic conditions may also pose risks to workforce health and safety or damage the adaptation measures being implemented.

**Risk #8:** Lack of incentives for particular local communities to cooperate in activities that do not yield immediate financial benefits, but aim at longer-term resilience, may reduce stakeholder engagement and comprehensive participation.

**Risk #9:** Delays in recruitment of qualified project staff may affect the timeframe of different project activities.

**Risk #10:** Procurement and installation of hydro-meteorological equipment, including hardware and software, could be delayed because of complications with the release of funds and/or national procurement procedures.

As for the barriers, the risks were revised based on the studies conducted during the project design (field visits and desk review)

<b>Outcome 1</b>	<b>Original budget:</b> US\$705,914	<b>Revised budget:</b> US\$ 1,330,335	The consultations with national stakeholders, in particular in meteorological institutions, have raised the need for additional meteorological equipment. This has therefore significantly increased the budget for this component. Without reliable climate information, the vulnerable areas of the Nakambe basin won't be able to sustain the investments made under component 2.
<b>Outcome 2</b>	<b>Output 2.2:</b> Livelihood grants are provided to Local Water Committees	<b>Output 2.2:</b> Livelihood grants are provided to local structures identified in each of the targeted area	The change can be explained as Local Water Committees are not always in place nor are the most adequate structure (technically and in terms of presence in the targeted areas) to support local communities to set up micro-enterprises for livelihood diversification.
	<b>Output 2.4:</b> Build market-based & entrepreneurial capacity of women/ young groups & producers.	<b>Output 2.4:</b> Community-based enterprises are established and strengthened for women's and youth groups to access financing and credits, market products and manage value chains in the Nakanbé basin.	The output now goes beyond only building capacities by establishing enterprises and cooperatives, supporting access to climate finance and testing innovative approaches such as mobile money. This was developed in line with the activities conducted by UNCDF in Burkina Faso to date. UNCDF has already conducted extensive activities, and through the provision of a co-financing letter, both initiatives engage to seek the best opportunities for partnership.
<b>Coordination</b>	Some projects that are now closed were identified for cooperation.	The prodoc updated all possible partners in the country and involved them in the formulation process.	N/A

The output structure has been defined and the budgets per Outcome have changed as the project has become better defined. The budget changes are as follows:

	<b>Original budget</b>	<b>Revised budget</b>	<b>% change</b>
<b>Outcome 1</b>	705,914	<b>1,330,335</b>	+88.456%
<b>Outcome 2</b>	3,500,000	<b>2,877,175</b>	-17.795%
<b>M&amp;E</b>	0	<b>0</b>	
<b>PMC</b>	210,296	<b>208,700</b>	-0.758%
<b>Total</b>	4,416,210	<b>4,416,210</b>	0%

A.1. Project Description 1. The Nakanbe Basin in Burkina Faso is particularly vulnerable to increasing extreme weather events (i.e. floods, droughts), spatial and temporal rainfall variability and increased temperatures. In the context of Burkina Faso, where 80% of the population relies on agriculture for their subsistence and most of the fields are rainfed, the impact of these events on life and livelihoods can be disastrous. The vulnerability to climate change is magnified by the damaging practices of local populations. Increasingly poor soil conditions, high poverty and the lack of alternative options often lead these populations to cause deforestation for fuelwood or more fertile fields, to use harmful pesticides, etc. This causes soil erosion and further impacts the vulnerability to climate change for agriculture, property and other livelihoods. A long-term solution is to increase the resilience of Nakanbé basin communities by safeguarding lives and livelihoods from droughts and floods. The “Climate Resilience in the Nakanbé Basin (Reclim)” project in Burkina Faso will technically support national and local stakeholders and work with local communities to strengthen their livelihoods and rehabilitate and maintain the Nakanbe Basin. More specifically, under the first outcome, the project will strengthen the institutional capacity of the major actors to use climate and hydrological information/services for extreme climate risk management. Under the second outcome, the project will address climate risks in the basin through ecosystem-based adaptation measures and the implementation of income-generating activities, including livelihood grants and microfinance. A1.1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2.

The Nakanbé River is experiencing considerable degradation due to the combined effects of climate change and anthropogenic activities (including agriculture, deforestation and overgrazing). Rainfall has decreased in recent decades, reducing the water available for rainfed agriculture and drying up perennial streams faster than usual. Climate-related stress is likely to worsen in the future, with increasing aridity already observed. With the reduction in the length of the rainy season, and the dependency on rainfed agriculture, the growing period has been reduced by up to 20 days (with a national average of 50 to 70 rainy days). Paradoxically, despite the 19% decrease in rainfall since the droughts of the 1970s, water run-off has increased, resulting in increased discharge and, consequently, greater vulnerability to floods, as observed in 2009 and 2010. This increase reached 193% for the period 1974–2008, compared to 1955–1973. This increase in river discharge can be explained by the land degradation resulting from human activity, where areas that had previously hosted natural vegetation are now cultivated, thus increasing sensitivity to erosion and surface degradation, and reducing water retention. 3. In addition, Burkina Faso has already observed increased average annual temperatures by 0.10°C per decade from 1901–2013, with stronger warming of 0.26°C per decade over the last 30 years. Regional climate model simulations suggest that West Africa, including Burkina Faso, will experience mean annual temperature increases of at least 1.5°C and possibly up to 2.8°C by 2050. This will further impact water availability by causing increased evapotranspiration. Introduction to project pilot sites4. Under Outcome 1, flood and forecasting early warning systems will cover the

Nakanbé basin, while on-the-ground interventions will target the Oubritenga and Sanmatenga watersheds and the five communes of Kaya (1 on the map below), Zitenga (2), Ziniaré (3), Absouya (4) and Korsimoro (5) with a total population of 66,198 inhabitants. Those communes have been identified as the most vulnerable of the 26 in the project's intervention zone (see map in Figure 2). More information on each of the five sites is available in Annex 14.

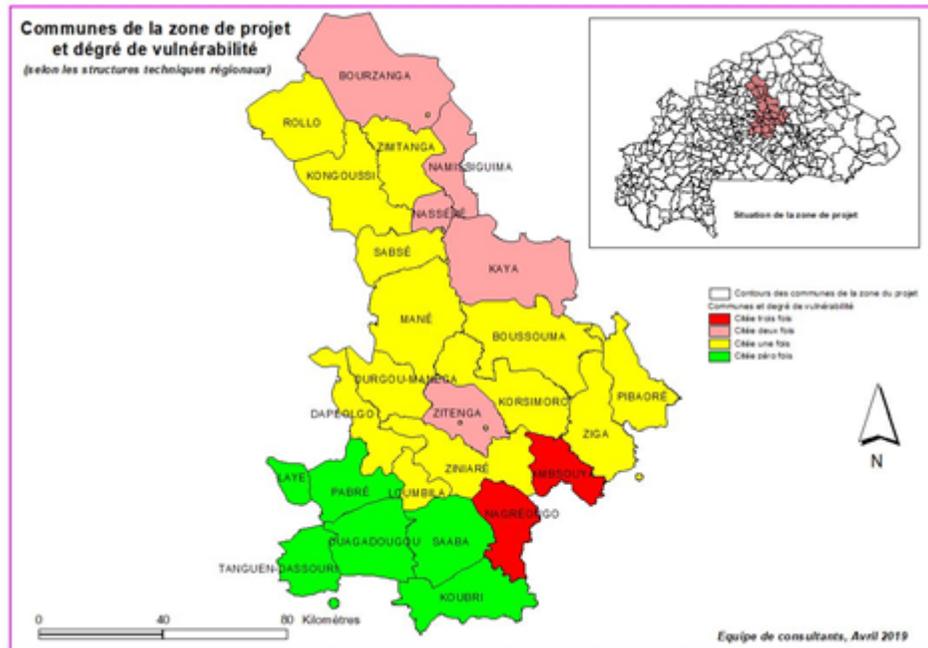


Figure 2. Burkina Faso and its five most vulnerable communes in Oubritenga and Sanmatenga provinces: –Kaya (1), –Zitenga (2), –Ziniaré (3), Absouya (4) and –Korsimoro (5). Causes of vulnerability in the study area Climate vulnerability5. Floods — Floods have become more pronounced in recent years. Severe floods often follow substantial droughts, as in 1994 and 1995, thus multiplying the effect on people and livelihoods. Floods in the Sahel region have increased from 11 major events in 20 years between 1986-2005 to 55 over 11 years from 2006-2016 . In addition, several floods occurred in the Nakanbé basin during the period 2008-2018, which resulted in loss of human and animal life and extensive property damage (including flooding of fields and the destruction of houses and barns). Table 1 shows statistics for three major Nakanbé provinces. Table 1. Flood impacts on communities in three major Nakanbé basin provinces

Province	Number of deaths	Number of victims	Livestock loss	Houses/barns destroyed	Fields flooded (ha)
BAM	2	11,985	101	772	42

OUBRITENGA	0	7,745	22	520	338.95
SANMENTENGA	6	35,926	31	919	1711

6. In addition to changes in rainfall tendencies, flood risks are further exacerbated in the Nakanbe Basin due to increased erosion, which limits infiltration capacity. Basin communities face extensive and recurrent floods, causing loss of life and property. For example, 500-600 people have faced significant property damages and losses following intense rainfalls on August 28th and 29th, 2018 in Kongoussi (Lake Bam). Because communities rely heavily on subsistence and rainfed agriculture, their livelihoods are also exposed to reduced and unpredictable rainfalls. The continued vulnerability of riverine communities in the Nakanbé basin to climate-induced risks and related hazards are a key problem and a key factor driving youth to leave rural areas and disrupting community livelihoods. 7.

**Agriculture** — More than 80% of the population in Burkina Faso rely on rainfed agriculture as their main source of livelihood. The country's agriculture production is primarily for subsistence and contributes to about 35% of the GDP. In the Nakanbé basin (e.g., Kongoussi), since villagers had to move away from the hillside for agriculture because of soil erosion, they now rely on productive valleys, previously irrigated by floodwater runoff. However, in recent years, gullies have formed in these valleys, disrupting water flows for irrigation and therefore impacting yields. This was further worsened by the reduction in rainfall over the last 20 years. 8.

**Water** — Burkina Faso is not well irrigated and many of its rivers dry up during the dry season (October-June), with the exception of the Mouhoun and Comoé in the southwest, which are spring-fed. The Nakanbé basin (81,932 km<sup>2</sup>) drains the central and northern part of the Mossi plateau and flows only during the rainy season. The first intermittent flows usually occur in May. However, flows do not become continuous until July-August at the Wayen watershed (drainage area of 20,800 km<sup>2</sup>) and strengthen downstream, when reaching the Bagré watershed (33,120 km<sup>2</sup> of drainage area). River basin depletion occurs earlier than historically recorded, with zero-flow days beginning in early November in Wayen and early December in Bagré. According to Ibrahim et al. (2012), the considerable shifts in rainfall onset and offset across the country, resulting in rainfall deficits, is expected to have dire consequences for the country's future surface and groundwater resources, including the Nakanbé basin. 9.

**Watershed Management** — While climate variability is expected to decrease precipitation, this will not necessarily produce a decrease in runoff and river discharges in the Nakanbé basin. Observations have already confirmed this and various models (RCMs) predict increasing discharges in the coming decades. Some models (RACMO and REMO) predict that by 2031-2040, discharges may rise to 156% compared to 1991–2000 observations. With crust formation and land encroachment for agriculture increasing since the 1960s, to the detriment of natural vegetation cover, soil infiltration capacity has declined, and surface runoff has increased, also implying reduced groundwater recharge. In Burkina Faso, and particularly in the Nakanbé basin, large quantities of rainwater runoff are observed during the rainy season on barren hillsides where overgrazing has removed most vegetation. This runoff collects water from small gullies and flows down towards the valleys, usually becoming a torrent. This cuts channels in the centre of fertile valleys, causing widespread soil erosion, and increased risks of floods. 10.

**Forest degradation** — Forest loss in Burkina Faso occurs primarily as a result of uncontrolled bush fires, fuelwood harvest, encroachment into forest areas for agricultural production (crops and livestock) and mining expansion. Biomass fuels represent up to 85% of the country's energy consumption. This heavy demand for fuelwood and charcoal further increases pressure on timber resources and is a significant driver of deforestation and environmental degradation, resulting in widespread soil erosion. Dense forestland in central southern Burkina Faso fell from 69.7% of national territory in 1986 to 31.4% in 2002 and 19.6% in 2015. This tendency is also observed in the Nakanbe Basin, where natural vegetation decreased from 70% of total land cover, to less than 20% between 1970 to 2010. 11.

**Social vulnerability** 11. **Private Sector - Microfinancing.** Burkina Faso's economy depends heavily on agriculture, forestry and livestock farming, which account for about one-third of economic output and employ more than 80% of the workforce. More than a dozen mid-sized microfinance institutions (MFIs), as well as a large number of smaller institutions, work with a wide range of sectors, including

livestock and farming. This small but growing private sector is dominated by the Réseau des Caisses Populaires du Burkina, which serves 60% of MFI clients and accounts for 80% of outstanding portfolios and savings. Another 12-15 mid-sized MFIs and a large number of smaller, struggling institutions also operate. The Première Agence de Microfinance Burkina Faso (PAMF-B) is one of the top three mid-sized players in the microfinance sector in terms of number of clients, loan values, disbursements and savings portfolio. It has traditionally been strong in the agriculture sector, expanding its presence on the ground steadily. About 86% of its clients are in rural areas (and 30% of borrowers and depositors are women) and obtain livestock and agricultural loans. The adoption of digital financial services is a focus for the near future and is already being supported by UNCDF through its programming. Similarly, the Hunger Project's Microfinance Programme (MFP) is woman-led, locally owned and fully integrated. It is a training, credit and savings programme that distributes microcredit to groups of women and men and promotes a culture of savings. This business sector is overseen by government regulation and supervised at the regional level by the West African Union's Central Bank. However, the National Microfinance Strategy and Plan of Action 2012-2016 has prioritized consolidating the sector by either strengthening or closing the weakest MFIs that pose a threat to clients and the sector. The National Strategy also prioritized protecting the interests of MFI clients and preserving confidence in the sector by increasing social performance management. Proposals call for focusing more attention on mobilizing savings and lifting interest rate ceilings to allow MFIs to charge sustainable interest rates.<sup>12</sup>

Gender — A predominantly patriarchal system dominates and dictates production systems in most Burkinabe communities. Under this system, women and children are seen as an unpaid workforce who do not participate in decision-making. The impact of climate change on women in Burkina Faso can best be assessed based on the sectors in which they are most involved (ie. natural resources such as water, firewood, non-timber forest products (NTFP) and agriculture). For example, because women are largely responsible for collecting water for the household, they are more sensitive to climate change-induced rainfall variations, causing significant challenges for women to access water. With water levels falling continuously, most wells may not be sufficiently replenished in the future. Although the State has improved technical potential with modern boreholes and wells, women's access to water remains a challenge, impacting women and children's health in terms of water quality and the physical effort required to collect it. In addition, women, who provide more than 75% of subsistence production, paradoxically have little access to production capital, and financial and extension services. In particular, land insecurity and poor access to equipment, agricultural inputs, technologies, and credit constitute a major constraint on productivity, especially among women. For example, 96% of female-headed households that grow vegetable crops use traditional equipment such as hoes and dadas, while 21.5% of male-headed households engaged in the same activity use plows. Given the strict conditions that borrowers must meet, women and young people are disadvantaged in obtaining access to credit as it is still difficult for them to secure mortgages to guarantee those credits (see Annex 11 for more detail on Gender Analysis and Action Plan).

#### Barrier analysis

Barrier #1: — The Directorate General for Water Resources (DGRE), the National Agency of Meteorology (ANAM) and other relevant stakeholders have limited knowledge and means to generate hydro-meteorological information. The observation network in the sub-basin is highly dysfunctional and the institutions lack the current and historical data to produce and disseminate reliable forecasts on floods and droughts for water management. Two agencies are responsible for observation - the DGRE and the ANAM. The DGRE is responsible for surface and groundwater monitoring. However, only 95 hydrometric monitoring stations are operational in the entire country. Most discharge data are collected manually monthly and data are also transmitted, validated and processed manually. In addition, water flow and water levels in the Nakanbé basin are not monitored in real time and data is not transmitted automatically. Furthermore, there is a shortage of qualified personnel to exploit the data produced. The ANAM network in the basin currently includes five synoptic stations, 17 automatic agro and weather stations, and 35 automatic rainfall stations. Of those, only 14 weather stations are operative (and function manually). Apart from the five synoptic stations, most of these stations do not transmit data automatically. Furthermore, the entire network requires urgent calibration and technical correction of the

transmission facilities. These problems are the result of inadequate investments in regional and local capacity development for climate-resilient information and decision-making systems.

**Barrier# 2:** — The Nakanbé basin lacks a functional community disaster risk early warning system. Weather and climate forecasts are currently produced for national use but are not tailored to specific regions such as the Nakanbé basin. In addition, the information is not presented clearly and understandably for local communities. Communication is primarily in French, which many Mossi communities do not speak. Prevention and response mechanisms do not adequately serve Nakanbé basin communities in areas at high risk of extreme weather events. The standard operating procedure (SOP) for alert communication that was set up under the UNDP LDCF Early Warning System (EWS) project does not guarantee efficient interagency coordination or efficient dissemination of early warnings at the Nakanbé basin level. Indeed, there are no effective and locally adapted channels/means to communicate hydrological, climatic and meteorological information, such as flood alerts and drought advisories, to all stakeholders. No organized community radio channels (with trained staff) or telephony exists at the community level. CONASUR has not been able to set up local disaster risk management committees and develop early warning contingency plans as part of the early warning response. Both CONASUR and the Civil Protection Services need additional capacity building and transmission equipment to disseminate messages.

**Barrier #3:** — Policy and legislation are inadequate and institutions are weak. Similar to other African countries, Burkina Faso has started the development of an ambitious water policy framework and an action plan, focusing on IWRM (MAHRH, 2003). The country has made several policy changes in the water sector. Disaster risk reduction was included in the National Program for Economic and Social Development (Programme national de développement économique et social, PNDES, 2016–2020) and the National Water Policy (2016–2030), as stated above. Although Burkina Faso is often cited in the literature as 'a pilot country' in implementing IWRM, this policy reform has fallen short in some ways, characterized by: i) a confusing institutional framework for water that, for many years, divided responsibility between two ministries (agriculture and environment); ii) weak implementation of the plan; iii) lack of adaptation to local conditions; and iv) limited consideration of linkages between land and water (tenure). For example, the PNDES sets out the government's ambition to increase the contribution of irrigated agriculture to overall national agricultural production from 15% in 2015 to 25% in 2020. In addition, the government also gives priority to special agricultural zones (agropoles) where agricultural investment and activity is to be concentrated, with support from donors such as the World Bank. Examples of agropoles include Samendéni, Sourou and Bagré. However, the PNDES policy goals and the agropoles lack the kind of support that SDAGE receives in the water sector. Institutional responsibilities are fragmented and stakeholders at the local level, including AEN, DGRE and CLEs, have not established integrated planning and implementation. CLES and local CBOs (particularly gender-based organizations) require additional technical and financial capacity so that they can respond positively to the intended increase in the contribution of irrigated agriculture and production.

**Barrier #4** – Communities' resilience is weak. Poor communities in the Nakanbé basin have very little knowledge of resilient farming methods, such as plant density, drought-resistant varieties of local crops, suitable seed provision and mulching, and of low-cost water conservation/irrigation technologies. 80% of the population in the basin's Centre North region is rural and relies on subsistence agriculture as its main source of income and is dominated by subsistence and small scale (rainfed) farming. Natural disasters related to erratic climate conditions (e.g. extreme heat and alternating periods of drought and flooding) represent a strong impediment. Additional technical and institutional constraints exacerbate climate vulnerability, including inadequate infrastructure, limited access to markets, market uncertainty, weak capacity of producer organizations, lack of financing, poor sectoral coordination, and security instability.

**Barrier #5:** — Institutions lack financial capacity to adapt to climate change at the national level. ANAM and DGRE require greater financial resources to retain and expand staff,

scale up communication of information, and address infrastructure gaps to support implementation of climate change adaptation options at the local level. The consequences of limited core financing, and the related challenge of attracting and retaining a critical mass of qualified staff, have a significant influence on the development of both climate service design and delivery, particularly at the local level in the Nakanbé basin. In the context of SDAGE in the water sector, implementation of adaptation measures at the local level, through the CLEs or local organizations supporting riverine communities, has been weak. CLEs and local organizations often have basic needs, such as: a detailed business plan; a favourable business environment; access to finance, inputs, market information; or greater technical and business management capacities.

Barrier #6: - Financial capacity to adapt to climate change at the local level is weak. Limited access to agricultural production inputs, such as climate-resilient varieties of drought/flood resistant seeds and technology, further limits farmers' ability to increase crop productivity. This results in part from the absence of finance mechanisms in the rural areas and, especially, the lack of resources available for agricultural producers. Bank lending to the agriculture sector is low—just 4%—with the majority of this financing directed to the cotton sector. Although MFIs are more engaged in financing farmers and agribusinesses, agriculture's share of MFIs' total loan portfolio - XAF 160 billion/US\$297 million - was only 15% in 2016. According to the World Bank (2019), in Burkina Faso, women, the poor, and rural populations are still largely excluded from the formal financial sector, despite tremendous growth in financial access over the last three years. The supply of agricultural credit offers few options, while collateral requirements are high (usually land titles). Finally, women's access to agricultural extension services, credit and productive resources, such as land, remains limited.

A1.2) The baseline scenario or any associated baseline projects

13. If adaptation interventions in the Nakanbé basin are not adopted, national agencies and community organizations acknowledge that the basin's population will become increasingly vulnerable to climate variability and ecosystem degradation. Under the baseline scenario, watershed management in Burkina Faso's Nakanbé basin will remain unresponsive to climate change due to weak institutional and community technical and financial capacity and a political and legal framework that precludes the adoption of an integrated approach for adaptation. The proposed project approach will design and implement anticipatory measures to reduce the risks posed by floods and droughts on vulnerable sectors, including water management, agriculture, livestock, forestry and food security. The proposed strategy calls for a paradigm shift to address the increasing risks posed by floods and droughts. It will improve institutional capacity to develop flood and drought forecasts in a timely manner and disseminate warnings, alerts and advisories to end users, including vulnerable communities of the Nakanbé basin. This will, in turn, strengthen local capacity to respond effectively to and manage climate change risks that threaten ecosystem services, water resources, agricultural production and livelihoods.<sup>14</sup> The project will result in the establishment and operationalization of a flood forecast and early warning system at basin level, improve watershed ecosystems, and restore ecological function through the use of ecosystem-based approach (EbA) strategies such as community forestry and agro-forestry. Community livelihoods will be made more climate resilient, particularly by adopting practices that will minimize the effects of drought and erosion, as well as seasonal variability. The diagram below presents the project's theory of change (ToC) and shows how the project's output activities (inputs) can remove current barriers to achieve transformational change.<sup>15</sup> This theory of change has been developed to counteract the trend under the baseline pathway. Under this baseline pathway, the risk of impacts to life, property, economic assets, livelihoods and food security in this vulnerable basin from frequent flood and drought would continue to increase. With this project, it is expected that 66,198 residents of the five target communes and approximately 219,962 inhabitants of the two watersheds of Oubritenga and Sanmatenga will be made more resilient. Component 1 will ensure that improved technical capacity – skills, methods and technologies to assess the hazard, risk and vulnerability to flood and drought - is developed. This will be achieved via a fully operational flood forecast and early warning system to aid anticipatory planning and prioritization of watershed management interventions. Component 2 will contribute to building the capacity of local community organizations (CLEs and women's and youth associations) to take up the advisories disseminated and implement adequate adaptation

measures accordingly. This will be complemented by the adoption of EbA practices in the Basin, to reduce the impacts of floods and droughts on communities' livelihoods.16. The ToC includes key assumptions that were taken into account for the design of the project strategy, such as:

- Additional human capacity to develop the EWS components;
- Effective dissemination mechanisms are available for warnings and alerts to reach end users at the community level in the Nakanbé basin;
- ANAM and DGRE maintain a functional hydromet network to support the EWS;
- GoBF institutions engage in the project implementation process in a coordinated and constructive fashion;
- Communities are willing to collaborate in project implementation; and,
- Technical expertise is available at the basin level to support the project implementation tasks, including data collection, technical support, training and capacity building.

17. The baseline scenario under the different components is as follow:

Outcome 1. Build capacity of the DG-AEN, ANAM, DGRE and communities on the use of climate and hydrological information/services for extreme climate risk management

18. Through the first LDCF EWS project, a number of activities were implemented and have increased the general institutional capacity of the partner institutions. However, the survey carried out during the PPG phase on the current status of key stakeholders (ANAM, DGRE & DG-AEN) indicates that the meteorological and hydrological observation network is not functioning optimally. Essential weather and climate variables on the Nakanbé basin are not being transmitted adequately for the establishment of fully functioning and effective climate change Flood Forecast and Early Warning System. ANAM and DGRE benefitted from hardware and software for data processing and forecasting (ie. high performance computer (HPC), satellite receiving station, computers for numerical weather prediction, automatic weather station servers, desktop computers) as part of the recently closed UNDP EWS project. However, both ANAM and DGRE lack qualified staff and for the upgrading of data transmission systems and the dissemination of weather (ANAM) and flood (DGRE) warnings. Additionnally, the existing skills and capacities of ANAM and DGRE on data downscaling to produce tailored flood and weather forecasts for DG-AEN and basin-level communities also remain weak.19. In addition, the overall assessment conducted during the PPG, indicates that a significant investment from the LDCF project is needed to complement investments from the Government of Burkina Faso (ie. Outlook Burkina 2025 vision; Master Scheme for the Development and Management of Water Resources (SDAGE) for the Nakanbé Basin; and the SAGE - Water Development and Management Plan) to improve data transmission and the dissemination of weather and flood warnings, including through capacity building of ANAM and DGRE staff to assist the Nakanbé basin communities.20. The associated baseline projects that this LDCF project can partner with for potential synergies during the implementation of the activities of this Outcome are:

Project name and implementation period	Intervention zones and areas	Areas of collaboration
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Project name and implementation period	Intervention zones and areas	Areas of collaboration
<p><b>World Bank: GCF: Africa Hydromet Program</b> - Approved in March 2018 for a five-year period, the project will provide capacity-building and institutional development; improve hydromet and early warning infrastructure; enhance service delivery and warnings to communities.</p> <p>The National Meteorological Agency is in charge of the project.</p> <p>Duration: 2018-2023</p>	<p>Zones: <b>Areas of flooding and drought in the Nakanbé basin.</b></p> <p>The overall project objective is to strengthen the adaptive capacity and climate resilience of vulnerable communities and the economy of Burkina Faso by:</p> <ul style="list-style-type: none"> <li>a. developing the capacity of national hydro-meteorological and warning services;</li> <li>b. supporting adaptation planning for public and private sector users; and,</li> </ul> <p>strengthening the existing hydrological monitoring network placed at each of relevant tributaries at the Nakanbé basin.</p>	<p>The project will benefit from the strengthened coordination of the meteorological and hydrological network. This will be achieved through the Hydromet project, which will support the project's Outputs 1.1 and 1.3 on the early warning system.</p> <ul style="list-style-type: none"> <li>a. Expanding and upgrading hydromet observation networks;</li> <li>b. Enhancing data, forecasting and decision support systems;</li> <li>c. Strengthening preparedness and emergency response facilities and operations; and,</li> </ul> <p>Improving early warning and community preparedness.</p>
<p><b>World Meteorological Organization (WMO) - Adaptation Fund Project:</b> – <i>Integrating Flood and Drought Management and Early Warning for Climate Change Adaptation in the Volta Basin.</i> Scheduled to start in 2019, for a four-year period. The project is aimed at reducing the risk of droughts and floods and developing early warning systems.</p> <p>Duration: 2019-2022</p>	<p>Area of intervention: <b>Nakanbé basin.</b></p> <p>The area of cooperation will focus on: (i) improving knowledge of risks, climate change impacts and risk management capacities; (ii) developing vulnerabilities, capacities, exposure and risks (VCERs); (iii) producing flood and drought risk maps for the Nakanbé area; and, (iv) improving flood and drought forecasting instruments and EWS.</p>	<p>The project will share parallel activities in all three components, particularly: 1) developing flood and drought risk maps in Component 1; 2) improving flood and drought forecasting instruments and EWS in Component 2; and, 3) strengthening policy and institutional capacity for integrated flood and drought management at the local level. This will strengthen the project's Components 1 and 2 in terms of resilient and sustainable agriculture, ecosystem resources, climate risk management systems.</p>

Project name and implementation period	Intervention zones and areas	Areas of collaboration
<p><b>WMO Project: <i>Strengthening National Capacities for Early Warning System Service Delivery (CREWS)</i></b></p> <p>The main focus of CREWS in Burkina Faso is to build the capacity of the National Meteorological Service and strengthen its cooperation with key sectoral ministries, departments and other stakeholders working in the above areas to put in place complete systems that deliver warnings and relevant information to end-users.</p> <p>Budget \$2,192,200.00 - <i>\$1.6 million quoted as co-financing.</i></p> <p>The project duration is three (3) years. (October 2017 - December 2019)</p>	<p>Zones: Burkina Faso and <b>Nakanbé basin.</b></p> <p>Key deliverables</p> <ul style="list-style-type: none"> <li>• Assessment of observation network processes and needs;</li> <li>• Data base improvements;</li> <li>• Short-term forecasting capabilities;</li> <li>• Sub-seasonal to seasonal forecast;</li> <li>• Analysis, nowcasting and climate watch tools; and,</li> <li>• Risk information and forecasting products for flood early warning.</li> <li>• Risk information and forecasting products for agriculture and food security</li> <li>• Institutional strengthening</li> </ul> <p>Monitoring and evaluation</p>	<p>The project will develop capabilities in data management, observation network monitoring and control, implementation of analysis, monitoring and forecasting tools for weather and climate early warning, as well as strengthen the interface with information users.</p> <p>The project will draw on advanced technical expertise from cooperating institutions to ensure access to relevant data, products, tools, training and equipment.</p>

Outcome 2: Smallholder farmers adopt climate risk management and sustainable forestry practices

21. Adverse economic, social and environmental impacts are acute in the Nakanbé River. The high population density and poverty have led to significant human pressure on the environment and degradation of the basin's natural resources. The growing population expands land area under cultivation and exploits forests and woodlands for agriculture production. Deforestation, soil erosion and sedimentation form the most serious threats to the environment and natural resource, resulting in the increased incidence of erosion, run-off and flash floods. High loads of sediment are deposited in riverbeds, reservoirs and floodplain wetlands, affecting irrigation canals, fisheries and hydropower generation. The current

climate variability and change will have a broader range of impacts on individual households that have low capacity to manage climate risks and the limited number of available coping mechanisms. This situation is creating additional barriers for households, particularly women, to achieving household food security. If adaptation interventions in the Nakanbé basin remain limited, the national agencies and community organizations acknowledge that a large proportion of the basin’s population will remain extremely vulnerable to the current interaction between climate variability and ecosystem degradation. 22. The PPG assessment showed that various sites have suffered significant degradation over time due to the impacts of climate and human-induced erosion. Dem Lake suffered significant river and lake bank erosion. The classified forest of Bissiga suffered advanced degradation due to the impact of climate variability and change and the systematic encroachment caused by pressure from populations whose available farming land was reduced when the Ziga dam was built. Likewise, significant areas of forest around the sub-basins of Ziga and Absouya, suffered primary degradation due to both logging by the populations to obtain fuel for household energy and thereafter severely impacted by soil erosion. This widespread degradation of the resource-base forest ecosystem has also caused socio-economic impact on communities enhancing the poverty levels in the Basin. Given the acute shortage of investment in these affected areas the Basin’s communities and their representatives expressed the need for support to tackle the widespread poverty caused by forest degradation by creating conditions for communities to undertake productive livelihood initiatives and the setting-up of micro enterprises. 23. The LDCF project will therefore complement investments from the Government of Burkina Faso (ie. the second phase of the “Rural Sector National Program (PNSR II) implemented by the Ministry of Agriculture and Hydraulic Facilities (MAAH)). Other baseline projects can be associated to this LDCF project for synergies:

Table 3. Potential synergies for Outcome 2 with current projects in Burkina Faso

Project name and implementation period	Intervention zones and areas	Areas of collaboration
<p><b>Burkina Faso – World Bank Bagre Growth Pole Project</b></p> <p>The objective of the Bagre Growth Pole Project for Burkina Faso is to contribute to increased economic activity in the project area, resulting in increased private investment, employment generation and agricultural production.</p> <p>Launched in 2019 for a period of five years.</p>	<p>Zones: <b>National level in Burkina Faso</b></p> <p>This program consists of the following relevant components:</p> <ol style="list-style-type: none"> <li>1. Investment in drinking water supply;</li> <li>2. Provision of sanitation infrastructure;</li> <li>3. Investment on improved knowledge of surface water and groundwater; and,</li> <li>4. Direct support to smallholders and Small and Medium Size Enterprise (SME).</li> </ol>	<p>This project will build on the results achieved with regards to climate change adaptation strategies, particularly the capacity to deliver alternative livelihood generation activities, enhancing agricultural production in the target communes and building market-based and entrepreneurial capacity of women’s/youth groups and producers. This will strengthen Component 2 of the project on the diversification of local livelihood strategies and, consequently, increase the resilience of subsistence livelihoods.</p>

Project name and implementation period	Intervention zones and areas	Areas of collaboration
<p><b>UNDP GEF Project: Integrated and Sustainable Management of PONASI Protected Area Landscape.</b></p> <p>The project introduces, for the first time in Burkina Faso, a landscape approach to biodiversity conservation and productive land management, which includes bio-carbon conservation.</p> <p>Scheduled to start in 2019, for a period of six years.</p>	<p>Zones: <b>Nakanbé basin.</b></p> <p><b>Project Component 1</b> aims to implement an integrated management at the scale of the PONASI landscape;</p> <p><b>Project Component 2</b> will focus on the management effectiveness of protected areas (PAs), including community PAs;</p> <p><b>Project Component 3</b> will focus on agro-sylvo-pastoral areas in the landscape surrounding PAs and on the livelihoods of local communities based on sustainable use of natural resources linked to PAs;</p> <p><b>Project Component 4</b> will mainstream transversal issues of knowledge and gender into project outputs and outcomes.</p>	<p>The project will benefit from the interventions under Component 3 to improve the sustainability of natural resource management and livelihoods in agro-sylvo-pastoral lands, consistent with the activities to be developed in Outcome 2.</p> <p>Furthermore, the project activities to be developed in Outcome 2 will also benefit from the establishment of tourism microenterprises as part of a landscape-scale strategy in relation to PAs and support for NTFP processing value chains to benefit local communities, especially women.</p>
<p><b>UNCDF Programme: <i>Programme to support the economic and climate resilience of the people of Burkina Faso through financial and digital innovations (PARI)</i></b></p> <p>The main objective of the programme is to contribute to improve the economic resilience of the populations in Burkina Faso, through the developmet of a more innovative, inclusive and sustainable economy, creating stable and decent employment for women, youth, farmers and MSMEs.</p>	<p>Zones: Burkina Faso (with a focus on youth, women, farmers and MSMEs)</p> <p>Outcomes:</p> <p><b>Outcome 1:</b> Generalize the use of digitalinnovations for the strengthening of economic resilience</p> <p><b>Outcome 2:</b> Support entrepreneurship and the creation of economic opportunities for a fair, inclusive and sustainable growth</p>	<p>The activities under the outputs 2.2 and 2.4 of the Reclim project, in particular with regards (i) the conduct of the diagnosis of business ecosystem (activity 2.2.2), (ii) the support to entrepreneurship (activities 2.2.3 to 2.2.6, 2.4.1, 2.4.2 and 2.4.4), and (iii) the use of new technologies for the development of the private sector (activities 2.4.3 and 2.4.5)</p>

A1.3) The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project, 24. The objective of the Réclim project is to increase the resilience of Nakanbé basin communities by safeguarding lives and livelihoods from droughts and floods. COMPONENT 1. Planning and management of short- and long-term climate risks Outcome 1. Build capacity of the DG-AEN, ANAM, DGRE and communities on the use of climate and hydrological information/services for extreme climate risk management<sup>25</sup>. This outcome will build on the recently closed LDCF EWS project and contribute to operationalizing hydrological forecast services in the Nakanbé basin to reduce climate change vulnerability and risks. The outcome, under the leadership of ANAM, and in straight partnership with DGRE and DG-AEN, will also support the upgrading of data transmission systems and the dissemination of weather (ANAM) and flood (DGRE) warnings. ANAM as WMO representative in the country and given its national mandate will be responsible for the installation of all automatic weather stations in close partnership with DGRE and DG-AEN wherever applicable. Simultaneously, the project will strengthen the skills and capacity of existing ANAM and DGRE staff on data downscaling to produce tailored flood and weather forecasts for DG-AEN and basin-level communities. LDCF resources will also be used to conduct training for DG-AEN, ANAM, DGRE and AGROMET staff on using models for climate forecasts and generating climate change impact scenarios (over 25, 50 and 100 years) for key economic sectors in the Nakanbé basin. The DG-AEN will use these results to study the possible impacts on climate (including drought, floods, erosion and landslides) and vulnerabilities identified earlier. This will improve the DG-AEN's understanding of climate change impacts and associated physical and economic vulnerabilities, as well as the overall socioeconomy of the Nakanbé basin (Output 1.1).<sup>26</sup> Widespread soil erosion is occurring in Gourga and Yatenga provinces in northern Burkina Faso and is particularly serious in Katchari, in Seno province in the Sahel. A comprehensive climate change risk assessment will be conducted under the leadership of DG-EAN, using a participatory approach, to increase understanding of current vulnerabilities in the Nakanbé basin and to identify flood- and drought-prone areas. This will include assessing soil erosion, soil degradation, watershed conditions and forest encroachment using field survey and GIS mapping, focusing on the basin's most degraded and climate-sensitive locations, based on NAPA and NAP data (see Annex 14 for details). This will also make it possible to analyse adaptation policy options and develop multi-sectoral adaptation strategies and implementation action plans at the basin level (Output 1.2). The effectiveness of dissemination and the hazard response capacity will be assessed at a selected number of locations across the basin, targeting different mechanisms that seek to enhance communications and the delivery of warnings, alerts and advice to target end users in the communities. Stakeholder consultations will be conducted at the commune level to assess the dissemination service and primary data on loss and damage from previous climate shocks. This will provide a baseline to measure project effectiveness. Funds allocated to this Outcome will also be used to strengthen the EWS SOPs for harmonized delivery of advisories and track the progress of implementation at the Nakanbé basin level, as developed under the LDCF EWS project (Output 1.3). Additional training and capacity development initiatives will be conducted under the leadership of ANAM and DGRE to upgrade the knowledge of hydrologists, civil protection workers and provincial government officers, who will be equipped to develop and implement local flood/drought forecasts and manage disasters at the basin level (Output 1.4).

Output 1.1: The capacity of the DG-AEN, ANAM, DGRE, AGROMET and communities are strengthened in terms of collecting and analysing climate change vulnerability and risks

27. This Output, under the leadership of ANAM, will build the capacity of the DG-AEN, ANAM, DGRE, AGROMET and communities in the Nakanbé basin to collect and analyse climate and hydrological information/services for extreme climate risk management. In particular, the project will put emphasis on ANAM and DGRE as they have the national and international mandate to monitor climate and hydrological information. 28. The resources will be used to equip and operationally strengthen key institutions involved in collecting, analysing and disseminating weather and hydrological forecast services in the Nakanbé basin, particularly to ensure that data are collected, transmitted, stored and analysed properly. The following specific interventions will be carried out (but might be re-adjusted based on discussions with beneficiary agencies during the start-up phase of the project):

<b>ANAM</b>	<ul style="list-style-type: none"> <li>· Install/strengthen/upgrade suitable fast and reliable telecommunications network via mobile phone (or optic fibre if possible)</li> <li>· Increase climate and weather data storage capacity at ANAM-HQ</li> <li>· Operationalize limited area models (WRF and COSMO)</li> <li>· One automatic mobile meteorological weather station for calibration</li> <li>· Advanced workstations</li> <li>· One automatic plotter</li> </ul>
<b>DGRE</b>	<ul style="list-style-type: none"> <li>· Install/strengthen/upgrade suitable fast and reliable telecommunications network via mobile phone (or optic fibre if possible)</li> <li>· Increase climate and weather data storage capacity at DGRE-HQ</li> <li>· Support to upgrade MIKE BASIN model to become operational</li> <li>· One automatic mobile hydrometeorological weather station for calibration</li> <li>· One screen for interactive visualization</li> </ul>
<b>AGROMET</b>	<ul style="list-style-type: none"> <li>· Five complete AWS, with transmission facility to be located at each of the five target communes of Kaya, Ziniaré, Zitenga, Absouya and Korsimoro</li> </ul>
<b>DG-AEN</b>	<ul style="list-style-type: none"> <li>· Install/strengthen/upgrade suitable fast and reliable telecommunications network via mobile phone (or optic fibre if possible)</li> <li>· 10 automatic rainfall stations with transmission capacity</li> <li>· One automatic mobile weather station for calibration</li> </ul>

29. Training programs will be developed for local authorities and communities on the practical use of agromet advisory and early warning systems. LDCF resources will also be used to enable the DG-AEN and ANAM to generate climate projection scenarios (over 25, 50 and 100 years) and climate change impact scenarios for key economic sectors in the Nakanbé basin. This will enable the DG-AEN to improve its understanding of climate change impacts and associated physical and economic vulnerabilities. 30. Finally, LDCF resources will be used to develop a decision support tool (DST) based on a decision tree-type model, with multiple options to guide government decision makers in selecting and planning appropriate adaptation options for the Nakanbé basin. This will take the form of an interactive software-based system developed for DG-EAN. It is intended to help decision makers compile useful information from a combination of raw data, documents and personal knowledge generated by the project to identify and solve problems and make decisions related to suitable adaptation measures for the Nakanbé basin.

Indicative activities: Activity 1.1.1: Equip and operationally strengthen ANAM, DGRE, AGROMET and the DG-AEN to collect, analyse and disseminate weather and hydrological forecast information in the Nakanbé Basin; Activity 1.1.2: Develop a training program on the practical use of agromet advisory and early warning systems for local authorities and

communities;Activity 1.1.3: Conduct training for the DG-AEN and ANAM on generating climate projection and climate impact scenarios in the Nakanbé basin; and,Activity 1.1.4: Develop a DST, together with the DG-AEN, to guide the selection and planning of appropriate adaptation options for the Nakanbé basin.

Output 1.2: Harmonized vulnerability assessment is carried out and a suitable adaptation strategy is developed for the Nakanbé River environment to increase community resilience.

31. This output will provide the leading institution DG-AEN and other land users (local associations, NGOs and CBOs) the capacity to assess the status of local natural resource degradation (including soils, vegetation and water), understand the interaction between natural resources and climate variability, and use this information to develop future land use and adaptation plans. Using project funds, community participatory vulnerability assessments (CPVA) will also be undertaken for the five target communes. The purpose of these assessments is to determine the key climate hazards, risks, exposure, community and sector sensitivity, and current adaptive capacity in the Nakanbé basin. Project funds will be used to strengthen the DG-AEN's institutional capacity to formulate and analyse adaptation policy options, develop multi-sectoral adaptation strategies, and implement action plans. This institutional capacity-building process requires the provision of equipment (including ArcGIS software, computers and advanced workstations, GPS, and digital cameras). It also includes staff training programmes on vulnerability and risk assessments and on the use of digital information, including mapping. Using climate projection models and climate impact models, such as the CMIP5, these officers will be trained to create hazard, vulnerability and risk databases for the sub-catchments of the Nakanbé basin, starting with the five major sub-catchments of Kaya, Ziniaré, Zitenga, Absouya and Korsimoro. 32. The Nakanbé basin vulnerability assessment will use climate projection scenarios (over 25, 50 and 100 years) and climate change impacts analysis for key sectors, communities, ecosystems and infrastructure generated in Output 1.1. The interactions between identified hazards and vulnerabilities/risks under the projected scenario will be assessed systematically. Historic flooding and erosion data combined with potential flood areas and natural features of the landscape can help communities and government decision makers determine where impact and damages are likely to occur. In support of the risk identification and vulnerability assessment, LDCF resources will also be used to set GIS technology and acquire satellite images or aerial photographs to support DG-AEN in erosion risk mapping in the five targeted sub-catchments. This will increase the current resolution at lower cost and help identify/characterize key erosion hotspots and support the development of a baseline map of natural hazards and risks to critical infrastructure, natural resources and populations. The community vulnerability analysis under the projected climate scenarios (over 25, 50 and 100 years) will enable multi-sectoral adaptation strategies and measures to be developed under the given climate scenarios for the five target communes.33. Finally, project funds will be used to set up an interactive user-friendly web portal under the DG-AEN to share the vulnerability and risk mapping information collected via this output with other interested parties at the national and basin level (all GoBF ministries/departments, academia, NGOs and CBOs). This, among other means, will serve as a dedicated vehicle to disseminate vulnerability mapping and risk assessment conducted in the target communes, as well as key project results. Consultations will be held with stakeholders supporting the access to climate information in Burkina Faso to ensure no platform is already available and avoid the multiplication of specific platforms.

Indicative Activities:Activity 1.2.1: Conduct CPVA with the involvement of the DG-AEN and local stakeholders;Activity 1.2.2: Set up GIS and acquire satellite images or aerial photographs and carry out erosion risk mapping in the five priority sub-catchments;Activity 1.2.3: Train DG-AEN to formulate and analyse adaptation policy options, develop the multi-sectoral adaptation strategies, and implement action plans; Activity 1.2.4: Undertake vulnerability assessment for the Nakanbé basin and climate change impacts analysis for key sectors, communities, ecosystems and infrastructure; and,Activity 1.2.5: Set up an interactive user-friendly web portal for the DG-AEN to disseminate vulnerability and risk mapping information.

Output 1.3: A communication and institutional framework is available to disseminate warnings to rural populations in five vulnerable communes (Kaya, Ziniaré, Zitenga, Absouya and Korsimoro).34. An EWS structure was developed under the LDCF EWS project. It includes: (i) a risk/hazard/vulnerability information unit (including members from the DG-

AEN, DGRE, ANAM); (ii) a warning, alert and advisory (WAA) generation unit (ANAM, DGRE); (iii) a WAA dissemination unit (CONASUR); and, (iv) a WAA response unit (Civil Protection, DG-AEN, Agromet). The LDCF EWS project also supported CONASUR in designing SOPs for alert communications to improve the understanding of forecasts by clarifying scientific jargon (in meteorology and hydrology) and simplifying messages for dissemination. The SOP and a formalized national alert guide with thresholds were developed and toll-free numbers to disseminate alerts to end-users were established. However, the activities were limited to building CONASUR's capacity at national and regional levels and did not reach the local level. As a result, the technical and operational capacities to disseminate warnings among local disaster risk management units in the Nakanbé basin remain limited. 35. The Nakambe project, under the leadership of CONASUR, will build on the results of the LDCF EWS project and establish a communication and institutional framework to disseminate warnings to end users (including vulnerable communities) in the Nakanbé basin. Under this output, the existing SOP will be strengthened by revitalizing harmonized agreements and interagency protocols for the development of sectoral early warning products, including color-coded advisories and warnings for flood, drought, severe weather and agricultural stresses. The strengthened SOPs will guarantee efficient interagency coordination and ensure consistency of early warning management (language and communication channels where different hazards are handled by different agencies) at the local level in the Nakanbé basin. 36. The weather and climate stations installed in the five pilot locations under Output 1.1, managed either by ANAM, the DGRE, the National Observatory of the Environment and Sustainable Development (ONEDD) or the agricultural sector will constitute pilot community-based EW systems (CB-EWS). Project funds will be used to support dissemination to remote areas using adequate channels (e.g. meteorology application software, such as FrontlineSMS-based NetApp). This will enable users in the five vulnerable communes of Kaya, Ziniaré, Zitenga, Absouya and Korsimoro to receive ANAM/DGRE climate information and products, including early warning messages and advisories for anticipatory planning. In addition, local community radio stations in the five target communes will be equipped with equipment/battery/solar or wind energy sources to strengthen the dissemination of warnings in local languages, particularly to less literate community groups (farmers' and women's associations). 37. Through local CONASUR committees, local knowledge related to flash floods and response in case of extreme rainfall events will be gathered and incorporated into the scientific knowledge of weather and climate forecasting. The objective is to adapt ANAM's and DGRE's forecasting and information dissemination practices so that they are accessible to communities, using local, indigenous vocabulary that expresses key extreme weather and climate events. Project funds will target CONASUR and Civil Protection to develop contingency plans in the five pilot communes and will be used to help conduct at least two drills per year to test emergency communications preparedness and the effectiveness of contingency plans in the five target communes.

Indicative Activities:Activity 1.3.1: Establish a communication and institutional framework to disseminate climate information and tailored early flood and weather forecast to the DG-AEN and communities in the Nakanbé basin;Activity 1.3.2: Strengthen SOPs to establish and operationalize a multisectoral structure under CONASUR in the Nakanbé basin;Activity 1.3.3: Establish a mechanism to issue warnings, alerts and advisories via SMS to remote communities for anticipatory planning;Activity 1.3.4: Strengthen local community radio station capacities for climate information dissemination to community groups;Activity 1.3.5: Support CONASUR to develop early warning contingency plans in the five target communes; and,Activity 1.3.6: Support CONASUR, ONEDD and Civil Protection to conduct at least two drills per year.

Output 1.4: At least seven hydrologists, five civil protection workers, four meteorological maintenance technicians and 10 provincial government officers are supported to develop and implement flood/drought forecast and manage disasters.38. With LDCF funding, the project will, under the leadership of ANAM, fill the skill and expertise gap for targeted staff across partner institutions in terms of flood/drought forecast and disaster management. An internal training needs analysis (TNA) will be carried out for stakeholders, such as ANAM, DGRE, DG-AEN and Civil Protection, to further identify key skills needed to implement the project activities successfully (weather and climate monitoring, flood warning and alert development and dissemination, vulnerability, disaster risk assessment, and response mechanisms). At least seven hydrologists will be trained to produce flood/drought

forecasts for the Nakanbé basin, including capacity development/training and data monitoring, collection network, transmission, data archiving, analysis, exchange, and modelling. 39. Five civil protection workers will benefit from an upgrade to the current system for the dissemination of disaster preparedness messages and current response plans at the local level. In addition, recovery capacity will be strengthened, including through equipment purchase (e.g. boats and five VHF radios for communication and dissemination of disaster preparedness advice). The exact needs will be defined after the contributions from other ongoing parallel programmes are assessed to avoid duplication. 40.

Four maintenance technicians (within DG-AEN, ANAM, DGRE and CONASUR), including at least one HPC maintenance officer (ANAM), will be trained to support the monitoring (existing and future automatic weather/climate stations) and dissemination network. Specialized training and technology transfer will be conducted to develop skills in the use of new software and methods of hazard, risk and vulnerability modelling and mapping, cost-benefit analysis, installation and training in the use of hardware (hydro-meteorological stations, rainfall gauges). A training programme will be developed to assist government institutions to maintain the equipment used to monitor flood- and drought-related variables, such as automatic weather station sensors, transmission units and data archiving units. The trained officers will also be equipped with the necessary software packages and equipment, including two advanced workstations to assist climate and river monitoring management, one widescreen monitor for data control and display, advanced GIS with facilities/tools/programme and software (ArcGIS 9.2 or higher and Spatial Analyst extension, if possible). 41. Finally, 10 provincial government officers (at least four DG-AEN staff) will be trained to execute, collate and process data and information, carry out vulnerability and risk assessments in the Nakanbé basin, and systematically streamline digital information, including mapping. Output 1.4 Indicative Activities: Activity 1.4.1: Conduct an internal TNA for ANAM, DGRE, DG-AEN and Civil Protection; Activity 1.4.2: Train seven hydrologists to produce flood/drought forecasts for the Nakanbé basin; Activity 1.4.3: Train and upgrade the equipment of five civil protection staff at the provincial level; Activity 1.4.4: Train at least four maintenance technicians to support monitoring and the dissemination network; Activity 1.4.5: Acquire equipment and software packages for DG-AEN, ANAM, DGRE and CONASUR to systematically streamline digital information, including mapping; and, Activity 1.4.6: Train 10 provincial government officers to carry out vulnerability and risk assessments in the Nakanbé basin.

COMPONENT 2. Increasing community resilience to climate-induced risks and variability Outcome 2: Smallholder farmers adopt climate risk management and sustainable forestry practices

42. Outcome 2, under the overall leadership of CNDD, will increase community resilience to climate-induced risks and variability. This will be achieved via access to: (i) innovative climate change adaptation responses, such as sustainable agricultural and forestry practices in watersheds to increase vegetation coverage, reduce erosion, improve the efficiency of water use in agriculture and reduce vulnerability to drought and flood (output 2.1); and (ii) innovative financial mechanisms to strengthen local beneficiaries in entrepreneurship, product marketing, managing value chains, and accessing financing and credit. Given the widespread poverty and lack of investment in the basin, LDCF resources will also be used under the guidance of DG-EAN to offer grants to CLEs for productive livelihood initiatives and to create micro-enterprises (Output 2.2). Priorities include diversifying crops, introducing drought- and flood-resilient crop options (particularly for sorghum and food crops), and adapting fishing practices to climate variability (Output 2.3). Based on the needs that basin communities and their representatives expressed during the PPG period (see Annex 14 for further details), small-scale activities are expected to maintain incomes during periods of climate shocks. Finally, the LDCF grant will be used to strengthen the capacities of MFIs to deliver credit and other financial products to climate-resilient micro-enterprises (Output 2.4). Output 2.1: Ecosystem-based adaptation initiatives, including bank terracing and plant buffers, are established to rehabilitate riverbanks and reduce soil erosion in five priority sub-catchments of the Nakanbé.

43. This output, under the leadership of CNDD, will contribute to improving the land use practices that local communities in the Nakanbé basin use to reduce erosion caused by

climate change. This output will identify improved land uses for rehabilitation, based on the results of the vulnerability and risk assessment (Output 1.2) and implement these ecosystem rehabilitation actions. In the first place, the project will conduct sensitization activities for targeted communities. Often, communities are not aware of the risks their practices pose on the resilience of their environment and sensitization will ensure the ownership of the activities in the long term. This will include sensitization on the use of pesticides, the deforestation for fuelwood or agriculture, alternative options, etc. 44. Rehabilitation activities will include: (i) reforestation/afforestation with indigenous tree species; (ii) digging soil ditches and water retention barriers; (iii) strengthening drainage systems; (iv) planting grass strips between fields to promote water conservation; (v) establishing inter-cropping systems, including trees that provide fruit for local consumption and transformation; (vi) stabilizing soil and erecting wind breaks and other forms of erosion control; and, (vii) building dykes and bunds to protect fields against flooding. Water management will also be improved through drainage (e.g. ridging, contouring and terracing) and designing and implementing local water management plans and awareness activities. Demonstration sites piloting EbA through reforestation/afforestation and the restoration of degraded ecosystems will be carried out primarily at Dem Lake. It has been classified as a RAMSAR site and is an important natural structure for microclimate stabilization, groundwater replenishment, flood control, riverbank stabilization, sediment and nutrient retention, and storm protection, and provides other major ecosystem services that support the livelihoods of local communities. This project will protect 50 km of river and lake bank around Dem Lake through permeable rock dams (PRDs), using a variety of priority approaches (including bank terracing, planting vegetative buffers to increase infiltration and reduce erosion, implementing techniques to protect the shoreline against animal intrusion and planting fruit trees) to increase infiltration and reduce erosion. 45. The classified forest of Bissiga (41 km<sup>2</sup>) represents another area of intervention. Over the years, the forest has suffered increasingly from advanced degradation due to the impact of climate variability and change and the systematic encroachment caused by pressure from populations whose available farming land was reduced when the Ziga dam was built. According to Burkina Faso's National Council for Sustainable Development (SP-CNDD), restoring this forest is the primary concern within the project area, given its socioeconomic importance for local communities that rely on the forest's NTFP-producing trees (including néré, karité, baobab and kapok). Project funds will thus be used (i) to restore part of the degraded area (up to 200 ha) where runoff and erosion phenomena are most acute and threaten forest growth, production and collection of NTFP resources, and (ii) to restore a separate area of forest - approximately 8km<sup>2</sup> - around the sub-basins (Ziga and Absouya), where the populations have been logging to obtain fuel for household energy. This forest restoration will involve participatory village community plantations ("village forests") using a PRD approach for land conservation (to retain the water and reduce the erosion that might uproot the planted seedlings), in partnership with local women and youth associations and NGOs.46.

Nurseries will be established in Absouya, Bissiga, Ladwenda, Korsimoro and Dem, with the participation of community members, to support the afforestation, reforestation and agroforestry activities to increase infiltration and reduce erosion. Before the establishment of the tree nurseries, the project team will consult with authorities at the local level to ensure that previous similar initiatives are not left aside and to ensure the project will build on what already exist. In particular, where nurseries already exist, the project will work in extending or strengthening it. The nurseries are expected to produce plants for:

- 45 ha in Absouya - communal forest;
- 250 ha in Korsimoro Nakanbé - classified forest;

- 45 ha in Ladwenda - wood energy; and,
- 45 ha in Bissiga - wood energy;47. The project will also explore the possibilities to introduce nutritive gardens for the reproduction and expansion of tree varieties, instead of traditional tree nurseries. This implies the selection of highly nutritive tree varieties, providing food complements for children even during the first years of the tree (ie. baobab leaves), that are later replanted in surrounding areas when mature for the collection of NTFP. This will require a strong local ownership and the project will also explore the possible engagement of local cooperatives. 48. Finally, 14 village forests will be developed in five priority sub-catchments of the Nakanbé Basin to satisfy the communities' subsistence and income-generation needs. These forests are planted with species selected based on the needs of the populations (energy, NTFP...), such as *Eucalyptus camaldulensis*, *Azadirachta indica*, *Senna siamea* (formerly *Cassia siamea*), *Tectona grandis*, and are managed by the village forest management groups (Groupements de

Gestion Forestière). To ensure the sustainability of the activities in these village forests, the communities will be supported under activity 2.4.2 to access financing when the activities are considered profitable (ie. with the opening of shops, the transformation of the products). The diagnosis of the business ecosystem of value chains conducted under the output 2.2 will also provide information on the resources that are currently procured from outside for the transformation of some products and evaluate the options to introduce these resources in the targeted areas (this is the case for the Nere seeds, used for the production of soumbala, or for tamarind). Indicative Activities: Activity 2.1.1: Sensitize local communities on inadequate land management practices; Activity 2.1.2: Protect 50 km of river and lake bank around Dem Lake through PRD; Activity 2.1.3: Restore up to 200 ha of the classified Bissiga forest NTFP-producing trees (including néré, karité, baobab and kapok); Activity 2.1.4: Restore 50% (~8km<sup>2</sup>) of vulnerable sites (impacted by encroachment) of the Bissiga classified forest in the Ziga and Absouya sub-basins; Activity 2.1.5: Establish tree nurseries for afforestation, reforestation and agroforestry activities in Absouya, Korsimoro Nakanbé, Ladwenda and Bissiga; Activity 2.1.6: Introduce nutritive gardens; and, Activity 2.1.7: Develop up to 14 village forests in five priority sub-catchments of the Nakanbé.

Output 2.2: Livelihood grants provided to at least five local structures in the Nakanbé basin to set up micro-enterprises for livelihood diversification.<sup>49</sup> Following the issuance and adoption of the political letter for decentralized rural development in 2009, CCCos have been created at the level of each commune as a forum for exchange and coordination of interventions between the municipality and other stakeholders. A decree specifies the participating members for each CCCo, and, when available, CLEs are invited to participate to the local CCCo. The involvement of the CLEs in the CCCos is a key element of the project and will need to be confirmed and officialized at the beginning of the project to ensure they receive adequate training and provide relevant advice to the CCCos. Their guidance will be critical for the formulation and implementation of development plans integrating Climate Change Adaptation (CCA) and for the development of clear CCA investment plans (CCA-IP), with a particular focus on the water sector. These plans will provide the constituting members of the CCCos and the municipal councils with the means to identify the adaptation needs of communities under their jurisdiction and prioritize, coordinate, plan and take ownership of the necessary actions to increase the adaptive capacity and resilience of their livelihoods.<sup>50</sup> During the inception phase of the project, the CCCos in the five targeted sites will gather to identify the most adequate existing structure that will support the development of alternative livelihoods and the set up of micro-enterprises for the identified most vulnerable communities. These structures will also benefit from trainings on adaptive practices (including EbA practices) and entrepreneurship for more sustainability and upscaling. <sup>51</sup> Under this output, a diagnosis of the business ecosystem of value chains around the Nakanbé basin under the control of the communes crossed by the basin will be conducted, including on the gaps that need to be addressed (activity 2.2.2), with a focus on the resources identified as having a comparative advantage in Burkina Faso (ie. cereals, particularly rice, fruits and nuts, peanuts and shea, niébé, beans, oilseed and sesame crops, NTFP, as well as livestock) . The diagnosis will identify and improve the knowledge on (i) the level of structuration of each value chain, (ii) the level of organization of the stakeholders, (iii) existing markets and opportunities for an improved access, (iv) the challenges – particularly the gaps in financing, (v) the internal strategies developed to face those challenges. The diagnosis will then issue recommendations for improvements to strengthen the value chains. Based on the experience of UNCDF in Burkina Faso, creating well-structured cooperatives is increasingly recommended to take advantage of training opportunities and economies of scale and to have a better control of prices. The development of cooperative grouping multiple producers could also partly address some of the logistic challenges (including limited access to the market for remote populations). Possible Public-Private Partnerships (PPP) could be developed with value chains that are already well organized under cooperatives (sesame, shea, gombo) and explore the development of more organized value chains (ie. NTFP). This partnership would improve the access to markets, and therefore ensure a increased sale of products. <sup>52</sup> LDCF resources will also be used under the leadership of DG-EAN, and based on the results of the diagnosis, to provide grants to selected adequate local structures to finance: (i) productive livelihood initiatives and other income generating activities; (ii) micro-enterprises; and, (iii) farming infrastructures for vulnerable communities under the CCCos. LDCF resources will thus also be used to strengthen CCCos and CLEs' capacity to assist target communes to implement

these three mandates. A specific focus of this output will be to provide grants to selected adequate local structures in support of local women vegetable producers' micro-enterprises to help them improve production and storage capacity (including poultry, onions, garlic, mango and potatoes). Some of the products perish easily due to increasingly high temperatures and the communities have expressed the need to strengthen local capacity to process perishable products, and to introduce cold storage, or improved stoves when relevant. These structures will thus receive grant support to help local women and youth micro-enterprises to improve product processing capacity (for products including shea, sesame, dried fruits, dried vegetables, cheese and meat). The DG-AEN will also issue a call for proposals for the vulnerable people in the five target communes, focusing on women and youth, to finance IWRM micro-enterprises for adaptive livelihoods. This call for proposal will be conducted with technical support from the CLEs, including for the review of proposal and the support to beneficiaries for improved proposals. The project will also build on the experience of UNCDF in supporting micro-enterprises in vulnerable communities. UNCDF has extensive experience involving most vulnerable communities, in particular women in village forests enterprises. This includes trainings that the Reclim project can build on to support the activities under this output. Output 2.2 Indicative Activities: Activity 2.2.1: Provide trainings/technical assistance to CCCos to develop, assess and implement development plans and CCA-IP; Activity 2.2.2: Carry out a diagnosis of the business ecosystem of value chains; Activity 2.2.3: Provide training to CCCos and selected local structures to support the implementation of adaptive livelihoods for the most vulnerable communities; Activity 2.2.4: Provide grants to selected local structure to identify and finance the development of alternative livelihoods; Activity 2.2.5: Provide grants to selected local structure to support local women vegetable producers' micro-enterprises; and, Activity 2.2.6: With the support of selected adequate local structure, and CLEs technical guidance, issue a call for proposals focusing on women and youth-based IWRM-related micro-enterprises.

Output 2.3: Climate resilient varieties of drought/flood resistant seeds are disseminated to selected farmers, supported by seasonal climate forecasts.<sup>53</sup> According to the World Bank and IFC, Burkina Faso has a comparative advantage that is not fully seized in cereals, particularly rice, fruits and nuts, peanuts and shea, oilseed and sesame crops. Under output 2.2 a diagnosis of the business ecosystem of value chain will help identify the potential of these resources for the sale to broader markets – including international – and will, in turn, provide recommendation on the selection of most adapted crops (both in terms of resilience and market opportunities). LDCF resources will therefore be used, under the guidance of DG-EAN, to support the screening and uptake of locally specific, climate-resilient varieties of drought- and flood-resistant seeds suited to the basin's ecological conditions, with a possible focus on these resources. Five demonstration sites will be established with the support of rural extension services (one in each of the target communes) for in-situ characterization of the identified locally specific varieties of drought- and flood-resistant seeds. Smallholder farmer groups/cooperatives/women's associations will then distribute the seeds, under the guidance and management of the rural extension services and the Regional Directorate for Agriculture and Hydraulic Improvement (DRAAH).<sup>54</sup> In addition, seasonal forecast information will be provided to farmers to help them improve decision-making to reduce their vulnerability to climate risks. This will be done in close coordination with Component 1. The activity will require packaging the information in a manner that is accessible to illiterate rural farmers. Community radio could be used to distribute the information, complemented by an SMS wherever possible. Project funds will thus be used to disseminate seasonal climate forecasts and advisories sourced by ANAM to support climate-resilient seed dissemination in the basin and extension outreach. The SMSs will deliver seasonal forecasts, supported by advice for farmers to help them make better decisions (for example, the best dates to plant/sow and when and/or whether to combat a particular pest).<sup>55</sup> Building on the SMS system put in place, initiatives could be explored, such as the one experienced in Ghana with e-Soko where a Public-Private Partnership (PPP) was established to provide weather forecasts, agronomic advice, market linkages, credit information and insurance coverage through SMS, voice SMS and call centre. This would rely on the results of the diagnosis analysis conducted under the output 2.2 and the training of key stakeholders for the provision of these services. The beneficiaries will also include the CLEs supported under output 2.2. A priority could be given to the provision of market advice (including market costs, the timing for the sale of the products based on the market demand or the connection with organizations and/or cooperatives to access a larger market)

and credit information and/or insurance coverage. UNCDF has already started some interventions working with tech companies to accelerate financial and digital innovations. The Reclim project will need to identify the potential for collaboration with UNCDF and build on the knowledge collected through their programming in Burkina Faso. Output 2.3 Indicative Activities: Activity 2.3.1: Establish five demonstration sites in farmer's plots, with one in each of the five target communes; Activity 2.3.2: Support dissemination of seed packets of characterized climate-resilient adapted seeds for multiplication; Activity 2.3.3: Develop and disseminate seasonal climate forecasts and advisories to support the correct use of climate-resilient seed; and, Activity 2.3.4: Explore options for the establishment of a PPP for the provision of weather forecasts, agronomic advice, market advice, credit information and/or insurance coverage

Output 2.4: Community-based enterprises are established and strengthened for women's and youth groups to access financing and credits, market products and manage value chains in the Nakanbé basin.<sup>56</sup> This output will support the structuring of young people and women into community enterprises and cooperatives (activity 2.4.1) to take advantage of the financial opportunities identified in the diagnosis conducted under output 2.2. As raised in the UNCDF report, "banks are more likely to lend to cooperatives (both crop and livestock) rather than individual farmers, as both costs and risks are lower". Based on UNCDF experience, the project will also provide trainings on the regulations on cooperative societies, including on the OHADA law that intends to harmonize practices for business laws in Africa. The community-based enterprises and cooperatives will also be supported to access finance (activity 2.4.2) with the setting-up and training of 250 savings groups and community enterprises to mobilize local savings, access formal financing to carry out / strengthen their activities or meet future individual and community needs. The village forests, supported under output 2.1 will be potential beneficiaries. Innovative approaches will be used for financial education (based on images and digital approaches), reflecting the fact that some adults are not literate. It is expected that a minimum of 30 million XOF (about US\$ 50,500) will be mobilized from domestic resources (informal savings) and will be collected for its reinjection into the formal local economic (MFIs) to finance medium and long-term investment projects. Digital channels will be promoted for the collection of savings and the access of finance. The project will also build on the exponential progress of mobile money agent outlets (500% increase in number between 2014 and 2017) that provides an opportunity for accessing financial products for local communities with no access to a bank account. There are two mobile money operators in Burkina Faso, Orange Money (provided by Orange) and Mobicash (provided by Onatel). Partnership with mobile money operators in Burkina Faso could be explored to develop the access to other financial products than payments (ie. insurance, agricultural subsidy payments to farmers, credits). The recommendations issued in the UNCDF report "Making Access Possible: Financial Inclusion Diagnostic Report" conducted in 2017 can provide useful guidance for the development of mobile money use in this context.<sup>57</sup> This output will also support the training of 500 farmers and informal business owners (50% of whom are women and 25% of young people) to use digital technology (activity 2.4.3). For behavioral changes and the adoption of good farming and management practices, financial education themes, and additional specific themes will be digitized and used as a communication and capacity building support by and for the people around the Nakanbé basin. Topics that could be addressed are: financial education, value chain approach and specific topics of watershed protection. These themes will then be digitized to reach a larger audience in a context of insecurity and contribute to the proper management of revenues and business planning. UNCDF has experience in Burkina Faso in promoting digital means for micro-savings for women and the financial inclusion of vulnerable communities. The project will build on the lessons learned of these experience (ie. by involving UNCDF in the trainings or using the materials produced by UNCDF) to conduct this activity.<sup>58</sup> 100 young entrepreneurs (50% women) will be trained in entrepreneurship / business creation and market access in each pilot commune (Kaya, Zitenga, Ziniaré, Absouya and Korsimoro) (activity 2.4.5). To increase self-employment in the business ecosystem around the Nakanbé basin, modules in entrepreneurship, business creation, negotiations with Financial Institutions, business planning, accounting, group purchases and sales, etc. will be developed, digitized and disseminated to the various actors. Based on the high-potential products identified in the WB and IFC report, the entrepreneurs will be equipped to develop the value-chain of these products. This will include the

distribution of the needed equipment such as cold storage (for meat and other products) or transformation units for shea, hibiscus, baobab.<sup>59</sup> These trainings and activities will be completed with the involvement of finance institutions (activity 2.4.6). Under UNCDF, this output will facilitate access to several financial instruments (financing through value chains, purchase contracts, agricultural insurance, warehouse receipts). It will be conducted through the establishment of partnerships with Finance Institutions, particularly Microfinance institutions (both in the form of cooperatives – mutuelles – or Société Anonyme – SAs), banks, mobile money operators and technology companies (fintech, agritech, etc.). One of the challenges would be to facilitate access to productive investments using affordable energy services. To this end, grants and technical assistance will be made available to MFIs in collaboration with FinTech to develop sustainable business models for facilitating investments. Another focus of the trainings will be on bank collaterals to align with the specific reality of local households and businesses. Output 2.4 Indicative Activities: Activity 2.4.1: Establish Community Enterprises or cooperatives with a specific focus on women and youth; Activity 2.4.2: Structure Community Enterprises or cooperatives to facilitate access to finance; Activity 2.4.3: Train 500 farmers and informal business owners (50% women and 25% youth) to use digital technology; Activity 2.4.4: Train at least 100 young entrepreneurs (50% women) in entrepreneurship / business creation and market access in the five pilot communes; Activity 2.4.5: Establish partnerships with finance institutions and mobile money operators. Activity 2.4.6: Training target communities, MFIs and local community radios

A1.5) incremental/additional cost reasoning and expected contributions from the baseline, LDCF, and co-financing;<sup>60</sup> The project will support the adoption of a watershed approach that focuses on Burkina Faso's most vulnerable basin and addresses the vulnerability of ecosystems and community livelihoods to drought and flash floods. It will also connect the institutions at the national, regional and local levels and ensure the complementarity with other relevant national and regional initiatives.<sup>61</sup> If adaptation interventions in the Nakanbé basin are not adopted, national agencies and community organizations acknowledge that the basin's population will become increasingly vulnerable to climate variability and ecosystem degradation. Under the baseline scenario, watershed management in Burkina Faso's Nakanbé basin will remain unresponsive to climate change due to weak institutional and community technical and financial capacity and a political and legal framework that precludes the adoption of an integrated approach for adaptation. The proposed project approach will design and implement anticipatory measures to reduce the risks posed by floods and droughts on vulnerable sectors, including water management, agriculture, livestock, forestry and food security. The proposed strategy calls for a paradigm shift to address the increasing risks posed by floods and droughts. It will improve institutional capacity to develop flood and drought forecasts in a timely manner and disseminate warnings, alerts and advisories to end users, including vulnerable communities of the Nakanbé basin. This will, in turn, strengthen local capacity to respond effectively to and manage climate change risks that threaten ecosystem services, water resources, agricultural production and livelihoods.<sup>62</sup> The project will result in the establishment and operationalization of a flood forecast and early warning system at basin level, improve watershed ecosystems, and restore ecological function through the use of ecosystem-based approach (EbA) strategies such as community forestry and agro-forestry. Community livelihoods will be made more climate resilient, particularly by adopting practices that will minimize the effects of drought and erosion, as well as seasonal variability. The diagram below presents the project's theory of change (ToC) and shows how the project's output activities (inputs) can remove current barriers to achieve transformational change.<sup>63</sup> This theory of change has been developed to counteract the trend under the baseline pathway. Under this baseline pathway, the risk of impacts to life, property, economic assets, livelihoods and food security in this vulnerable basin from frequent flood and drought would continue to increase. With this project, it is expected that 66,198 residents of the five target communes and approximately 219,962 inhabitants of the two watersheds of Oubritenga and Sanmatenga will be made more resilient. Component 1 will ensure that improved technical capacity – skills, methods and technologies to assess the hazard, risk and vulnerability to flood and drought - is developed. This will be achieved via a fully operational flood forecast and early warning system to aid anticipatory planning and prioritization of watershed management interventions. Component 2 will contribute to building the capacity of local community

organizations (CLEs and women's and youth associations) to take up the advisories disseminated and implement adequate adaptation measures accordingly. This will be complemented by the adoption of EbA practices in the Basin, to reduce the impacts of floods and droughts on communities' livelihoods.<sup>64</sup> The ToC includes key assumptions that were taken into account for the design of the project strategy, such as:

- Additional human capacity to develop the EWS components;
- Effective dissemination mechanisms are available for warnings and alerts to reach end users at the community level in the Nakanbé basin;
- ANAM and DGRE maintain a functional hydromet network to support the EWS;
- GoBF institutions engage in the project implementation process in a coordinated and constructive fashion;
- Communities are willing to collaborate in project implementation; and,
- Technical expertise is available at the basin level to support the project implementation tasks, including data collection, technical support, training and capacity building.<sup>65</sup>

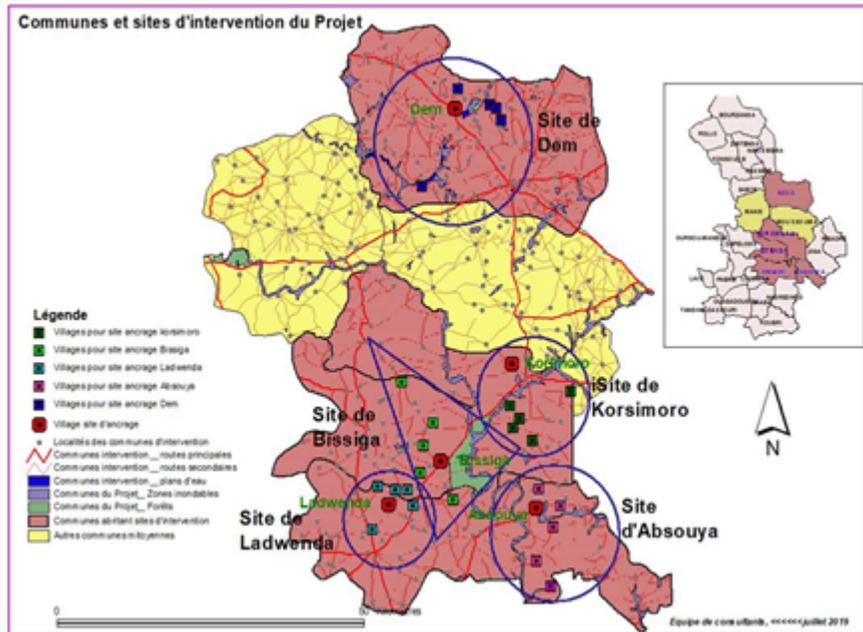
The project's main focus (long-term outcomes) is two-fold: (i) to strengthen existing climate change information by upgrading the existing EWS and establish a flood forecasting EWS that reduces the risks of flood and drought in the Nakanbé basin; and (ii) to strengthen community livelihoods and ecosystem resilience to climate-induced risks and variability in the Nakanbé basin.<sup>66</sup> The expected long-term objective the Réclim project is to increase the resilience of Nakanbé basin communities by safeguarding lives and livelihoods from droughts and floods. This will be achieved if certain assumptions are met and barriers addressed. Key assumptions include (i) the financing and investment necessary to maintain the network, which will fall under the Government's contribution to ensuring the system's sustainability; and (ii) the budget allocations needed to cover staff retention and equipment maintenance. <sup>67</sup> The Government's engagement to maintain an institutional and political commitment after the project ends will also be a key element to ensure the project sustainability. This includes: (i) the need for continuous, local dissemination of warnings and alerts at the basin level; and (ii) the need for institutional leadership and political commitment at the national and basin levels to invest in these warning systems. <sup>68</sup> Overall, the project's activities will improve awareness about climate change impacts in the Nakanbé basin, particularly in the water sector, rural development, and agriculture and food security, and will support effective adaptation practices. In the long-term, the EWS and the adaptation measures are expected to contribute to reducing economic losses and increasing productivity, thereby directly supporting climate-resilient development in the Nakanbé basin.

A1.6) Adaptation benefits;<sup>69</sup> The project area encompasses classified RAMSAR site such as at Dem Lake an important natural structure for microclimate stabilization, groundwater replenishment, flood control, riverbank stabilization, sediment and nutrient retention, and storm protection. It provides other major ecosystem services that support the livelihoods of local communities. This project will protect 50 km of river and lake bank around Dem Lake through permeable rock dams (PRDs), using a variety of priority approaches (including bank terracing, planting vegetative buffers to increase infiltration and reduce erosion, implementing techniques to protect the shoreline against animal intrusion and planting fruit trees) to increase infiltration and reduce erosion. In addition, the project forest restoration activities of this project include the renovation through planting and land management of 50 percent (~8km<sup>2</sup>) of Bissiga classified forest in the Ziga currently considered as vulnerable sites (impacted by encroachment) in the Absouya sub-basins.

A1.7) Innovativeness, sustainability and potential for scaling up<sup>70</sup> This Réclim project will build on the recently closed UNDP LDCF EWS project - particularly Outcome 1 - by enhancing the capacity of ANAM, DGRE, DG-AEN, AGROMET and communities via several additional training and capacity development initiatives that require minimum equipment installation. All these activities will be automatically absorbed by the existing institutional framework. Specifically, the project will support these national institutions to strengthen their engagement in collecting, analysing and disseminating hydro-climatic information. This will be achieved through technical assistance to strengthen public policies on EWS and a series of trainings on (i) collecting, analysing and disseminating hydro-climatic information and issuing alerts through appropriate channels; (ii) using and applying forecasting models; and, (iii) the impacts and risks of climate change. In addition, SOPs designed under the UNDP LDCF EWS will be strengthened to ensure coordination among the different levels (regional to local) and, thus, respond efficiently to alerts. The increased understanding of these systems and their need, combined with improved coordination among the key actors at the local level in the Nakanbé basin, will ensure that useful hydro-climatic information is disseminated efficiently and over the long term, and the gaps of the UNDP

LDCF EWS will be taken into account to increase the sustainability of the interventions. 71. The ecosystem-based approach, including reforestation and afforestation and the characterization and dissemination of climate-resilient adapted seeds, to be implemented under Outcome 2 will be supported by capacity-building activities to strengthen the ownership and institutionalization of these measures at the local level. This will ensure the long-term viability, sustainability and scaling up of the adaptation actions across the Nakanbé basin. Strengthening the overall expertise of decentralized government staff on vulnerability and climate risk management will facilitate the scaling up and dissemination of the tools for integrating adaptation into the development process. The establishment of ‘inclusive’ value chains and increased value addition for key crops included in Outcome 2 is in line with the GoBF’s strategy and priorities to increase local production and reduce post-harvest losses. This initiative, combined with increased access to credit through microfinance and microinsurance products, will scale up the effects of this initiative and further strengthen the ownership and future sustainability of the proposed adaptation options.72.

Innovative approach will be tested in the Nakanbé Basin, building on the existing opportunities in Burkina Faso, such as the development of mobile money, and more broadly the development of mobile use and network coverage. The development of PPPs will be explored to improve access to climate and agromet information and advice as well as market information using mobile phones. The different trainings and sensitization workshops for vulnerable communities will also give the opportunity to grant and credit beneficiaries under outputs 2.2 and 2.4 to develop innovative practices for improved and more resilient livelihoods.73. The project will also conduct cross-community peer review, learning and sharing mechanisms to support replication and up-scaling in other vulnerable communities, as well as exchange visits and knowledge experience sharing for the capacity-building activities. The project will also collaborate closely with UNCDF, which has extensive experience in promoting the private sector in Burkina Faso, as well as increasing access to microfinance for vulnerable communities, in particular women.



B.1. Project Map and Geo-Coordinates.

Figure 2. Burkina Faso and its five most vulnerable communes in Ouhritenga and Sanmatenga provinces: –Kaya (1): Site de Lac Dem, –Zitenga (2): Site de Bissiga, –Ziniaré (3): Site de Ladwenda, Absouya (4): Site d’Absouya and –Korsimoro (5): Site de Korsimoro.

A.2. Child Project?

**If this is a child project under a program, describe how the components contribute to the overall program impact.**

n/a

A.3. Stakeholders

**Please provide the Stakeholder Engagement Plan or equivalent assessment.**

74. The project’s potential stakeholders and partners were identified and consulted during project development. Consultation was undertaken at the central and local government levels through field missions organized in the target areas, inception and validation workshops, bilateral meetings and surveys (all of this is detailed in the PPG

reports). The list of stakeholders consulted during the project preparation is provided in the PPG Reports (Annex 16) and the stakeholder engagement plan is in Annex 4. The summary of key stakeholders in the project formulation and implementation process, with their roles and contributions, follows (Table 3):

Table 3: Stakeholder matrix

Stakeholder identified	Relevant roles
National Emergency Relief and Rehabilitation Council (CONASUR)	<p>CONASUR is a national governmental organization in charge of coordinating disaster prevention, emergency management and rehabilitation actions. In this capacity, its role is to: (i) ensure implementation of the national organization and coordination of emergency relief and rehabilitation plan; (ii) advocate, mobilize and support the prevention and management of emergency relief and rehabilitation; (iii) adopt annual programs and activity reports; (iv) ensure the functionality of the reception and reintegration mechanism for emergency returners and large-scale internal migration; (v) propose any emergency measures to safeguard the rights of victims of natural disasters or other national emergencies. As part of this project, CONASUR will be responsible to disseminate alerts. It will coordinate disaster management actions related to extreme hydro-meteorological phenomena (floods and high winds) based on its presence in the regions, provinces and communes. It will also be responsible for relief organization.</p> <p>CONASUR will be the responsible partner for the output 1.3.</p>
Directorate General of Civil Protection (DGPC)	<p>In collaboration with CONASUR, the DGPC will be responsible to coordinate disaster management activities and recovery.</p>
National Observatory for Environment and Sustainable Development (ONEDD)	<p>ONEDD's main objective is to collect and process environmental information available in the country to promote and disseminate indicators, data and metadata. It will also be responsible to monitor relevant indicators of stress, impact and response in terms of the environment and sustainable development.</p> <p>ONEDD will provide the necessary institutional support to set up a pilot project community-based EW system (CB-EWS) and will be active in supporting dissemination of climate information and products, including early warning messages and advisories for anticipatory planning to these remote areas.</p>
National Council for Sustainable Development (CNDD)	<p>CNDD will coordinate the sustainable development project by playing a key role in supporting the project and by coordinating and synergizing with other projects, programmes and initiatives. It will also provide the necessary institutional support as the leading executing partner. The CNDD will act as Implementing Partner for this project under the MEEVCC.</p>

Stakeholder identified	Relevant roles
Nakanbé Water Agency (DG-AEN)	<p>The DG-AEN is responsible to coordinate actions to implement IWRM in the basin. As part of the project, the DG-AEN, through its various bodies (e.g. CLEs), will coordinate IWRM trainings and raise awareness of good practices in the basin. To that end, it will organize and lead foras of basin actors on key issues of vulnerability, risk and adaptation to climate variability. This agency will also support project activities for the preparation of vulnerability and risk assessments, using the climate projection model, the climate impact model and the vulnerability and risk assessment approach.</p> <p>The DG-AEN will act as Responsible Partner for the outputs 1.2, 2.2 and 2.3.</p>
Ministry of the Environment, Green Economy and Climate Change (MEEVCC)	<p>The Ministry of Environment, Green Economy and Climate Change (MEEVCC) guarantees the institutional coordination of environmental quality in Burkina Faso.</p> <p>In this regard, it ensures that the government's environmental and sustainable development policy is implemented and monitored. It is responsible for fire management in forest and rangelands and for monitoring performance against the UNCCD.</p>
Ministry of Agriculture and Hydraulic Facilities (MAAH)	<p>The Ministry of Agriculture and Hydraulic Facilities (MAAH) is responsible for conducting agricultural policy in Burkina Faso. It is organized into several directorates, including the General Directorate for Sectoral Studies and Statistics (DGESS), which houses the service that drives the early warning system and the regional directorates for local technical supports for farmers.</p> <p>As a supporting structure, the Executive Secretariat of the National Committee for Food Security (CNSA) is also involved.</p>
Ministry of Animals and Fisheries Resources (MAFR)	<p>MAFR is responsible to design and implement livestock and fisheries policies in Burkina Faso. It is organized into several directorates, including the General Directorate for Sectoral Studies and Statistics (DGESS) and regional directorates for local technical support for breeders and fishermen. It is one of main actors for National Food Security.</p>
Ministry of Women, National Solidarity and Family	<p>The Ministry of Women, National Solidarity and Family, through the Permanent Secretariat of the National Emergency Relief and Rehabilitation Council (SP/CONASUR) and its deconcentrated structures, ensures planning and implementation of emergency response and coordination of prevention activities among different sectors.</p> <p>The Permanent Secretariat of the National Gender Council, which seeks to mainstream gender in all sectoral ministries, is also relevant.</p>

Stakeholder identified	Relevant roles
Ministry of Territorial Administration and Decentralization and Social Cohesion (MTADSC)	The Ministry is responsible for local authorities (governors and local community councils). It is in charge of the local disaster management structures – CORESUR, COPROSUR, CODESUR and COVISUR – at regional, provincial, departmental and village levels, respectively. These structures will also be critical in disseminating early warning messages.
National Meteorological Agency (ANAM)	<p>This agency will improve coordination of the SAP’s activities. Its mission is to evaluate and monitor continuously the meteorological network in the basin and ensure the prevention and monitoring of extreme weather and climate phenomena in the Nakanbé basin. It will also participate in disseminating agro-meteorological information to farmers.</p> <p>ANAM will strengthen local technical and operational capacities (including CONASUR agencies, communes and, producer organizations) to disseminate alerts and understand the technical jargon of meteorological bulletins and other climate-related information.</p> <p>Under the project, ANAM will be responsible for:</p> <ul style="list-style-type: none"> <li>• agro-meteorological monitoring supporting agro-silvo-pastoralism and fisheries activities in the project's intervention communes;</li> <li>• developing daily and 10-day agrometeorological bulletins for the communes;</li> <li>• assessing priority needs for climate information services and communication channels;</li> <li>• designing context-specific climate information and services tailored to the needs of project beneficiaries;</li> <li>• providing climate services and information; and,</li> <li>• monitoring and evaluating beneficiaries’ use and effectiveness of climate information and services with a view to scaling up.</li> </ul> <p>ANAM will be the responsible partner for the output 1.1 and 1.4</p>

Stakeholder identified	Relevant roles
Directorate General of Water Resources (DGRE)	<p>The DGRE is responsible for the operation and maintenance of a hydrological monitoring network in the Nakanbé basin. Within the project framework, through its technical directorate, the DEIE, DGRE will be able to:</p> <ul style="list-style-type: none"> <li>• continue operationalization of the national water information system (SNIEau);</li> <li>• monitor and communicate regarding extreme events in real time (floods, droughts, etc.) for decision-making;</li> <li>• develop, in synergy with ANAM, a local early warning model (floods/droughts);</li> <li>• develop and periodically disseminate water information products;</li> <li>• contribute to updating water statistics;</li> <li>• support the partner structures to establish and promote, at the national level, a water information and monitoring system, uses, water-related risks, and water needs of the environment;</li> <li>• contribute to leading the environmental unit; and,</li> <li>• support all central and deconcentrated structures and all other actors in water resource management.</li> </ul>
General Directorate of Hydraulic Infrastructures (DGIH)	<p>The DGIH is responsible for studying, carrying out and/or rehabilitating hydraulic works (dams and reservoirs) for the benefit of the basin's population.</p> <p>Within the project's framework, the DGIH, through its technical department, will support vulnerable communities to build/rehabilitate dams and other associated infrastructure.</p>
PS/IWRM	<p>The IWRM Permanent Secretariat (PS) is responsible for IWRM implementation at the national level.</p> <p>Under the project, PS/IWRM could capitalize on the positive achievements made throughout the project implementation process. It will provide technical, material and financial support to central or deconcentrated technical structures and project stakeholders. Last, it could also initiate training actions on IWRM and related topics.</p>

Stakeholder identified	Relevant roles
National Office of Water and Sanitation (ONEA)	<p>ONEA is responsible to produce and distribute water in urban and semi-urban centres from underground (boreholes) or the water (dams). It is particularly involved in the Ziga (200 million m<sup>3</sup>), Loumbila (35 million m<sup>3</sup>) and Dem (4 million m<sup>3</sup>) dams, which are all in the project area.</p> <p>Under the project, it will play an important role in implementing activities linked to the protection of the waters and banks of these important water bodies.</p>
UNCDF	<p>The experience of UNCDF in the involvement of the private sector and the conduct of in-depth studies will be very valuable as lessons learned and building blocks to some of the activities, in particular under the output 2.4. In view of the potential for partnerships, the project team will work closely with UNCDF to develop synergies and consider UNCDF in the role of responsible partner.</p>
NGOs and civil society, including organizations and the Associations of Women of Burkina Faso	<p>NGOs such as the Women's Environmental Programme-Burkina Faso and Associations of Women of Burkina Faso will cooperate actively with the project during implementation. Their key aim is to protect and the promote environment, while addressing gender inequalities on issues relating to the environment and women's economic and social rights, among other objectives.</p> <p>Their role is to provide an interface between ministerial stakeholders and communes. The role of NGOs and civil society will be fundamental throughout the project, particularly in training and awareness-raising, and in the emerging partnership between the public and the private sector. They will also play a key role in disseminating climate products and services, including alerts, thereby mainstreaming gender equity and sharing project experiences. The project will also identify community organizations from the communes where the project will be implemented, including youth organisations.</p>
Community grassroots organizations and agricultural associations	<p>They are the main beneficiaries of the project services, since the project focuses on community-based management of climate risks. Grassroots community organizations will be the cornerstone of the production of the services and products of the entire project.</p>

Stakeholder identified	Relevant roles
Private sector organizations	<p>Insurance companies: Further discussions will be held with insurance companies (for example, Colina, Sonar, Générale des Assurances and UAB) to identify their interests in climate risk, micro-insurance, microfinance and weather information. Risk hazard maps may be of interest to insurance companies for more accurate premiums and payout calculations.</p> <p>Mobile phone companies: Telmob, Telecel and Zain may be interested in providing weather forecasts over the phone.</p> <p>Hydropower industry: SONABEL, ONEA and VBA are likely to use EWS alerts given their need to operate turbines and reservoirs based on extreme weather performance.</p> <p>Agro-businesses: the cotton and sugar industries (including, for example, SOFITEX and SOSUCO, respectively) may be interested in agromet advisories for drought onset, extreme rainfall events or irrigation scheduling,</p> <p>Technology companies (fintech, agritech, etc.):</p>

## Documents

Title

Submitted

**In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.**

. This is detailed in the table above

**Select what role civil society will play in the project:**

**Consulted only;**

**Member of Advisory Body; Contractor;**

**Co-financier;**

**Member of project steering committee or equivalent decision-making body; Yes**

**Executor or co-executor;**

**Other (Please explain)** No

#### **A.4. Gender Equality and Women's Empowerment**

**Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).**

75. The project will ensure the participation of the most vulnerable groups, including women, in the implementation process. Women and young people will be the main beneficiaries of the investments. To ensure the participation of the most vulnerable groups during project implementation, a gender analysis in the target communes and a detailed Gender Action Plan (included as Annex 11) were developed. Specific gender-disaggregated indicators will be used for monitoring and a gender specialist will intervene during project implementation to facilitate improvements to gender equality and women's empowerment.

76. In most Burkinabe communities, a patriarchal system dominates and dictates production. Women and children are simply seen as productive assets or, simply, an unpaid workforce that does not participate in decision-making. In addition, men are migrating increasingly to urban centres to find new income that will fill the gap caused by the reduced productivity of their previous livelihoods, leaving women responsible for the household.

77. The gender analysis has identified several factors that hinder the effective participation of women in the adaptation and resilience enhancement process: women in the Nakanbé basin are the primary victims of floods and droughts; their income from forest resource exploitation is low; and, they have very limited access to production, human capital, financial and extension services, equipment, agricultural inputs, technologies, and credits. These factors place a significant constraint on women's productivity. Lack of access to credit disadvantages women and young people in particular as they have difficulty finding mortgages to guarantee those credits. Indeed, women in the Nakanbé basin have extremely low access to credit to develop forest resource-based income-generating activities and to support the development of value chains.

78. This is the context in which the project outcomes were designed and will contribute to understanding how adaptation responses can strengthen gender equality. More specifically, women's and youth groups will receive priority for training and technical assistance to acquire the skills and tools to develop small-scale adaptive livelihoods. This includes training women and men in agriculture, forestry and fishery techniques, such as building irrigation systems and cultivating high-value crop varieties (Outcome 2). Furthermore, the project will implement other activities, such as disseminating seasonal climate forecasts and advisories (including SMS-based protocol), which will target primarily women's groups in the communes. Women's groups will lead ecosystem-based approach activities in the five target communes; specifically, running nurseries for seedling production (Output 2.1). In collaboration with the rural extension services and DRAAH, smallholder farmer groups/cooperatives/women will multiply locally specific, climate-resilient varieties of drought- and flood-resistant seeds (Output 2.3). Finally, specific grants to be awarded to local CLEs will give priority to local women vegetable

producers' microenterprises. By implementing this range of activities, the project seeks to mainstream gender issues and contribute to women's empowerment in the Nakanbé basin.

## Documents

Title

Submitted

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?**

Yes

**If yes, please upload document or equivalent here**

**If possible, indicate in which results area(s) the project is expected to contribute to gender equality:**

**Closing gender gaps in access to and control over natural resources;** Yes

**Improving women's participation and decision making** Yes

**Generating socio-economic benefits or services or women** Yes

**Will the project's results framework or logical framework include gender-sensitive indicators?**

Yes

B.4. Private Sector Engagement.

79. The project will explore partnerships with mobile money operators in Burkina Faso to develop access to other financial products than payments (ie. insurance, agricultural subsidy payments to farmers, credits). The recommendations issued in the UNCDF report "Making Access Possible: Financial Inclusion Diagnostic Report" conducted in 2017 can provide useful guidance for the development of mobile money use in this context. There are two mobile money operators in Burkina Faso, Orange Money (provided by Orange) and Mobicash (provided by Onatel) that can potential partner with the project. The project will also build on the exponential progress of mobile money agent outlets (500% increase in number between 2014 and 2017) that provides an opportunity for accessing financial products for local communities with no access to a bank account.

80. Trainings and activities will be developed with the involvement of finance institutions (activity 2.4.6). Under UNCDF, the project will facilitate access to several financial instruments (financing through value chains, purchase contracts, agricultural insurance, warehouse receipts). This activity will be conducted through the establishment of

partnerships with Finance Institutions, particularly Microfinance institutions (both in the form of cooperatives – mutuelles – or Société Anonyme – SAs), banks, mobile money operators and technology companies (fintech, agritech, etc.). One of the challenges would be to facilitate access to productive investments using affordable energy services. To this end, grants and technical assistance will be made available to MFIs in collaboration with FinTech to develop sustainable business models for facilitating investments. Another focus of the trainings will be on bank collaterals to align with the specific reality of local households and businesses.

#### A.5. Risks

**Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.**

Table 4: Risk matrix

#	Description	Date Identified	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
1	Theft and, vandalism and security issues could affect early warning and climate monitoring equipment.	September 4, 2019	Technical & Operational)	Medium P=2 I=3	<p>Public awareness workshops will be performed to sensitize communities to the importance of this infrastructure, as well as to involve local stakeholders in their maintenance and surveillance.</p> <p>Incentives may be provided to certain communities in order to maintain a basic level of operation of the stations.</p> <p>Recruitment of dedicated “climate observers” at local level who would also be tasked with surveillance.</p> <p>Community-level participation in the maintenance and surveillance of equipment will be mobilized in-kind to ensure long-term sustainability. ANAM will acquire insurance for all its equipment and will invest in surveillance and monitoring.</p>	MEGECC

2	Security in the targeted areas could worsen and jeopardize the project implementation	September 4, 2019	Technical & Operational)	High P=4 I=5	The security situation is followed-up closely in the Nakambe Basin and mitigation measures will be appropriately designed in case a risk occurs. During field visits and the conduct of field activities, strict security measures will be adopted by the project team and contractors.	
3	Environmental and social safeguards may be needed risks might arise.	September 4, 2019	Environmental & Operational	Medium P=2 I=3	A Social and Environmental Screening Procedure (SESP) was designed during the PPG phase. This has identified possible risks that need to be further considered during the preparatory phase, the project will prepare through an Environmental and Social Management Framework (ESMF), to be integrated in the project document, that describes and proposes measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts.	
4	Requisite human resources and data are unavailable.	September 4, 2019	Strategic & Operational	Medium P=2 I=3	The lack of requisite human resources will be mitigated initially by recruiting international consultants who will work closely with in-country counterparts and by targeted capacity-building activities. Training and capacity development activities for local personnel (not least through Output 1.4) are anticipated at all levels and for the various key stakeholders.	MEGECC
5	Local IT and telecommunication infrastructures are weak (e.g. international bandwidth and local mobile telecommunications networks)	September 4, 2019	Strategic & Operational	Medium P=2 I=3	ANAM is already connected at international level through the WMO Global Telecommunications System (GTS). In-country communications will be secured through contract with local mobile operators for data transmission via mobile. In situations where the GSM connection are not available, specific alternative cost-effective solutions will be used e.g. satellite and/or radio communications. Where feasible, automatic stations reporting over the mobile telecoms network will be preferred.	MEGECC
6	Limited Institutional capacity to effectively tackle all project components simultaneously	September 4, 2019	Strategic & Organizational	Medium P=2 I=3	A robust multi-disciplinary project implementation team will be established and supported with additional training of Project Manager/Coordinator if necessary.	MEGECC

7	Adverse climatic conditions may also pose risks to workforce health and safety, or damage adaptation measures being implemented	September 4, 2019	Environmental	Medium P=2 I=3	The project will draw a safety plan to reduce immediate risks of hazard occurrence during works. Safety measures for the workforce will be established in the inception phase, drawing on lessons from similar projects in challenging terrain. CONASUR will develop Early Warning Contingency Plans in vulnerable Communes as well as Contingency and evacuation plans. All sub-contracted firms will need to have Health and Safety (H&S) insurance for its employees.	MEGECC
8	Lack of incentives for local communities to cooperate in activities that do not yield immediate financial benefits, but aim at longer-term resilience, may reduce stakeholder engagement and comprehensive participation.	September 4, 2019	Financial	Medium P=2 I=3	The project incorporates activities that yield immediate benefits for communities in terms of skill development and income generation (agro-forestry schemes) income-generating activities including livelihood grants and microfinance. This will be emphasized during all meetings and consultations with community representatives during the inception phase.  In addition, the activities will be conducted on a voluntary basis, and communities will be informed and consulted on the selection of improved practices.	MEGECC
9	Delays in recruitment of qualified project staff may affect the timeframe of different project activities.	September 4, 2019	Operational	Medium P=2 I=3	A pro-active coordination mechanism will be established by UNDP during the project inception phase. TORs for key project staff have already been prepared	UNDP CO
10	Delayed policy level adoption of SOPs and EWS protocol at Basin level	September 4, 2019	Operational & Political	Medium P=2 I=3	SOPs design and drafting of EWS protocol will be monitored regularly by the project steering committee as well as by the Project Coordination.	MEGECC
11	Procurement and installation of hydro-meteorological equipment, including hardware and software, is delayed because of complications with the release of funds and/or national procurement procedures.	September 4, 2019	Technical & Operational	High P=4 I=5	Effective administrative planning will be undertaken, with support from UNDP CO, which will include procuring equipment at an early stage in the project implementation phase. The use of LTAs available at the UNDP corporate level might be considered at the request of the national implementing agency	UNDP CO

12	ANAM and DGRE does not have enough capacity to tailor Early Warning and climate products to suit vulnerable populations in the Nakanbé Basin particularly and the target Communes by the end of the project.	September 4, 2019	Technical & Operational	Medium P=2 I=3	During project development, ANAM and DGRE already indicated that they have some experience built from the first UNDP GEF EWS project in working with communities and private sector representatives to understand their needs for EW and climate tailored products. The project foresees a strong supportive training and capacity development programme so that ANAM and DGRE will acquire enough capacity to tailor climate products by the end of the project.	MEGECC
13	Falling market prices for products developed by the value chains could reduce the benefits to the local communities involved.	September 4, 2019	Social & Financial	Medium P=2 I=3	Under Output 2.4, the project will support the development of sustainable value chains, focus on accessing microcredit and entrepreneurship will ensure that a market assessment is conducted for each product to reduce uncertainties and risks and to know the chances of success before generating hope and engaging local communities.	MEGECC

#### A.6. Institutional Arrangement and Coordination

**Describe the Institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.**

81. Implementing Partner: The Implementing Partner for this project is the Ministry of Environment, Green Economy and Climate Change (MEEVCC). The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

82. The project will be implemented following UNDP's national implementation modality, according to the Standard Basic Assistance Agreement between UNDP and the Government of Burkina Faso, and the Country Programme.

83. The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

84. The implementing partner is responsible for:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
- Risk management as outlined in this Project Document;
- Procurement of goods and services, including human resources;

- Financial management, including overseeing financial expenditures against project budgets;
- Approving and signing the multiyear workplan;
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report of the funding authorization and certificate of expenditures.

85. Responsible Parties: The SP-CNDD will execute the project nationally in close collaboration with the National Meteorological Agency (Agence Nationale de la Meteorologie, ANAM), The Directorate General of Water Resources (DGRE), Nakanbe Water Agency (DG-AEN), The Ministry of Agriculture and Hydraulic Facilities (MAAH), The National Emergency Relief and Rehabilitation Council (CONASUR) and the Directorate General of Civil Protection (DGPC) as responsible parties, as well as the NGO's & CBO's collaborating in local level pilot interventions of the project in selected pilot communities of Kaya, Zitenga, Ziniaré, Absouya and Korsimoro in the provinces of Oubritenga and Sanmatenga.

86. The National Council for Sustainable Development (CNDD) will act as key coordinator for the overall project and implement activities related to Output 2.1 particularly those related to ecosystem-based approach, as well as leadership for activities in Components 2 in close partnership with MAAH (Output 2.3), DG-AEN (Output 2.2) and UNCDF (Output 2.4). The National Meteorological Agency (Agence Nationale de la Meteorologie, ANAM) in straight collaboration with The Directorate General of Water Resources (DGRE), will lead the activities in Output 1.1 and 1.4 in conjunction with DG-AEN. These three institutions (ANAM, DGRE & DG-AEN) will cooperate with CONASUR and DGPC who will lead in the delivery of the specific activities in Output 1.3 (CONASUR as the responsible partner). Finally, DG-AEN will be the responsible partner for the implementation of activities under Output 1.2 with the necessary support from ANAM, DRGE and CNDD. The matrix of partnership and collaborations envisaged for the implementation of the various Outputs and Activities is shown in the Table below.

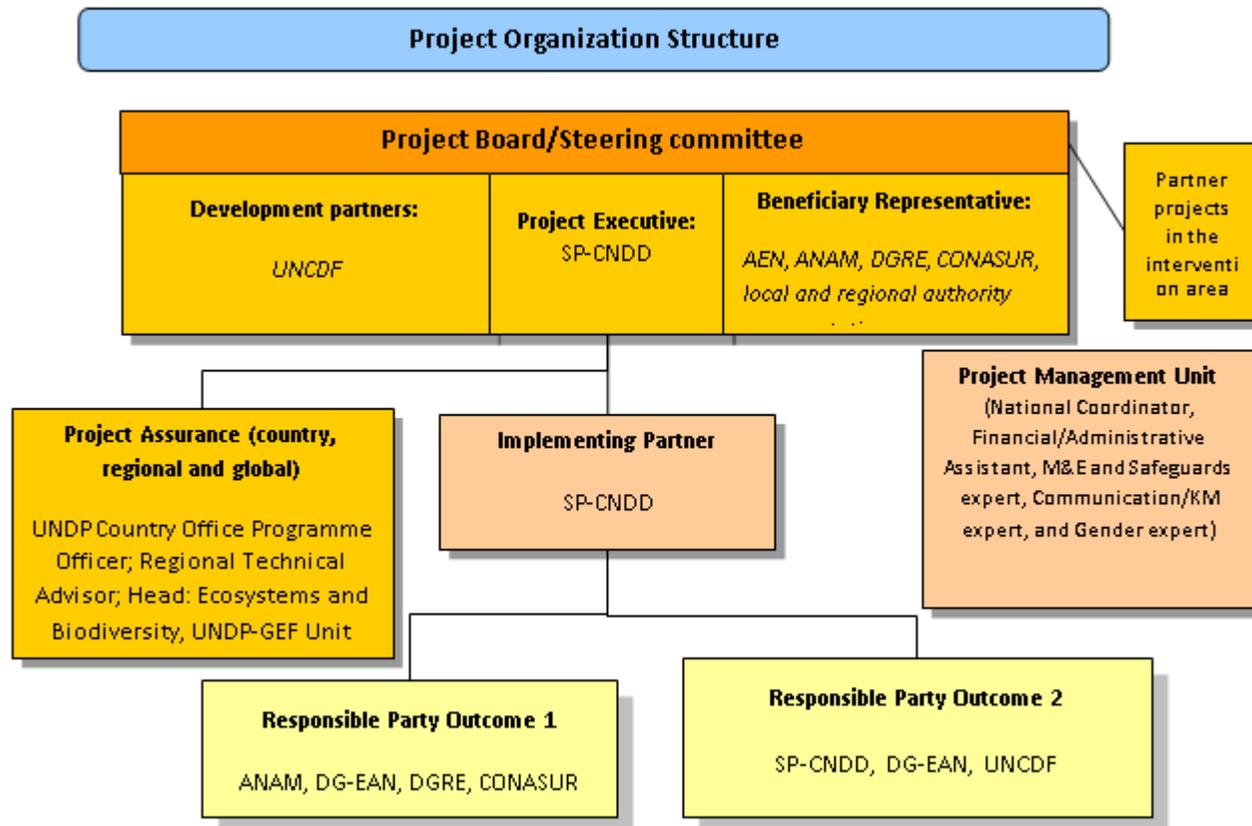
Leading <u>Responsible Parties</u>	Outcome	Output	Close Partnership	Support from
ANAM	1	1.1	DGRE & DG-EAN	CONASUR
DG-EAN	1	1.2	ANAM & DGRE	CNDD
CONASUR	1	1.3	ANAM & DGRE	CNDD & DGPC
ANAM	1	1.4	DGRE & DG-EAN	CONASUR & DGPC
SP-CNDD	2	2.1	DG-EAN	DGRE
DG-EAN	2	2.2	SP-CNDD	MAAH
DG-EAN	2	2.3	MAAH	ANAM

DG-EAN	2	2.4	SP-CNDD	MAAH
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87. Project stakeholders and target groups: The CCCos will be the platform at the local level to give local partners the opportunity to give recommendations regarding project management, including implementation of plans and project reviews /evaluation, and also to provide guidance on technical aspects of the project, including to consultants. In addition, at the local level, communities, local organizations, and the private sector will have an effective participation in decision-making as part of the landscape-level planning, in the development and negotiation of agreements, and dialogue for the development, promotion and implementation of practices for the sustainable management of forested areas and natural resources and environmentally sound production practices and biodiversity-friendly value chains in the Nakanbé Basin. These arrangements will ensure the contribution of traditional knowledge in determining sustainable natural resource management measures as well as taking into account local rights, priorities and needs of communities in decision-making and planning processes. They will ensure the contribution of local actors to document / inform the outcome indicators that affect them. These consultations will play a central role in the process of prior dissemination of information regarding the project's interventions with local communities and the obtaining of consent agreements to participate in them, as well as in the reporting mechanism of incidents and grievances.

88. UNDP: UNDP is accountable to the GEF for the implementation of this project. This includes oversight of project execution to ensure that the project is being carried out in accordance with agreed standards and provisions. UNDP is responsible for delivering GEF project cycle management services comprising project approval and start-up, project supervision and oversight, and project completion and evaluation. UNDP is also responsible for the Project Assurance role of the Project Board/Steering Committee.

89. The project organisation structure is as follows:



90. The Project Board (also called Project Steering Committee) is responsible for taking corrective action as needed to ensure the project achieves the desired results. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

91.

92. In case consensus cannot be reached within the Board, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.

93. Specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible mitigation and management actions to address specific risks;
- Agree on project manager's tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded;
- Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;
- Ensure coordination between various donor and government-funded projects and programmes;
- Ensure coordination with various government agencies and their participation in project activities;
- Track and monitor co-financing for this project;
- Review the project progress, assess performance, and appraise the Annual Work Plan for the following year;
- Appraise the annual project implementation report, including the quality assessment rating report;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Review combined delivery reports prior to certification by the implementing partner;
- Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Address project-level grievances;
- Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

94. The composition of the Project Board must include the following roles:

- a. Project Executive: Is an individual who represents ownership of the project and chairs the Project Board. The Executive is normally the national counterpart for nationally implemented projects. The Project Executive is: the SP-CNDD
- b. Beneficiary Representatives: Individuals or groups representing the interests of those who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often civil society representative(s) can fulfil this role. The Beneficiary representative (s) is/are: AEN, ANAM, DGRE, CONASUR, local and regional authority representatives

c. Development Partner: Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partners is UNCDF.

d. Project Assurance: UNDP performs the quality assurance role and supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. UNDP provides a three – tier oversight services involving the UNDP Country Offices and UNDP at regional and headquarters levels. Project assurance is totally independent of the Project Management function.

Project extensions: The UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country Office oversight costs during the extension period must be covered by non-GEF resources.

Composition and operation of the executing body or project coordination unit

95. The role of the executing body is to coordinate the activities of the project, to ensure the mobilization and proper management of resources, to ensure the accountability of the beneficiaries, and to ensure the Secretariat of the consultation/dialogue framework of the project.

96. Under the direction of the Coordinator (ToRs available in Annex8), the executing body is composed as follows:

- An administrative and financial assistant (ToRs available in Annex8);
- 3 drivers;
- A full-time expert responsible for monitoring and evaluation and safeguards (ToRs available in Annex8);
- An expert on gender issues on a part-time basis (ToRs available in Annex8);
- An expert in communication and knowledge management on a part-time basis (ToRs available in Annex8).

**Additional Information not well elaborated at PIF Stage:**

#### **A.7. Benefits**

**Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?**

123. This project will contribute to improving the land use practices that local communities in the Nakanbé basin use to reduce erosion caused by climate change. Ecosystem rehabilitation interventions will be conducted for a significant forested area (45 ha in Absouya - communal forest; 250 ha in Korsimoro Nakanbé - classified forest; 45 ha in Ladwenda - wood energy; and 45 ha in Bissiga - wood energy). The project will also restore 200ha of the degraded area of Bissiga classified forest NTFP-producing trees (including néré, karité, baobab and kapok), where runoff and erosion phenomena are most acute and threaten forest growth, as well as a separate area of forest - 50% of the 8km<sup>2</sup> - around the sub-basins (Ziga and Absouya) involving participatory village community plantations (“village forests”).

124. This project will also support the training of 500 farmers and informal business owners (50% of whom are women and 25% of young people) using digital technology (activity 2.4.3). For behavioral changes and the adoption of good farming and management practices, financial education themes, and additional specific themes will be digitized and used as a communication and capacity building support by and for the people around the Nakanbé basin. In addition 100 young entrepreneurs (50% women) will be trained in entrepreneurship / business creation and market access in each pilot commune (Kaya, Zitenga, Ziniaré, Absouya and Korsimoro) (activity 2.4.5). To increase self-employment in the business ecosystem around the Nakanbé basin, modules in entrepreneurship, business creation and negotiations with Financial Institutions will be provided.

125. The project will contribute to the strengthening of Burkina Faso’s Institutional capacity by providing capacity development/training and data monitoring, collection network, transmission, data archiving, analysis, exchange, and modelling. At least seven hydrologists will be trained to produce flood/drought forecasts for the Nakanbé basin; five civil protection workers will benefit from an upgrade of the system for dissemination of disaster preparedness messages and current response plans at the local level; and four maintenance technicians (within DG-AEN, ANAM, DGRE and CONASUR) and 10 provincial government officers (at least four DG-AEN staff) will be trained to execute, collate and process data and information, carry out vulnerability and risk assessments in the Nakanbé basin, and systematically streamline digital information, including mapping.

126. The proposed project is expected to benefit the populations in the five communes of Kaya (54,365), Zitenga (53,259), Ziniaré (55,852), Absouya (26,338) and Korsimoro (56,898) with a total of 246,712 people and in the longer term the entire population of the Nakanbé Basin. The overall objective is to directly and indirectly reach approximately 500,000 people (with exception of Ouagadougou the Capital) beneficiaries with community livelihood enhancement and preparedness to climate risks. Overall this LDCF project will: 1) enhance ecosystem-based adaptation of the Nakanbe Basin; 2) reduce runoff and soil erosion; 3) reduce losses of NTFP-products and livelihoods; 5) improve biodiversity; 6) enhance livelihoods and income through the adoption of new livelihood strategies for 500 farmers and informal business owners and 100 young entrepreneurs of which at least 50% will be women.

#### **A.8. Knowledge Management**

**Elaborate on the Knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user- friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.**

103. The project team will ensure extraction and dissemination of lessons learned and good practices to enable adaptive management and upscaling or replication at local and global scales. Results will be disseminated to targeted audiences through relevant information sharing fora and networks. The project will contribute to scientific, policy-based and/or any other networks as appropriate (e.g. by providing content, and/or enabling participation of stakeholders/beneficiaries).

104. More specifically, a knowledge outreach programme for raising the capacity of the various stakeholders will be developed. This will include the setting up of an interactive user-friendly web portal under the DG-AEN to share vulnerability and risk mapping developed under Output 1.2. Moreover, trainings will be conducted at the national, district and community level, to raise awareness of (i) senior Government technical officers and policy makers involved in planning and risk prevention in key sectors, and (ii) district community leaders, on Climate Change impacts, Vulnerability Assessment and EW preparedness. The training sessions coupled with the results from the participatory risk/hazard mapping and climate change projections will facilitate the mainstreaming of climate change in sectoral planning at national and district/community level.

105. Finally, communication of warnings and advice to users and remote communities in the five target communes will be carried out using a variety of channels and vehicles from the traditional media channels (newspaper, radio & TV) to local community radios and community gathering using local languages for a rapid and targeted dissemination. Activities in Outcome 2 have a strong participatory approach that will help disseminate knowledge and information at the local level.

## **B. Description of the consistency of the project with:**

### **B.1. Consistency with National Priorities**

**Describe the consistency of the project with nation strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.**

97. This initiative is fully aligned with the priorities of the Government of Burkina Faso as pursued in its development programmes and plans, particularly in terms of water resources and their management framework, disaster and risk management programmes. This project supports the Outlook Burkina 2025 vision, as well as the Master Scheme for the Development and Management of Water Resources (SDAGE) for the Nakanbé Basin and the Water Development and Management Plan (SAGE). Specific structures to promote integrated water resources management (IWRM) include the National Water Council, the Water Technical Committee and water agencies, such as local water committees.

98. Burkina Faso ratified the UNFCCC in 1993 and the Kyoto Protocol in 2005. To date, it has developed and adopted policy and strategy documents relating to climate change in response to the provisions of these protocols. The documents include:

- National Strategy for implementing the Climate Change Convention, adopted in 2001;
- National Action Programme for Adaptation to Climate Change (NAPA), in 2007;
- Second National Communication;
- National Sustainable Development Policy (NSDP);
- Nationally Determined Contribution (NDC); and,
- National Adaptation Plan (NAP), adopted in 2014.

99. This initiative is also fully in line with the second generation of the National Programme for IWRM (PNGIRE), which the Government of Burkina Faso adopted recently. This programme includes five national sectoral programmes for the 2016–2030 period, based on the National Programme for Economic and Social Development (Programme national de développement économique et social, PN-DES, 2016–2020), the National Water Policy (2016–2030) and Sustainable Development Goal (SDG) 6 :

- National Drinking Water Supply Programme (Programme national d’approvisionnement en eau potable, PN-AEP, 2016–2030)
- National Sanitation and Sewerage Programme (Programme National d’Assainissement des Eaux Usées et Excréta, PN-AEUE, 2016–2030)
- National Programme for IWRM (Programme National pour la Gestion Intégrée des Ressources en Eau, PN-GIRE, 2016–2030)
- National Water and Sanitation Governance Programme (Programme Gouvernance du secteur Eau et Assainissement, PGEA, 2016–2030)
- National Programme for Dam Development (Programme National des Aménagements Hydrauliques, PN-AH, 2016–2030)

100. The project will also contribute to the achievement of:

- SDG 5 - Achieve gender equality and empower all women and girls.
- SDG 6 – Ensure availability and sustainable management of water and sanitation for all.
- SDG 10 - Reduce inequality within and among countries.
- SDG 11 – Make cities and human settlements inclusive, safe, resilient and sustainable.
- SDG13 - Take urgent action to combat climate change and its impacts.
- SDG15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

#### Institutional Arrangements

101. Current institutional arrangements for water resources management in Burkina Faso are described below.

- Ministry of Water and Sanitation (MoEA) is responsible for water resources management. Through its Directorate-General, this ministry will support project activities related to the adoption of sustainable agricultural and forestry practices in watersheds to increase vegetation cover, reduce erosion in and improve the efficiency of watersheds and the use of water in agriculture, and reduce vulnerability to droughts and floods.
- The National Office of Water and Sanitation (ONEA) is responsible for the production and distribution of water in urban and semi-urban centres, using underground water (boreholes) or surface water (dams). It is particularly active at the Ziga (200 million m<sup>3</sup>), Loumbila (35 million m<sup>3</sup>) and Dem (4 million m<sup>3</sup>) dams, which are all in the project area.
- The Nakanbé Water Agency (Agence de l’Eau du Nakanbé, AEN) was established in March 2007 and was the first agency to become operational to implement IWRM practices in Burkina Faso. It participates in the meetings of the National Water Council (Conseil national de l’eau, CNEau) and the Technical Committee for Water (Comité technique de l’eau, CTE). The Basin Committee, the highest body of the AEN, has been in place since 2010 and holds regular sessions (one General Assembly per year).

- Local Water Committees (CLEs) were created to locally support the implementation of the SDAGE. The extent of their level of involvement depends on the severity of the problems related to the development and management of sub-basins, aquifers, rivers, urban agglomeration and waterworks. The main functions of these structures are to assist the Government, through the MoEA, to take decisions and effectively implement actions to protect and finance water resources management at the local level. They also help to create awareness of and sensitize the populations about sustainable water management practices. CLEs can play a key role as local actors in water management, pending the establishment, in the medium-term, of the basins' CTE on a wider scale. Other equally important issues relate to qualified human resources and sufficient financial resources. Twenty-six CLEs have been created in the Nakanbé basin (24 are operational) at the dam or watershed level to act as a local-level forum for consultation among all stakeholders with an interest in water management in a given sub-basin.
- The National Water Council (CNE) operates at the national level to provide consultative water management, involving the State, local communities, the private sector and civil society. The CNE's main objective is to enable consultation among actors in the water sector. This permanent, structured, productive consultation, which involves all actors, differs from the typical approach, in which the State simply informs the other actors of developments. The CNE is consulted on national water issues, notably the IWRM action plan (SDAGE and SAGE), the basin agencies' intervention programmes, essential laws in the water area that may have an important impact on water, as well as on any other matter in this area.
- The Technical Water Committee (CTE) is an administrative body that coordinates ministries' sectoral policies and proposes fundamental water resource development options. This body is composed of ministries' general secretaries (or their representatives) involved in water, health, agriculture, animal breeding, fishing, forestry, environment, urban development and housing. This framework provides the State a harmonized perspective on water-related matters within the CNE.
- Communal Concertation Frameworks (CCCo) provide a framework for dialogue and exchange at the communal level between the various stakeholders for the design, ownership and implementation of the Communal Development Plan (CDP); serve as a framework for information, training and mobilization of the human, technical, material and financial resources necessary for the preparation, implementation and monitoring and evaluation of the Communal Development Plan (CDP); create the conditions for harmonizing intervention approaches and facilitating the collection, dissemination of data and experiences. They gather the main actors at the communal level, including the CLEs when available.

#### Water management tools and planning tools

102. The main water-related management and planning tools are:

- PN-GIRE: a new IWRM program was developed to consolidate the achievements of the two phases of the PAGIRE (2003-2008 and 2009-2015), with a view to operationalizing IWRM in the field. This new programme, the National Programme for IWRM (PN-GIRE 2016-2030), was adopted in June 2016. Its strategic objective is "to contribute sustainably to the satisfaction of the fresh water needs of users and aquatic ecosystems." Its implementation faces several internal and external risks that must be controlled throughout the implementation period. They include: (i) non-compliance with SDAGE; (ii) lack of stakeholder ownership of water resources management; (iii) weak capacity to address water resource issues; and, (iv) low funding. The GoBF has proposed the following risk mitigation measures: strengthening the institutional capacity of water agencies, such as the AEN and effective mobilization of funding for water matters and diversification of funding sources (including NGOs, private foundations and decentralized cooperation);
- SDAGE: this essential legislative and statutory water planning-related document is enforceable against third parties regarding the management of water resources (generally, watersheds). SDAGE is a sectoral scheme, adopted by AEN for water use planning. It is a vital tool for the planning, integration and management of water resources in the basin,

guiding public development programs. It also defines the rules governing the mobilization and management of water resources at the basin level, particularly for many of the regional and provincial schemes that will be implemented by 2016-2030, to enable actors to adjust their interventions. The basin's institutions (CNE-AEN- CLEs) will implement the SDAGE;

- Multi-year Intervention Programme: this three-year action plan concretizes the SDAGE provisions over the 2016-2030 period;
- SAGE: this is a variation of the sub-basin-scale SDAGE, intended to operationalize and tackle the specific problems of each section of the basin;
- River contracts: these are complementary tools for implementing IWRM at the sub-basin scale or on a body of water, with a view to solving specific issues; and,
- Communal Development Plans/Drinking Water Supply and Sanitation programme (DWSS): these plans specifically address issues related to drinking water supply and sanitation at the municipal level.

### **C. Describe The Budgeted M & E Plan:**

106. The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. The Monitoring Plan included in Annex details the roles, responsibilities, frequency of monitoring project results.

107. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements.

108. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF Monitoring Policy and the GEF Evaluation Policy and other relevant GEF policies. The costed M&E plan included below, and the Monitoring plan in Annex, will guide the GEF-specific M&E activities to be undertaken by this project.

109. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Additional GEF monitoring and reporting requirements:

110. Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

- a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
- b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
- c. Review the results framework and monitoring plan.
- d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
- e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
- f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.

- g. Plan and schedule Project Board meetings and finalize the first-year annual work plan.
- h. Formally launch the Project.

#### GEF Project Implementation Report (PIR):

111. The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the Project Board. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

#### LDCF Core Indicators:

112. The LDCF Core indicators included as Annex will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent ground truthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF website. If relevant to the project: The required Protected Area Management Effectiveness Tracking Tool (METTs) have been prepared and the scores include in the GEF Core Indicators.

#### Independent Mid-term Review (MTR):

113. The terms of reference, the review process and the final MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC).

114. The evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired by UNDP evaluation specialists to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the consultants should not be in a position where there may be the possibility of future contracts regarding the project under review.

115. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate.

116. The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by June 2022. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

#### Terminal Evaluation (TE):

117. An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center.

118. The evaluation will be ‘independent, impartial and rigorous’. The consultants that will be hired by UNDP evaluation specialists to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the consultants should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

119. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate.

120. The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by December 2024. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report’s completion.

**Final Report:**

121. The project’s terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

122. Agreement on intellectual property rights and use of logo on the project’s deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy and the GEF policy on public involvement

<b>Monitoring and Evaluation Plan and Budget:</b>			
<b>GEF M&amp;E requirements</b>	<b>Responsible Parties</b>	<b>Indicative costs (US\$)</b>	<b>Time frame</b>
<b>Inception Workshop</b>	Implementing Partner Project Manager	Total: 30,000	Within 60 days of CEO endorsement of this project.
<b>Inception Report</b>	Project Manager	None	Within 90 days of CEO endorsement of this project.
<b>Monitoring of indicators in project results framework</b>	Project Manager will oversee national institutions/agencies charged with collecting results data.	Per year: 5,000 (Gov. contribution /staff time) Total: 25,000	Annually prior to GEF PIR. This will include GEF core indicators.

<b>Monitoring and Evaluation Plan and Budget:</b>			
<b>GEF M&amp;E requirements</b>	<b>Responsible Parties</b>	<b>Indicative costs (US\$)</b>	<b>Time frame</b>
<b>GEF Project Implementation Report (PIR)</b>	Regional Technical Advisor UNDP Country Office[1] <sup>1</sup> Project Manager	None <sup>15</sup>	Annually typically between June-August
<b>Monitoring all risks (Atlas risk log)</b>	Project Manager	None	On-going.
<b>Monitoring of ESMP and Biodiversity Action Plan</b>	<b>Project Safeguards Officer</b>	<b>20,000</b>	<b>On-going.</b>
<b>Monitoring of stakeholder engagement plan</b>	Project Stakeholder Engagement Officer	Paid through Component 1 and 2 (Communication specialist and Project Manager)	On-going.
<b>Monitoring of gender action plan</b>	Project Gender Officer	Gender-based activities are included in the project budget of Components 1 and 2	On-going.
<b>Supervision missions</b>	UNDP Country Office <sup>14</sup> <sup>14</sup>	None <sup>[2]</sup> <sup>2</sup>	Annually
<b>Oversight missions</b>	UNDP-GEF RTA and UNDP-GEF Directorate	None <sup>15</sup>	Troubleshooting as needed
<i>Mid-term LDCF Core indicators</i>	SP/CNDD M&E specialist	<i>USD 10,000</i>	<i>Before mid-term review mission takes place.</i>
<i>Independent Mid-term Review (MTR)</i>	Independent evaluator	<i>USD 50,000</i>	<i>Add date included on cover page of Project Document</i>

<b>Monitoring and Evaluation Plan and Budget:</b>			
<b>GEF M&amp;E requirements</b>	<b>Responsible Parties</b>	<b>Indicative costs (US\$)</b>	<b>Time frame</b>
<b>Terminal LDCF Core indicators</b>	SP/CNDD M&E specialist	<i>USD 10,000</i>	Before terminal evaluation mission takes place
<b>Independent Terminal Evaluation (TE)</b>	Independent evaluator	USD 50,000	<i>Add date included on cover page of Project Document</i>
<b>TOTAL indicative COST</b>		<b><i>195,000</i></b>	

**PART III: Certification by GEF partner agency(ies)**

**A. GEF Agency(ies) certification**

<b>GEF Agency Coordinator</b>	<b>Date</b>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email</b>
Pradeep Kurukulasuriya	2/24/2020	Clotilde Goeman	6623049100	clotilde.goeman@undp.org

**ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).**

Please see Section IX of the project document.

**ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).**

n/a

**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS.**

**A. Provide detailed funding amount of the PPG activities financing status in the table below:**

If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake exclusively preparation activities up to one year of CEO Endorsement/approval date. No later than one year from CEO endorsement/approval date. Agencies should report closing of PPG to Trustee in its Quarterly Report.

PPG Grant Approved at PIF: <b>150,000 USD</b>			
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent Todate</i>	<i>Amount Committed</i>
Technical assistance ( design technical elements as well as all the required financial and administrative components of the project)	103,100.00	104,824.12	-1,724.12
Conducting missions to the project sites	30,900	2,275.68	28,624.32
Stakeholder consultation and validation workshop	16,000	10,719.03	5,280.97

<b>Total</b>	150,000	117,818.83	32,181.17
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**ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)**

**Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)**

Please attach the geographical location of the project area, if possible

**ANNEX E: GEF 7 Core Indicator Worksheet**

Use this Worksheet to compute those indicator values as required in Part I, Table G to the extent applicable to your proposed project. Progress in programming against these targets for the program will be aggregated and reported at any time during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

n/a

**ANNEX: Project Taxonomy Worksheet**

Use this Worksheet to list down the taxonomic information required under Part1 by ticking the most relevant keywords/topics//themes that best describes the project

n/a



# Submitted to GEF Secretariat Review

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